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NURTURING VALUES FOR EFFECTIVE PRACTICE

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8th (Wed) – 12th (Sun) January 2020
Singapore

ABSTRACTS FOR FREE AND SHORT COMMUNICATIONS

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Friday 10 January 2020, 11.45am

Aquarius 2, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 1 – YOUNG SCHOLAR 1

Beyond Knowledge and Skills: Utilising a Social Theory of Learning to Explain the Diverse Impacts of Continuing Professional Development
Louise Allen, Australia

A Call for an Advanced Practice Nurse-Specific Residency Programme for Pre-Masters Registered Nurses: A Nationwide Study on Registered Nurses' Perceptions Towards Advanced Practice Nursing
Brigitte Woo, Singapore

A Systematic Review on Assessment Methods of Medical Ethics for Medical Students and Doctors from 1990-2018
Daniel Zhihao Hong, Singapore

A Multidisciplinary Workshop on Neonatal End of Life Care- A Challenging But Rewarding Experience
Nicholas Beng Hui Ng, Singapore

Nurturing the Motivation of Medical Students in DLSMHSI Towards Supporting the Underprivileged Communities
Ma Roxanne Dumlao, Philippines

An Evaluation of the Changes in Reactions, Attitudes and Perceptions Towards Interprofessional Collaboration Among NUS Nursing and Pharmacy Undergraduates After Their Participation in Interprofessional Education Activities
Chi Bu, Singapore

Otolaryngology Catastrophic Events Simulation Training
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A Scoping Review of Mentor Training Programmes in Medicine Between 1990 and 2017
Krish Sheri, Singapore

Does Order of Postings Affect Year 3 Academic Scores?
Weixian Lee, Singapore

BEYOND KNOWLEDGE AND SKILLS: UTILISING A SOCIAL THEORY OF LEARNING TO EXPLAIN THE DIVERSE IMPACTS OF CONTINUING PROFESSIONAL DEVELOPMENT

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Background and Aims

Continuing professional development (CPD) is the backbone of life-long learning for all health professionals. Continuing professional development facilitates updates in knowledge and skills, changes perspectives and attitudes, and can play an important role in the development of one's professional identity, career development and networks. Existing literature takes a narrow view when assessing the impacts of CPD programmes. Quantitative evaluations that explore predetermined outcomes and only capture short-term impacts are common, and prevent the full range of impacts of CPD programmes from being captured. This qualitative study aims to explore the positive impacts of CPD programmes from the perspective of participants, with a particular focus on those aspects not widely measured. The study also aims to apply Wenger's social theory of learning to explore why these impacts occur.

Methods

Twenty semi-structured in-depth interviews were conducted with past scholars from two exemplar CPD institutes that use innovative pedagogical approaches, and emphasise social learning, to explore the range of impacts that can occur from attending CPD programmes. Braun and Clark's thematic analysis was used to analyse the interview data. A post hoc theory was used to explain why the impacts of CPD programmes occur. Given the importance of connections and relationships in the impacts of these courses, applying a social learning theory to these results provides a way to explore them and theorise why they occur.

Results

We found that a range of meaningful impacts can occur from attending these CPD courses. Five themes were generated from the analysis that described these impacts and they are: i) Growing and utilising a network of likeminded individuals; ii) Forming stronger identities; iii) Application to practice, iv) Achievement and recognition; and v) Beyond the scholar. The results show that it is possible for CPD programmes to have a broad range of short-, medium- and long-term impacts. Our findings challenge the value of considering limited impacts when evaluating CPD programmes and show that decision making on the utility of CPD programmes should consider a much broader range of impacts. Wenger's social theory of learning can be used to explain how and why these impacts occur, and also to postulate why some participants may not experience impacts.

Conclusion

The results from this study suggest that broad and sustained impacts are possible as a result of attending CPD programmes, but an ongoing social process of learning is crucial to achieving these impacts.

A CALL FOR AN ADVANCED PRACTICE NURSE-SPECIFIC RESIDENCY PROGRAMME FOR PRE-MASTERS REGISTERED NURSES: A NATIONWIDE STUDY ON REGISTERED NURSES' PERCEPTIONS TOWARDS ADVANCED PRACTICE NURSING

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Background and Aims

Globally, the development and implementation of advanced practice nurses (APNs) have been deemed propitious. APNs are recruited and developed from the current pool of registered nurses (RNs). Empirical research is needed to inform practice on ensuring the sustainability of the APN workforce through the recruitment and development of the current population of RNs. The aims of the study are to explore RNs' perceptions toward the role of APNs and examine RNs' interests in becoming APNs.

Methods

A nationwide cross-sectional study was conducted in Singapore (24 January 2019 - 31 March 2019). Population sampling was undertaken; 1,025 RNs were included. Chi-square test was conducted to determine the associations between respondents' characteristics and interests in becoming APNs. Backward-stepwise logistic regression was undertaken to remove variables without significant associations with interests in becoming APNs. Content analysis of open-ended.

Results

Respondents displayed optimism and acceptance toward APNs. However, only 30.7% hoped to become APNs. Presented in this study is a proposed logistic regression model to predict the likelihood of indicating interests in becoming APNs based on the characteristics of RNs. The logistic regression model suggested that younger registered nurses with five years or less of experience were more likely to show interests in the advanced practice nurse career track [Age: Odds Ratio (OR) = 9.401, 95% Confidence Interval (CI) = 2.355 - 37.523 for 21 - 24 years old, OR = 9.506, 95% CI = 2.618 - 34.511 for 25 - 34 years old, reference: ≥ 55 years; work experience: OR = 1.933, 95% CI = 1.014 - 3.685 for ≤ 5 years, reference: ≥ 15 years]. A bivariate analysis between being identified by superiors as suitable APN candidates and RNs' characteristics was found to be an antithesis to the results of the logistic regression. RNs who were older (25 to 54 years old) and had five or more years of experience had a greater association with being identified by superiors as suitable candidates (Age: $\chi^2 = 12.725$, p-value = 0.013; work experience: $\chi^2 = 23.511$, p-value < 0.001).

Conclusion

RNs' positive perspectives toward the role of APNs do not translate into interests in the role. Nursing leaders were reported to have a low success rate in identifying RNs who were both suitable and interested in the APN role. Greater efforts need to be made to improve nursing leaders' success rate in identifying potential candidates with concomitant interests in becoming APNs. The study offers pragmatic applicability in ensuring the sustainability and growth of the APN workforce. An APN-specific residency programme can be developed to recruit early-career RNs who show interests and potential but have yet to meet the minimum criteria for the APN preparatory training. Such residency programme may increase RNs' clinical aptitudes and establish their levels of commitment to the APN career path prior to embarking on formal preparatory training. This strategy is multi-pronged, and in addition to retaining early career nurses by keeping them engaged and motivated, it may be facilitative to recruiting RNs for the APN workforce.

A SYSTEMATIC REVIEW ON ASSESSMENT METHODS OF MEDICAL ETHICS FOR MEDICAL STUDENTS AND DOCTORS FROM 1990-2018

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Background and Aims

The assessment of medical ethics needs to be rooted upon key pillars of ethics and its application to clinical practice. However, the means of assessing medical ethics have been widely disputed and there lacks consensus with regards to how to adequately and reliably assess ethical reasoning in medical students and doctors. Moreover, the heterogeneity of assessment methods makes it difficult for educators to select the appropriate method for evaluating the learner's ethical sensitivity, knowledge, behaviours and skills.

Methods

The BEME guidelines and PRISMA framework for conducting systematic reviews were employed to evaluate the size, gaps and scope of ethical concerns in medicine. Databases PubMed, ERIC, Embase and PsycINFO were searched for articles published between 1st January 1990and 31st December 2019. These articles concerned assessment methods in medical ethics in medical schools and hospitals. Articles obtained were sieved through according to internal selection criteria. Open coding and thematic analysis were then done for the articles selected.

Results

8883 abstracts were identified, 326 full-text articles retrieved, from which 78 articles were included and thematically analysed. A variety of assessment methods were found, including but not limited to clinical vignettes, MCQs, essays and OSCEs. Themes included the approaches and principles behind the assessment method, the pros and cons of each assessment method, its impact on the learner and curriculum and strategies for improving the rigor of assessment. Examples include the inclusion of ethics related questions in formal examinations and standardisation of ethics curricula across institutions.

Conclusion

A formal ethics curriculum with appropriate assessment methods, clearly associated with well-defined and relevant learning objectives, are indispensable to a curriculum that seeks to inculcate ethical sensitivity and reasoning in medical undergraduates and postgraduates. A cohesive measurement of ethical competency requires assessment of both ethical knowledge and application of it in an observed environment and actual clinical practice. Besides evaluating these aspects of ethical competency, assessment methods should also identify gaps in knowledge and reflect areas for improvement while being objective and fair. However, we must acknowledge that institutions may face constraints such as the lack of manpower, expertise or time which may limit their ability to employ the necessary assessment methods.

A competent medical student or doctor should be both clinically skilled and ethically competent. Concerns regarding a hidden curriculum suggest the need to switch to a formal ethics curriculum with assessment methods to measure knowledge, behaviour and skills. Better understanding of the problem and a clear direction for future research on ethics curriculum, the effect of assessment methods on student's learning, the possible creation of an instrument that can objectively and reliably assess ethical competency, and the opinion of students must be explored.

A MULTIDISCIPLINARY WORKSHOP ON NEONATAL END OF LIFE CARE- A CHALLENGING BUT REWARDING EXPERIENCE

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Background and Aims

The teaching of end of life (EOL) care has not been emphasised adequately in many undergraduate medical or nursing curricula. Many practitioners struggle with aspects of EOL care, and the challenge presumably magnifies when it involves neonates or stillbirths. Appropriate training on EOL issues is crucial for practitioners caring for these young patients as families would require much compassion, bereavement care and support from teams when a bad outcome occurs.

We developed a multidisciplinary workshop on neonatal EOL care for doctors and nurses with the aim of increasing confidence in dealing with EOL cases involving neonates.

Methods

The half-day workshop runs 4 monthly and is facilitated by senior doctors, nurses and medical social workers with previous training and experience in neonatal EOL care. Participants are given pre-reading material. The actual workshop involves role play of 4 scenarios with small group discussions, facilitator debrief and input for each scenario. We report our experience after 2 successful workshops.

Each participant completed a pre-workshop questionnaire adapted from the BEACONNS (Bereavement/ End-of-life Attitudes about care: Neonatal Nurses Care) questionnaire, where we surveyed the level of comfort in EOL issues using the Likert scale (1-5). Participants also filled up a post-workshop survey.

Results

We surveyed all participants (n=25) who attended the first 2 workshops, 24 (96%) of which responded (15 nurses, 9 doctors). In the pre-workshop survey, 15 (62.5%) participants claimed to have received some training in EOL care but only 5 (33.3%) were somewhat satisfied with the prior training received. None of them had received training specific to neonatal or paediatric EOL care. Of the 24 responders, 12 (50.0%) were comfortable (Likert scale rating of 4-5) caring for the family of a dying infant, 8 (33.3%) in discussing funeral arrangements with the family while 7 (29.1%) in providing culturally sensitive EOL support for families of other cultures. When it came to discussing withdrawal of life support, only 2 (8.3%) participants were comfortable doing this while only 1 (4.2%) participant was comfortable discussing autopsy or organ donation with families. Interestingly, a significantly larger proportion of people (62.5%) were comfortable listening to family members express their grief compared to talking to families about grief (25%) ($p=0.02$). There was no significant difference between the behaviour of doctors and nurses on their delivering EOL care.

For the post-workshop feedback survey, all 24 participants strongly agreed that they would recommend this course for their peers. All participants found the use of case scenarios, role play and the facilitators input to be useful (rated 3 or 4); while only 16 (66.7%) participants rated the pre-workshop reading materials to be useful.

All participants felt more confident in discussing withdrawal of care and funeral arrangements with families after the workshop.

Conclusion

Doctors and nurses are generally under-confident in dealing with EOL issues, particularly on withdrawal of care, autopsy and organ donation and had reservations on talking to family about grief and bereavement. A multidisciplinary workshop encompassing role-play, case scenarios and groups discussions can help increase confidence and competence in these areas.

NURTURING THE MOTIVATION OF MEDICAL STUDENTS IN DLSMHSI TOWARDS SUPPORTING THE UNDERPRIVILEGED COMMUNITIES

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Background and Aims

The lack of quality health care services, resources, and workforce in many areas of the Philippines is a problem that remains unsolved up to this day. In 2012, former Department of Health secretary Enrique Ona stated, “There are still doctorless underserved communities.” Challenges in the health care system led to this research. The level of motivation of medical students towards supporting the underprivileged communities and its associated factors were measured and identified, respectively. Ways to enhance the said motivation, and the corresponding role of community-based education (CBE) were also determined.

Methods

Explanatory sequential type of mixed method design was adopted involving 155 third year medical students for Phase I and 12 acclaimed professionals who are also community volunteers for Phase II. Phase I adopted a descriptive cross-sectional design. A 7-minute introductory video clip and a pretested survey questionnaire, consisting of the participant’s profile and a Likert-scale type of motivation assessment tool, were utilised. Simple random sampling was performed and a sample size with 95% confidence level was computed. A 10% attrition rate was added to address potential withdrawal of participants from the study. Data gathered were subjected to statistical treatment and analysis by a statistician. Phase II utilised purposive sampling and the principle of data saturation. All interviews were manually transcribed and thematic analysis was performed to generate significant themes that further elaborate the trends and the gaps yielded from the surveys.

Results

Surveys yield a 76.59% overall motivation score wherein 15 respondents have 100% motivation, and the lowest reported score is 12%. Significant differences in levels and/or trends were observed across various demographic groups -age, gender, civil status, hometown, and extent of community exposure. Slight differences were observed in terms of religion and inconclusive results were generated concerning nationality, length of stay in the hometown and average monthly family income. Upon connecting the statistical data to the generated themes, a proposed model was constructed focusing on five major factors contributing to the nurturing of motivation: character, personal satisfaction, community involvement, reflection and processing, and role modelling.

Conclusion

Overall, utilisation of explanatory sequential design comprehensively satisfied all research objectives. Not only statistical data were generated, but also in-depth explanations of the trends and gaps, leading to a broader perspective to address the given problem. Community-based education (CBE) was proven to be a key factor in raising social awareness among students and moulding them to be community-oriented professionals.

AN EVALUATION OF THE CHANGES IN REACTIONS, ATTITUDES AND PERCEPTIONS TOWARDS INTERPROFESSIONAL COLLABORATION AMONG NUS NURSING AND PHARMACY UNDERGRADUATES AFTER THEIR PARTICIPATION IN INTERPROFESSIONAL EDUCATION ACTIVITIES

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Background and Aims

The present study is part of an ongoing longitudinal study that aims to investigate the effectiveness of the interprofessional education (IPE) programme at National University of Singapore. Specifically, the present study examines the changes in nursing and pharmacy undergraduates' reactions, attitudes, and perceptions (RAPs) towards interprofessional collaboration (IPC) after participating in IPE activities. Five IPC domains are of interest to the present study: teamwork, communication, patient family and community focus, ethical practice, and roles and responsibilities. IPE activities in the present study are two interprofessional core curriculum activities (ICCs; Effective Communication, Respect for Persons) and four interprofessional enrichment activities (IEAs; Project Silvercare, Healthcare Outreach Project, Public Health Screening, Neighbourhood Health Screening). Teamwork, communication, and roles and responsibilities are the learning outcomes for the ICCs Effective Communication and Respect for Persons. An additional learning outcome for Respect for Persons is ethical practice. Learning outcomes of the IEAs deal with most, if not all, of the five IPC domains.

Methods

A validated 47-item assessment tool was administered to nursing and pharmacy undergraduates of the AY2016/2017 cohort at baseline (i.e., at the beginning of Year 1, before IPE exposure) and follow-up (i.e., towards the end of Year 3, after IPE exposure). Response rates at baseline and follow-up were 71.4% and 38.3%, respectively, among nursing students, and 73.8% and 41.5%, respectively, among pharmacy students. The tool has five subscales, each measuring students' RAPs towards one of the five IPC domains. The tool also includes questions about the IPE activities students have participated in.

Results

Among both nursing and pharmacy students, five multiple regression analyses (one for each subscale) controlling for students' subscale scores at baseline were conducted. For ICCs, only results related to the learning outcomes were interpreted. Results showed that pharmacy students who participated in Respect for Persons (versus no participation) had higher ethical practice scores at follow-up, $\beta = 0.22$ $t(41) = 2.10$, $p = .042$. As for the IEAs, nursing students who participated in Public Health Screening or Neighbourhood Health Screening (versus no participation) had higher communication scores at follow-up, $\beta = 0.37$, $t(36) = 2.43$, $p = .020$ and $\beta = 0.39$, $t(36) = 2.71$, $p = .010$ respectively. In addition, nursing students who participated in Public Health Screening (versus no participation) had higher patient family and community focus scores at follow-up, $\beta = 0.40$, $t(34) = 2.47$, $p = .019$. Among pharmacy students, those who did not participate in Public Health Screening (versus participation) had higher ethical practice scores at follow-up, $\beta = -0.24$, $t(41) = -2.31$, $p = .026$. Further investigation (e.g., focus group discussion) is needed to better understand this result. Other effects of ICC/IEA participation on students' subscale scores at follow-up were not significant, $ps \geq .06$.

Conclusion

Changes in students' RAPs may differ after participating in different activities. Even when students participate in the same activity, there might still be difference in changes in RAPs among students from different disciplines. Therefore, when evaluating IPE programme, activities should be examined separately, and students' disciplines should be taken into consideration.

OTOLARYNGOLOGY CATASTROPHIC EVENTS SIMULATION TRAINING

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Background and Aims

Life-threatening scenarios is a reality in Otolaryngology (ENT) practice. These potentially catastrophic clinical events have high rates of morbidity and mortality.

Patient safety can be compromised should managing doctors be inexperienced and unsure of the management of these emergency life-threatening conditions that are often time sensitive, allowing little room for error. These events, however, are uncommon in presentation, limiting junior doctors' experience with them via daily work.

Our team at National University Hospital, Otolaryngology- Head and Neck Surgery Department designed and conducted Catastrophic Events Simulation training sessions for our junior team members. To our knowledge, this is a novel pilot training session using ENT specific simulation that has not been previously described in literature.

This is aimed at improving the junior doctors' and nurses' competency and confidence in managing such critical and emergent scenarios.

Methods

We designed our simulation session on three critical scenarios. Details of each simulation session will be further elaborated on in our presentation:

1. Post-thyroidectomy bleeding with impending airway collapse

2. Laryngeal tumour causing acute airway obstruction

3. Carotid blow-out secondary to post radiation therapy treatment for nasopharyngeal carcinoma

We worked with staff from the NUS simulation laboratory and produced simulation models that could replicate a physically expanding neck hematoma, active massive epistaxis and a Harvey© mannequin in acute airway distress for the above.

We recruited trainee doctors for the simulation training sessions. Confidence and competence scores were evaluated before and after training. Individual skill-based performance was also evaluated by senior doctors trained to be simulation moderators.

Results

Results were analysed via mixed method analysis as both quantitative scores and qualitative open-ended questions were included in the feedback form. Focus group discussions were also conducted at the end of each simulation session to allow participants and faculty feedback on each participant's performance, takeaways from the session as well as on the simulation training.

Quantitative confidence scores of all participants improved after the training session over all domains (Knowledge, Clinical ability, General overview). After the training session, all participants were assessed to have improved competence by a senior ENT surgeon.

Quantitative feedback reflected enthusiasm at the simulation and expression that the session consolidates and strengthens clinical knowledge. Significant residual concern participants had was the challenge of managing scenarios under time constraints, with multiple variations in real life scenarios.

Conclusion

Simulation training yields rewarding results in terms of improved knowledge and confidence in the trainees, and is a valuable part of training for junior doctors. It provides the opportunity to identify management gaps and hands on training. It also fosters inter-disciplinary camaraderie and builds trust between the managing team of doctors and allied health being trained together. This will improve response time in an emergency scenario, leading to improved patient safety outcomes. Areas of weaknesses include the relative small numbers of our participants each session. We aim to extend our simulation training to interdisciplinary members (Anaesthesia, Emergency Medicine junior doctors). We have also started involving ENT nurses in our latest simulation, to further expand training to our allied health.

A SCOPING REVIEW OF MENTOR TRAINING PROGRAMMES IN MEDICINE BETWEEN 1990 AND 2017

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Background and Aims

Mentoring the next generation of physicians is fundamental to improved medical care, patient outcomes and institutional reputation. However, the current lack of mentor training leaves mentors-in-training ill prepared for their roles compromising the effectiveness and quality of mentoring and raising concerns about mentoring abuse and failed mentoring relationships. This scoping paper gathers reports of current mentoring practices to inform design of more effective mentor training programmes lacking thus far in medical education.

Methods

Arksey and O'Malley's approach to scoping reviews was used to study existing mentoring programmes in undergraduate and postgraduate medical education published between 1st January 1990 to 31st December 2017 involving published and grey literature databases. Data from selected articles was coded and thematic analysis was carried out using Braun and Clarke's approach to circumnavigate mentoring's and mentor training's ever-changing qualities.

Results

3585 abstracts were retrieved, 232 full-text articles were reviewed and 68 articles were included. Thematic analysis identified four broad category of themes - structure, content, outcomes and evaluation of mentor training programme.

When designing the structure of the programme there are few key aspects to consider. These include duration and frequency of sessions (burst versus stretched), modes of delivery (didactic, small-group discussions, role play) and suitable matching of mentor and mentees.

The content of the programme depends on the general and specific needs of the mentors-in-training. Important ones to note include communication skills, promoting professional development, fostering independence and addressing diversity related issues. The content varies for clinical versus research setting.

When assessing the efficacy of these methods, few common tools are used. Examples include the Mentoring Competency Assessment for pre-post changes, Mentorship Knowledge Test for content knowledge, and Programme Assessment Tools for a holistic appraisal.

Conclusion

The 3 domains pivotal to effective design of a structured mentoring programme are:

1. Programme must be overseen and supported by the host organisation to ensure oversight and sustainability
2. Mentor-in-training's motivations, abilities and expectations must be aligned
3. An evidence based formal curriculum designed by experienced educators

Common causes of unsuccessful mentor training programmes including ineffective communications and a failure to set expectations may be overcome with use of a peer and near-peer mentored approach for mentors-in-training. Peer mentoring provides support, nurtures mentoring abilities and allows effective oversight of progress and competency assessments.

Take Home Messages

- The significance of a successful mentor training programme includes a boost of the mentor and mentees professional development, effective training of the future generation of physicians, and ultimately improved patient care.
- Design of an evidence-based longitudinal mentor training programme in both undergraduate and post-graduate settings must be context specific and culturally appropriate.

DOES ORDER OF POSTINGS AFFECT YEAR 3 ACADEMIC SCORES?

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Background and Aims

Medical students at Yong Loo Lin School of Medicine, National University of Singapore, rotate through five postings in their third year (in sequence): Surgery, Orthopaedics, Medicine, Paediatrics, Family Medicine. The posting they start with is randomly assigned based on the clinical group they are in. Many students comment that starting with certain postings is more advantageous. They prefer to end their year with a less time-consuming posting such as Orthopaedics or Family Medicine, rather than a "heavier" posting like Surgery, in order to have more time for revision. Paediatrics and Family medicine has less weightage in their exams compared to Medicine, which has the highest weightage and is also very content-heavy, hence students prefer to end the year with Medicine posting rather than the former.

We sought to analyse if the order of postings was a factor which influenced the overall academic scores at the end of year 3, as this might give some students an unfair advantage over others.

Methods

284 students of graduating class 2018 were divided into five groups for the analysis, based on their order of postings. Each group had 53-60 students. We compared the mean of each group's academic scores against the rest of their cohort to determine if the order of posting had a significant effect on their academic scores.

Results

The mean score of students who started with Paediatrics and ended with Medicine was significantly higher than the rest of their cohort (73.7 vs 72.6, mean difference = 1.1, p =0.02015). This could potentially be explained by Medicine having the heaviest content, and students might have a higher retention rate if they have their Medicine posting as the last posting just before their end-of-year examination. Students in this group also start their year with Paediatrics and Family Medicine, which have a lower weightage in their final exam.

The mean score of students who started with Orthopaedics and ended with Surgery was significantly lower than the rest of their cohort (72.0 vs 73.0, mean difference =1.1, p = 0.03952). This could potentially be explained by Surgery being a more time-consuming posting with more overnight duties, which could result in less revision time for the students.

Conclusion

Order of postings does indeed affect the academic scores of Year 3 students, and this could be explained by the weightage and content level of the disciplines relative to the student's final exam, as well as the time-consuming schedule of some postings resulting in less revision time. However, the mean difference in score is only 1 to 1.1, suggesting that the difference, although statistically significant, is small and should not affect the students' scores too drastically.

We will need to continue to observe the trends over subsequent cohorts of students, to see if a similar pattern of grades repeats itself.

Friday 10 January 2020, 11.45am

Aquarius 3, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 2 – YOUNG SCHOLAR 2

Twelve Tips for Student Representatives in an Undergraduate Curriculum Committee
Kasidis Phongkhun, Thailand

Impact of 'Called-To-See-Patient' Objective Structured Practical Exam (OSPE) in Incoming Post-Graduate Year 1 (PGY-1) Doctors in a Teaching Hospital in Singapore
Emmett Tsz Yeung Wong, Singapore

The Effects of Practising Empathy on the Personhood of Medical Students – A Scoping Review
Yihan Khoo, Singapore

Medical Students' Perception of a New, Low-Cost and Low-Fidelity Simulation – Clinical Application of Medical Sciences (CAMS) Introduced into the Curriculum
Joey Kiat Ying Tay, Singapore

A Systematic Scoping Review and Thematic Analysis of Interprofessional Mentoring in Medicine From 2000 To 2018
Kuang Teck Tay, Singapore

Development of a New Scale for Assessing Professionalism Among Medical Students – Professionalism Assessment Tool (PAT-MS)
Jin Yang Ho, Singapore

The Creation of a Self-Sustaining and Expanding Medical Student Question Bank
Andrew Kroger, Australia

Existing Pedagogies of Multidisciplinary Communication Education for Paediatrics Residents: A Scoping Systematic Review
Haziratul Zakirah Binte Ghazali, Singapore

How Many Doctors Should a Country Need? A Study of Doctors Globally
Jiayi Weng, Singapore

TWELVE TIPS FOR STUDENT REPRESENTATIVES IN AN UNDERGRADUATE CURRICULUM COMMITTEE

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Background and Aims

To achieve the World Federation for Medical Education (WFME) global standards for quality improvement: basic medical education, formal inclusion of student representatives in an undergraduate curriculum committee is unavoidable. However, to our current knowledge, there is no literature specifically guiding students acting in this position. Hence, our work aims to provide 12 tips for student representatives in an undergraduate curriculum committee.

Methods

Students and recent graduates who had participated in undergraduate curriculum meetings at Faculty of Medicine, Chulalongkorn University were invited to answer an open-ended questionnaire comprising nine questions. Responses from the questionnaire were analysed and summarised into 12 tips.

Results

The tips include (1) form a solid student engagement team as a foundation; (2) develop efficient data collection workflow to provide evidence-based feedback; (3) turn students' complaints into practical suggestions; (4) combine strengths of qualitative and quantitative data; (5) prioritise issues with the aid of experienced senior student fellows; (6) present not only the negative results but also the positive ones; (7) make a visually pleasant and easy-to-understand presentation material; (8) prepare the presenter very, very well; (9) declare whether it is the class opinion or yours; (10) learn how to read the room; (11) balance the practicality, acceptability, cost and impact of possible solutions; and (12) be empathic, keep in mind of the teacher-student relationship.

Conclusion

Having student representatives as undergraduate curriculum committee members is a great opportunity for promoting learning outcomes and optimising student experience. The utilisation of these twelve tips could enhance the capability of the student representatives as key contributors in the committee who could then become future medical educationists.

IMPACT OF 'CALLED-TO-SEE-PATIENT' OBJECTIVE STRUCTURED PRACTICAL EXAM (OSPE) IN INCOMING POST-GRADUATE YEAR 1 (PGY-1) DOCTORS IN A TEACHING HOSPITAL IN SINGAPORE

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Background and Aims

Assessment influences what students learn and the ways they learn. Objective Structured Clinical and Practical Examinations (OSCEs/OSPEs) have been used to assess how learners integrate and apply knowledge when faced with a clinical problem, and have been shown to have good reliability, validity and educational impact. Over the last eight years, an OSPE has been organised for incoming post-graduate year-1 doctors (PGY-1s) to prepare them for common clinical conditions encountered on-call. However, its impact on promoting learning before, during and after the OSPE has not been studied. This study aims to examine the educational impact, strengths and limitations of a formative OSPE on the readiness of PGY-1s to manage common conditions on-call.

Methods

The study setting was the medicine department of a single tertiary university hospital. Incoming PGY-1s who participated in the 'called-to-see-patient' OSPE for the coming academic year were invited to participate in semi-structured interviews to discover learning activities that arose from the OSPE. Questions explored preparations prior to the OSPE, related learning activities occurring after the OSPE, and perspectives of the useful and non-useful aspects of the OSPE and how it may be improved. Data in interview transcripts were coded independently by three investigators, and thematic analysis performed.

Results

Eight PGY-1s consented and participated in the interviews. While participants understood the intent of the OSPE to be formative as a learning experience to prepare them for being on-call, and to identify gaps in their knowledge, several of them still experienced a degree of stress prior to the OSPE. Most participants reviewed a PGY-1 guidebook as preparation prior to the OSPE. During the OSPE, learning occurred when they were in either participant or observer roles, although learning value was perceived to be higher when they were the active participant in the stations. Immediate verbal feedback given at the end of each station was highly valued in identifying their weaknesses, but written feedback was also perceived to be important and useful for review after the OSPE. After the OSPE, most participants reviewed the PGY-1 guidebook again. In particular, the mark sheet provided during the OSPE was viewed as a useful learning tool which participants could review up to a few weeks after the OSPE, even though it may contribute to some pressure during the OSPE. While participants were cognisant that OSPEs are unable to perfectly mimic conditions on-call, their expectations of an ideal OSPE included a variety of clinical scenarios which are common, relevant and realistic, as well as adequate time for immediate feedback and discussion. The use of simulation and technology was perceived to be useful in improving the learning value of the OSPE. Participants felt better prepared for being on-call after the OSPE.

Conclusion

A formative OSPE has educational and catalytic impact in promoting learning activities before, during and after the OSPE among PGY-1s. Despite limitations, PGY-1s perceive it to be useful in preparing them for being on-call through the learning activities that arise.

THE EFFECTS OF PRACTISING EMPATHY ON THE PERSONHOOD OF MEDICAL STUDENTS – A SCOPING REVIEW

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Background and Aims

With a paradigm shift towards personalised medicine and coordinated care requiring the expertise of multidisciplinary teams, empathy has become an increasingly pivotal and cornerstone trait in the delivery of holistic and patient-centred medical care. Yet the practice of empathy by our future clinicians goes often unnoticed, let alone its effects appreciated. Moreover, some professionals hesitate to practice empathy for fear of negative impacts on their own psyche such as vicarious traumatization or burnout.

This scoping review seeks to identify the salient effects empathy has on the various aspects of a medical student's personhood.

Methods

A literature search on medical students and empathy was carried out on PubMed, CINAHL, Cochrane, PsycINFO, ERIC, Embase and Google Scholar. 6691 abstracts were retrieved, 136 full-text articles

were analysed and 41 articles were included.

Results

Thematic analysis of the included articles revealed 16 themes spanning across three of the four pillars of personhood: the individual, relational and societal aspects.

The positive and negative effects that practising empathy has on the medical student, whilst anchored in the core tenets of personhood as framed by the Ring theory of personhood (RToP), are complex and dynamic. Practising empathy and/or withholding empathy had a significant impact on professional identity formation and defines the future clinicians' values, attitudes and behaviour. Using the RToP to frame and conceptualise empathy, training approaches take into account the well-being of students, acknowledge their individuality and their capacity to establish, connect and to relate with patients and to adopt humanistic attitudes whilst working in a progressively complex healthcare landscape within interdisciplinary healthcare teams.

Conclusion

Empathy is a common denominator that better prepares the future physician to deliver clinically-robust, ethically-sound and culturally-sensitive care in an ecosystem that is increasingly technologically-driven. These findings serve to guide faculty in tailoring goal-directed exposure and interventions to nurture future-ready doctors.

Take-Home Messages:

Empathy is a cardinal clinical skill for future clinicians that not only affirms in their shared humanity with fellow patients and colleagues, but also influences multiple core facets of their personhood required for them to deliver care that is both other-centred and self-protective.

This perpetuates humanistic care that is compatible and congruent with an evolving techno-centric and multidisciplinary healthcare landscape.

Curricular interventions targeted at the various aspects of medical practice should consider empathy as a key objective to achieve.

MEDICAL STUDENTS' PERCEPTION OF A NEW, LOW-COST AND LOW-FIDELITY SIMULATION - CLINICAL APPLICATION OF MEDICAL SCIENCES (CAMS) INTRODUCED INTO THE CURRICULUM

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Background and Aims

Medical students from Yong Loo Lin School of Medicine, National University of Singapore have reflected that they are not adequately prepared for clinical postings. Often they find the teaching of basic medical sciences to lack clinical relevance. One of the solutions proposed is the introduction of CAMS to the first year curriculum in 2017. The effectiveness of varied levels of simulation in enhancing medical education has been debatable. CAMS is a low-cost and low-fidelity simulation which introduces students to basic physical examination using visual tools and standardised patients. This study aims to evaluate the students' learning perceptions of a low-cost and low-fidelity simulation - CAMS against high-cost and high-fidelity simulation like Harvey the Cardiopulmonary Patient Simulator.

Methods

In March 2019, 296 first year medical students received a 5-point scale (1, strongly disagree; 5, strongly agree) questionnaire designed to evaluate their opinions about CAMS's teaching effectiveness in the areas of:

I. Integration of human structure and function
II. Ability to see the relevance of basic medical sciences with clinical practice
III. Confidence in performing a general physical examination

They were also asked to share their perceptions about another high-cost and high-fidelity Harvey/SimMan simulation sessions on clinical relevance.

Results

The survey received a high response rate of 75.0%. Students perceive CAMS as an effective learning tool in establishing clinical correlations. 90.6% students agree that CAMS is effective in the integration of human structure and function. Furthermore, 75.9% students are able to see how basic medical sciences complement their clinical practice. Through CAMS, 92.0% students feel more confident to perform a general physical examination. As evaluated by students on clinical relevance, both CAMS and Harvey/SimMan received similar feedback scores of 93.2% and 96.4% respectively. Majority have reflected the need for more practical and inclusion of pathophysiological presentations.

Conclusion

In conclusion, the students perceive CAMS as an effective pedagogy in integrating medical sciences with clinical practice. It is suggested that students can perform their physical examination on simulators where they model the effects of different diseases. Further in-depth examination will be continued in the second year when they focus mainly on abnormal structure and function. In doing so, CAMS can be structured into a longitudinal programme spiralling students' learning. Despite its low-cost and low-fidelity nature, students can better understand and apply clinical anatomy. It is identified that CAMS is not an inferior teaching tool as compared to existing high-cost and high-fidelity simulators. Therefore, it is not always the case that the use of high-fidelity simulations equates to better perceived clinical relevance.

A SYSTEMATIC SCOPING REVIEW AND THEMATIC ANALYSIS OF INTERPROFESSIONAL MENTORING IN MEDICINE FROM 2000 TO 2018

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Background and Aims

Interprofessional mentoring in Palliative Medicine sees different multi-disciplinary team members nurturing and assessing the knowledge, skills and experience of trainees from different clinical backgrounds and providing them with holistic, longitudinal and personalised support. An evolving interprofessional clinical practice environment with competing resources and work demands on mentors and mentees, conflates understanding of effective mentoring approaches and structure. Inconsistent mentoring approaches and a paucity of clear mentoring guidelines potentiate misaligned expectations, mentor-mentee mismatch, and poor mentoring support, oversight and training. This threatens evaluation and support of interprofessional mentoring programmes and risks breaches in clinical standards. A systematic scoping review was conducted to enhance understanding and design of interprofessional mentoring programmes.

Methods

Using Arksey and O'Malley's (2005) approach to scoping review, 4 reviewers performed independent literature reviews of accounts of interprofessional mentoring, from 1 January 2000 to 31 December 2018, published in PubMed, Embase, PsycINFO, ERIC, Cochrane Database of Systematic Reviews, Google Scholar, Scopus, GreyLit, OpenGrey, Web of Science databases. Braun and Clarke's (2006) approach to thematic analysis was adopted to analyse findings across different clinical and mentoring populations and settings.

Results

10630 abstracts were identified, 91 full-text articles reviewed, and 14 full-text articles were thematically analysed to reveal 4 themes: characterising, nurturing, evaluating and obstacles to interprofessional mentoring.

Conclusion

Interprofessional mentoring is a dynamic, entwined evolving, adaptable, context-specific, goal-sensitive, mentee-, mentor-, host organisation-, mentoring approach-, mentoring relationship-dependent approach, focused upon building an enduring, mutually beneficial, and personalised relationship among experienced clinicians, junior clinicians and/or undergraduates and the host organisation (stakeholders). The mentoring relationship is directed towards advancing the goals and interests of the host organisation and developing the mentee and mentor holistically. To do so, an interprofessional mentoring approach employs a combination of a structured mentoring approach that allows effective, transparent and holistic assessments, coupled with a flexible approach built on a respectful, collaborative and integrative environment. This structured yet personalised and flexible approach provides holistic, accessible, longitudinal, personalised, appropriate, specific and timely support to accommodate to the changing needs of the mentee, the mentor and the mentoring relationship.

However, variations in the dynamic and evolving interprofessional healthcare setting and practice environment conflates understanding of the interprofessional mentoring dynamics - the quality of interactions between stakeholders, and the mentoring structure and processes that influences these interactions as the stakeholders nurture enduring and personalised mentoring relationships. Furthermore, the evolving and personalised nature of interprofessional mentoring makes assessment of these programmes difficult and demands significant support from host organisations.

With the novel insights gathered from this review, we forwarded an evidence-based interprofessional mentoring framework that outlines the roles of the host organisation throughout the mentoring process, as well as appropriate mentoring practices during the pre-mentoring, mentoring and post-mentoring stages. We hope that this framework will provide more clarity to guide the design, evaluation and oversight of interprofessional mentoring in Palliative Medicine.

DEVELOPMENT OF A NEW SCALE FOR ASSESSING PROFESSIONALISM AMONG MEDICAL STUDENTS - PROFESSIONALISM ASSESSMENT TOOL (PAT-MS)

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Background and Aims

Professionalism is a concept that is difficult to define. Many consider it to be a "set of values, behaviours and relationships that underpins the trust the public has in doctors". There are two facets to professionalism, one being the internal qualities one possesses, and the other being how one acts or behaves; these two components need not be related. The Singapore Medical Council has published an Ethical Code and Ethical Guidelines (ECEG) which provides guidance on how a doctor should behave professionally.

Patient care is of utmost priority in the medical profession and improving professionalism must start from medical school. Every medical student in training develops his or her professional attributes through a variety of ways after being exposed to different influences. Hafferty identifies the sources of these influences in the medical school as the formal, informal and hidden curriculum. It has been shown that unprofessional behaviours in medical school predict unprofessional behaviours in medical practice in future.

A literature review did not identify any comprehensive scale to measure professionalism in medical students. There was an abundance of tools for measuring professionalism in practising physicians but some of the experiences described were not applicable for medical students. Therefore, we describe the development of a new professionalism scale that is applicable to medical students which matches their ideals and actual behaviours.

Methods

This scale was created by modelling it after the ten tenets of professionalism as described in "A Physician Charter", a joint publication by the European Federation of Internal Medicine, American College of Physicians-American Society of Internal Medicine (ACP-ASIM) and the American Board of Internal Medicine (ABIM). Some questions were adapted from Campbell et al paper on "Professionalism in Medicine: Results of a National Survey of Physicians". This was then adjusted to the local context with reference to the "Professional Attributes" described by the NUS Yong Loo Lin School of Medicine (NUSMed) Student Handbook, and covered a spectrum of professional qualities. A practising physician and medical educationalist reviewed the scale to ensure face and content validity before a pilot study was conducted with a group of 10 medical students in clinical years. Participants tried the survey at their own time and were tasked to provide comments on the survey questions and format.

Results

A 25-item, self-administered scale titled "Professionalism Assessment Tool for Medical Students (PAT-MS)" was developed, measuring both attitudes towards professionalism and professional behaviours demonstrated by medical students. A 5-point Likert scale was used for each question. The pilot study participants did not find any statement that is irrelevant or difficult to understand.

Conclusion

Professionalism is difficult to measure without a suitable standardised tool. The 25-item PAT-MS is a new scale developed based on international and local standards to address this issue. A more extensive study will be conducted to determine the validity and reliability of this new professionalism scale and results will be available at a later date.

THE CREATION OF A SELF-SUSTAINING AND EXPANDING MEDICAL STUDENT QUESTION BANK

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Background and Aims

Practice examination question banks are becoming a very popular means to both learn and revise medical education content for students. Despite its perks, the lack of standardisation of medical examination in the Australasian region entails low ROI for companies which seek to develop large-scale question banks for student education, meaning that sources for these practice questions are scarce and of limited utility as a means for revision.

Due to high student demand and as a consequence of the aforementioned, it is either busy academic staff or busy student bodies which are forced to produce and maintain question banks centrally. Typically, either the quality or the extensibility of the practice questions given to students suffers.

Thus, we sought to decentralise the addition of questions to the question bank - motivating students to share their own written questions - and also 'crowdfund' question moderation and quality control processes through the development of an algorithm which could be appended to existing question banks with minimal effort.

Methods

We approached the creation of such an algorithm by first ideating the components of a practice question which had high academic utility. We agreed that such a question had strong ratings of 1: course pertinence, 2: uniqueness and 3: how it discriminated the cohort through statistical measures. Each of such variables were then weighted according to consensus of the research group with the intention to modify each weighting as the study progressed. The end result of a question's rating is the priority it has in appearing in a student's practice question queue - meaning that highly rated questions are seen first and lower rated questions are seen only after questions deemed 'high yield' are practised.

Results

As the students practice, new questions - sourced from outside the school's curriculum - are given to the user to rate - implying that with every pass through the question bank, it will expand. These questions can be of varying quality as it is the intention of the project that the algorithm sorts the good questions from the bad.

Trials of the question bank are still ongoing and, after receipt of the next two months' data, we expect that our model will have enough data to accurately form the optimal weightings for each variable which contributes to each question's final rating.

Conclusion

Study of our model is still underway. Over the next two months - in the lead up to exam season and over the standard learning period - we intend to tweak each variable's weighting experimentally such that questions considered by academic staff as "gold standards" receive similar scores from students by using the question bank with our question rating algorithm in action.

EXISTING PEDAGOGIES OF MULTIDISCIPLINARY COMMUNICATION EDUCATION FOR PAEDIATRICS RESIDENTS: A SCOPING SYSTEMATIC REVIEW

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Background and Aims

A functional and effective multidisciplinary team can improve the health outcomes and the satisfaction of patients, and communication is key to such successes. However, there is relatively limited research done in the current literature on communication training for Paediatrics residents. Thus, the aim of this scoping systematic review is to identify and evaluate current attempts at improving multidisciplinary communication in postgraduate paediatrics residents.

Methods

A comprehensive search was done on 8 databases, namely Embase, CINAHL, PsycINFO, Scopus, PubMed, ERIC, Google Scholar and JSTOR. The initial search strategy yielded 17,493 titles and abstracts published between 1 Jan 2000 and 31 Dec 2018 after the removal of duplicates, and 4 authors performed independent literature review using Arksey and O'Malley's approach to a scoping systematic review. Braun and Clarke's approach to thematic analysis was applied to circumnavigate the evolving, context-specific and complex nature in the field of Paediatrics that makes comparison and analysis across different settings difficult. The quality of the 9 full-text papers thematically analysed was graded using COREQ and MERSQI.

Results

17,493 abstracts were identified, 51 full-text articles were reviewed, and 9 full-text articles were thematically analysed. The 3 main methods of multidisciplinary communication training consisted of Structured Educational Programmes, Simulations and Clinical Practice Implementation. These methods provided the platform for interaction and learning between different disciplines, serving to improve multidisciplinary communication. In Structured Educational Programmes, didactic seminars, workshops and cased-based teaching were implemented to integrate collaborative learning. Its success could be attributed to the inclusion of multidisciplinary learning and discussion, and the clarification of the role of each discipline involved in the care of children. Simulations were also used to train residents' communication skills in situations akin to a real-life scenario. The use of debriefing following each simulation session helped to solidify the lessons learnt. Finally, Clinical Practice Implementation comprised the involvement of nurses in bedside rounding and the usage of a daily progress note and bedside whiteboard to improve clinical multidisciplinary communication in paediatric acute care. Collaborative rounding facilitated multidisciplinary case discussion, while the latter reduced barriers to communication through the usage of facilitators of communication.

Conclusion

This systematic scoping review outlines current implementations to improve multidisciplinary communication and the Kirkpatrick model was used to evaluate their outcomes. For Reaction (Level 1), participants expressed satisfactory opinion of the implementations. For Learning (Level 2), participants reported becoming more skilled and confident to work and communicate in a multidisciplinary environment. In terms of Behaviour (Level 3), increased role clarity translated into better communication and patient care, and a greater nurses' participation in beside rounds. Most significantly, Results (Level 4) was reflected by institutions reporting improvements in error-catching and reductions in barriers of communication. Without proper and effective multidisciplinary communication, the benefits of a successful multidisciplinary team cannot be fully tapped upon and could even result in the failure of the team in providing quality healthcare. Thus, facilitating factors and failures of current methods to improve communication may serve as references for future attempts to improve multidisciplinary communication, essentially providing the direction for future efforts.

HOW MANY DOCTORS SHOULD A COUNTRY NEED? A STUDY OF DOCTORS GLOBALLY

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Background and Aims

For medical educators, a fundamental question exists - how many doctors do we need to train? How many doctors should our country need? With the recent addition of two medical schools in the past decade, Singapore currently has three local medical schools with a total annual intake of around 500 students, which represents a doubling of number of graduating physicians. It is imperative to strike a balance between having too few versus too many physicians to meet Singapore's healthcare requirements. It is thus important to be able to forecast the number of physicians needed both presently and in the future. To our knowledge, there has been no definitive guidelines on the number of physicians that Singapore has been having. As such, this study aims to (a) generate a predictive formula for the number of physicians required in Singapore based on historical data and (b) compare our findings in the global context.

Methods

Twenty-nine countries comprising all G20 member countries and regional countries around Singapore were analysed from 1960 to 2016. Variables analysed include: Total labour force (World Bank/OECD/IMF), total population (respective national databases), annual nominal GDP (CEIC database), and physicians per 1000 population (World Bank). Linear interpolation was performed to obtain annual data where necessary. IBM SPSS v25.0 was used for analysis.

Results

All countries, except Italy and Russia, demonstrated significant correlation between the total number of physicians and the three other variables. In Singapore, the Pearson's correlation were all significant ($p<0.05$) and very strong between the number of physicians, versus (a) total population ($r = 0.986$), (b) labour force ($r = 0.979$) and (c) GDP ($r = 0.969$) respectively.

Multivariate backward linear regression showed that labour force and GDP were significant ($p<0.05$) independent variables for the number of physicians in Singapore. This is comparable to countries such as USA, Brazil and Malaysia. For Japan and the United Kingdom, total population, labour force and GDP were all significant independent variables of the number of physicians. China, Australia, India and Thailand have total population and GDP as significant independent variables for their physician numbers. Several countries had only one variable (total population or labour force) as the significant predictor.

Our formula for number of physicians in Singapore:

Number of physicians = 2.4*(Per 1000 population) + 0.0087 (Per USD$1million of GDP) - 349.

According to the White Paper 2013, where infrastructure plans are made for 6.9 million people in Singapore in 2030, our formula can provide an estimate of the number of doctors that will be required.

Conclusion

Our study demonstrates that total population, labour force and annual nominal GDP were closely related to the number of physicians in almost all countries. We have postulated a predictive formula for the number of physicians in Singapore, which can potentially be adapted for many other countries worldwide. Having an accurate forecast of the number of physicians needed in the future enables us to better plan and estimate the number of physicians we need to educate yearly.

Friday 10 January 2020, 11.45am

Aquarius 4, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 3 – TEACHING & LEARNING

Evaluation of Pharmacy Undergraduate Metacognition Using Reflection Writing in an Aging Simulation Workshop
Hui Ting Chng, Singapore

Visual Fixation and Diagnostic Performance of Undergraduate Dental Students Reading and Interpreting Intra-Oral X-Rays With and Without Formative Feedback
Sarah Koh Mun Yee, Singapore

A Critical Review of Dual Process Theory in Teaching Clinical Diagnosis
Tow Keang Lim, Singapore

Exploring the Online Learning Interactions Among Medical Students During a Self-Initiated Enrichment Year
Pauline Luk, Hong Kong S.A.R.

Innovation and Best Practices: An Evidence-Based Call for Clinical Teachers to Integrate Medical Device Designing
Anbarasi K, India

Using 3-Phase Video-Assisted Debriefing to Enhance Nursing Students' Learning Experience and Facilitators' Debriefing Practice Following High-Fidelity Simulation: A Mixed Methods Study
Hui Zhang, Singapore

The Enrichment Year at the University of Hong Kong – An Evaluation of Student Learning Experience
Gilberto Leung, Hong Kong S.A.R.

Use Real Case-Based Learning (RCBL) in Teaching Capillary Blood Glucose Measurement for Undergraduate Medical Students
Xia Lian, Singapore

EVALUATION OF PHARMACY UNDERGRADUATE METACOGNITION USING REFLECTION WRITING IN AN AGING SIMULATION WORKSHOP

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Background and Aims

Metacognition, or "thinking about thinking", has been recognised by the Accreditation Council of Pharmacy Education (ACPE) as an important skill for pharmacists to have. Metacognitive skills like critical thinking and self-monitoring may potentially prevent medication errors in the clinical setting. Metacognitive skills can be fostered through methods such as "thinking out loud" or written reflections. In an aging simulation workshop conducted by the National University of Singapore's (NUS) Pharmacy programme to develop empathy for the elderly people, a 1 hour debrief session was conducted for participants to reflect on their learning during the simulation. Participants then submit a written reflection 1-week post-workshop. Active methods of debrief and written reflections were introduced as means of fostering metacognition. To our knowledge, there is limited discussion in the literature on the choice of debrief methods used and how it may impact reflections. Therefore, this study aimed to investigate the depth of reflection among three debrief groups (didactic lecture, jigsaw discussion and fishbowl discussion).

Methods

Second year NUS pharmacy undergraduates (n = 167) were randomly divided into three debrief arms: didactic lecture, jigsaw discussion, or fishbowl discussion. Students completed the Metacognitive Awareness Inventory (MAI) as a baseline measure. Reflective depth was assessed using a modified version of Kember's category scheme for assessing pharmacy interns' level of reflection. 115 students consented to participate in the study but only 110 provided valid baseline data with a reflective piece.

Results

Although students were randomly assigned to the 3 arms, two of the eight domains (declarative knowledge and evaluation) of the baseline MAI showed statistically significant higher scores for the didactic lecture group when compared to the jigsaw discussion group ($p < 0.05$). There was no statistical significant difference in depth of reflection among the three arms of debrief, albeit a higher mean score observed in the jigsaw and fishbowl discussion groups.

Conclusion

There was no statistically significant difference in depth of reflections among the different methods of debrief used. However, it is notable that the active discussion, despite being less structured, achieved similar outcomes as the didactic approach.

VISUAL FIXATION AND DIAGNOSTIC PERFORMANCE OF UNDERGRADUATE DENTAL STUDENTS READING AND INTERPRETING INTRA-ORAL X-RAYS WITH AND WITHOUT FORMATIVE FEEDBACK

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Background and Aims

To identify the visual focus and attention of undergraduate clinical dental students when reading and interpreting X-rays, and to investigate the effect of formative feedback on the efficiency and diagnostic performance of X-ray interpretation.

Methods

The eye gaze and visual fixations of sixty-five dental students were recorded with the Tobii X2-60 eye tracker (Tobii AB, Sweden) when they were tasked to interpret three consecutive sets of seven intra-oral X-rays. Each set of seven X-rays comprises two X-rays without pathology and five X-rays with periodontal disease, caries, and periapical lesion(s). Each set of X-rays was interpreted at least one week apart. In between sets, the control group of senior Year 4 dental students (n=29) were given only the answers after each X-ray reading exercise, while the experimental group of junior Year 3 dental students (n=36) received formative feedback drawn from eye-tracking in addition to the answers after each exercise.

Search efficiency was determined by (i) Time to First Fixation (TFF) which is the time a participant takes to fixate on an Area of Interest (AOI), and (ii) Fixations Before (FB) which indicates the number of times a participant fixates on the X-ray prior to fixating on the AOI. The Time from First Fixation to Mouse Click (TFFMC) indicates the time taken from fixating upon the AOI to making a decision on the X-ray. Time to True Negative (TTN) indicates the time participants take to call a normal X-ray as normal. It signifies the efficiency in achieving true negative. Two-way mixed ANOVA was used to assess the effects of formative feedback on eye-tracking metrics and diagnostic performance, and whether there are correlations between the latter two.

Results

For TFF, FB, and TTN, the control group showed significant reduction ($p<0.05$) while the experimental group saw minimal changes. This suggests that senior dental students became more efficient (i.e. required less time) in their search and decision making. For TFFMC, only the experimental group saw a significant increase ($p=0.002$) in time taken from fixating upon the AOI to making a decision (i.e. clicking on target).

Eye-tracking metrics were correlated with performance (accuracy and specificity). Moderate inverse correlations for the control group were reported between accuracy and TFF ($r=-.567$, $p<0.01$), and between accuracy and FB ($r=-.456$, $p<0.01$). A moderate inverse correlation between accuracy and TFF was also observed for the experimental group ($r=-.207$, $p<0.05$). For TTN, a stronger inverse correlation with specificity was observed for the control group ($r=-.579$, $p<0.01$) than the experimental group ($r=-.243$, $p<0.05$). These results signify that an increase in efficiency (reduction in TFF, FB and TTN) is associated with better diagnostic performance of X-ray interpretation.

Conclusion

Within the limitations of the study, formative feedback did not improve the efficiency of searching and decision making in X-ray interpretation of junior dental students. In contrast, senior dental students who did not receive formative feedback improved on their efficiency in searching and decision making. The changes observed for each group were consistent with their diagnostic performance.

A CRITICAL REVIEW OF DUAL PROCESS THEORY IN TEACHING CLINICAL DIAGNOSIS

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Background and Aims

Dual process theory (DPT) is the most widely held framework which seems to offer both an explanation of and an effective intervention against diagnostic errors in medicine. There are 2 parts in DPT: (i) as a qualia or conscious subjective phenomenon which is obvious to everyone and thus, incontestable and, (ii) a testable hypothesis that slow analytical reasoning can be activated and deployed to “de-bias” and fix errors caused by rapid intuitive thinking. The assumption of part (ii) of DPT is promoted by most experts in this field. It is thus, also the basis for the design of many new clinical reasoning teaching programmes in medical education. The aim of this study is to critically examine the theoretical and evidential basis for this approach.

Methods

This is a synthetic "critical-realistic" review using MEDLINE searches from 1990 - 2019 on "dual process theory" and "diagnostic reasoning" or "diagnostic errors" in medical students and residents with emphasis on controlled interventional studies of different "de-biasing" or "cognitive forcing" methods. The conceptual basis and historical origin of DPT in clinical reasoning is contrasted with alternative models of cognition which have emerged from recent advances in neuroscience research.

Results

A variety of different cognitive de-biasing interventions such as verbal instructions, de-bias training, time out, check lists and IT decision support tools have been subjected to prospective head-to-head studies in clinical diagnosis performed by medical students and residents. These have been conducted usually in simulated settings conducive to careful, mindful reflection. However, the results from most of these studies do not support the idea that cognitive "de-biasing" is either sustainable or effective in reducing diagnostic errors. Moreover, careful prospective evaluation with clinical vignettes have shown that the accurate detection of bias is confounded by hindsight bias itself. The predictive brain has emerged is a leading model of cognition which appears to be more ambitious, integrative and convergent than DPT.

Conclusion

There is growing evidence that cognitive "de-biasing" is an unreliable, non-sustainable and ineffective intervention for diagnostic error. Yet most experts continue to recommend that clinical reasoning programmes teach "de-biasing". This is a seductive idea which, given its wide popularity and implementation, may also be associated with sunk cost fallacy. Daniel Kahneman, the premier researcher of bias reasoning, said in Oct 18, 2017: "It's false to hope that if you become more aware of your errors you will make better decisions. There has been no breakthrough on efforts to reduce bias." Perhaps, instead of preventing bias, we should focus on promoting the right type of intuitive thinking or heuristics by teaching simple rules of thumb. This approach may be more consistent with the predictive brain model of cognition than DPT.

EXPLORING THE ONLINE LEARNING INTERACTIONS AMONG MEDICAL STUDENTS DURING A SELF-INITIATED ENRICHMENT YEAR

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Background and Aims

Increasingly, medical schools are recognising the potential of a holistic, experiential curriculum to nurture the professional development of their students. Beginning in 2018-19, the entire third year class of medical students at the LKS Faculty of Medicine embark on a mandatory, credit-bearing enrichment year of their own choosing. This novel initiative allows all students an opportunity for substantive engagement in a personal area of interest related to research, service or humanitarian work, pursuit of a higher degree, or university exchange anywhere in the world. An online virtual community of learning was developed to provide learning and social support to students and to help them link their diverse experiences with the common goal of being a doctor. This study aims to examine the nature, pattern and content of online interactions among medical students within the community of learning to identify features that support learning and personal growth.

Methods

This was a mixed method, quantitative-qualitative study involving the most active teams in the virtual community of learning housed on the proprietary platform "Workplace". Each team was comprised of 6-8 medical students and a faculty mentor. They worked on 3 compulsory discussion-based learning modules from September 2018-April 2019. Platform data analytics were used to determine the frequency, timing, duration, content of the interactions while social network analysis was used to establish the pattern of interactions. These quantitative data were triangulated with the written and oral feedback as well as comments compiled from focus group interviews with the faculty mentors and medical students.

Results

Five teams were identified as the most active. The nature of their interactions were predominantly text-based and centred on social support, professional knowledge exchange, and information dissemination. Image-based messages attracted more attention and stimulated more constructive discussion. The pattern of interactions was visually represented in a social network analysis. It showed that the active teams could have single-centred interaction or multi-centred interaction with each representing different team dynamics. This was associated with effectiveness of collaboration and completion of tasks. The qualitative feedback and interviews also indicated that proactivity by even one team member, participation by the team mentor, responsiveness and social/non-academic discussions fostered a positive team dynamic and a positive online learning experience, regardless of whether the team interaction was primarily single-centred or multi-centred.

Conclusion

Online interactions that are less structured, relate to personal interests and use multimedia appear to generate the most meaningful content and do not necessarily need to have a leader to be effective. A structured online network that adopts these features can better support learners who are geographically separated and engaged in different learning experiences.

INNOVATION AND BEST PRACTICES: AN EVIDENCE-BASED CALL FOR CLINICAL TEACHERS TO INTEGRATE MEDICAL DEVICE DESIGNING

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Background and Aims

The physician awareness about the patient's problem and disease process is beneficial to invent new medical devices. Deep level engagement of clinical teachers in graduate training programmes may lead to invention and solve many practical difficulties in the health care setups. We aimed to introduce interdisciplinary device designing a programme in our postgraduate course and to analyse its effectiveness in clinical application.

Methods

In our postgraduate clinical teaching, we often encountered difficulties in training the graduate students to deliver proper care for patients with extensive Maxillofacial defects following major surgical procedures, oral sub mucous fibrosis patients with difficulty in mouth opening, speech difficulties in patients with velvo-pharyngeal insufficiency following soft palate resection, and adverse effects of radiotherapy in the oral and para oral structures. There is no single best rehabilitative therapy for these conditions and in many times the options are less effective. In undergraduate clinical training, a tedious process for an entry level student is to select the impression tray size (4 different size trays are available) for denture fabrication. To overcome the above problems, we designed our own products by creative thinking and as an interdisciplinary approach with biomedical instrumentation engineering faculty team.

We designed interdisciplinary device designing programme (IDDP) for our Maxillofacial Prosthodontics course students to develop medical devices that address the needs of patients. The programme comprised five distinct phases including need identification, product definition and discovery, addressing regulatory compliances, verification and validation process, and risk management procedures.

Results

The devices invented by our IDDP include:

1. Split hollow bulb obturator for maxillary defect rehabilitation (implemented in clinical practice)
2. Temporary speech bulb prosthesis (implemented in clinical practice)
3. Intraoral radioproductive device for head and neck cancer patients receiving radiotherapy (patent filed)
4. Mouth opening assisting device to treat trismus in oral sub mucous fibrosis patients (patent filed)
5. Impression tray with size adjustable screws for maxillary and mandibular edentulous arches (patent filed)

Conclusion

Our experience in IDDP evidences the innovation happened at academic grounds solving the patient's needs. The interdisciplinary collaborative programme for graduate students closes the gap between treatment requirement, physician demands, and medical device designing.

USING 3-PHASE VIDEO-ASSISTED DEBRIEFING TO ENHANCE NURSING STUDENTS' LEARNING EXPERIENCE AND FACILITATORS' DEBRIEFING PRACTICE FOLLOWING HIGH-FIDELITY SIMULATION: A MIXED METHODS STUDY

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Background and Aims

As an integral part of simulation, debriefing creates new knowledge through rousing learners to think, reflect and discuss about cognitive, affective, and psychomotor aspects. Video-assisted debriefing (VAD) adds audio-visual capture and review to traditional verbal debriefing. Although VAD is often valued on its unique capability of reliving the scenario, minimising biases, and keeping everybody on the same page, evidence about its educational effects is mixed. It is criticised that video use might distract learners from the facilitator's comments, resulting in less effective learning. Despite wide acceptance and high adoption, best practice of VAD remains inconclusive and little attention has been drawn to its structure development. Hence, a model is needed to better guide the operation of VAD and to maximise learning with video use.

The study aimed to develop a 3-phase debriefing model for VAD, and to investigate its effect on enhancing prelicensure nursing students' learning experience of the debriefing process and facilitators' debriefing practice when compared to traditional verbal debriefing, as well as to explore facilitators' perceptions about VAD following high-fidelity simulation.

Methods

A mixed-methods design was adopted for this study. Nursing students (n=145) were randomised into intervention group (VAD) (n=72) and control group (VD) (n=73). They completed the questionnaires of demographic data, debriefing experience scale (DES), and debriefing assessment for simulation in healthcare (DASH) before and after a 2-week simulation programme. Additionally, they rated their stress levels at three time points (before simulation, before VAD and after VAD) during each simulation session using the Stress VAS.

Facilitators (n=8) self-evaluated own debriefing practice using DASH and completed open-ended questions survey after the simulation programme. Thematic analysis was conducted for the qualitative data.

Results

Significant differences were found between the intervention and control groups after the 2-week simulation programme. Students from the intervention group significantly improved their debriefing experience ($p<0.001$) and impression about facilitators' debriefing practice ($p<0.001$) compared to baseline data. Only time had significant effect on students' perceived stress with a large effect size ($p<0.001$, $\mu 2=0.60$). Allocation had no significant effect on the perceived stress. Students who received repeated VAD sessions significantly reduced their stress levels at three time points: before simulation ($p<0.001$), before VAD ($p<0.007$) and after VAD ($p=0.001$).

VAD facilitators (n=4) rated themselves more effective in 5 out of 6 elements (maintaining engaging context, structuring debriefing, provoking discussions, identifying gap, and achieving learning objectives), but less effective in setting the stage for engaging learners. In contrast, students viewed VAD facilitators as more effective in 3 elements (setting the stage, provoking discussions and identifying gap) and comparable in the other 3 elements (maintaining engaging context, structuring debriefing and achieving learning objectives) when comparing with VD facilitators. Two themes were derived from the qualitative data: 1) praise and criticism of VAD; 2) debrief for success.

Conclusion

The developed 3-phase VAD model demonstrated its effect on enhancing nursing students' debriefing experience and their impression about facilitators' debriefing practice. Future research is needed to further explore how experts approach their debriefing practices when using this 3-phase VAD model "on the ground".

THE ENRICHMENT YEAR AT THE UNIVERSITY OF HONG KONG - AN EVALUATION OF STUDENT LEARNING EXPERIENCE

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Background and Aims

The Enrichment Year (EY) is a newly introduced curricular component of our MBBS programme where Year III students will undertake two semesters of credit-bearing activities outside the standard medical curriculum according to their personal interests. It aims to broaden students' horizon and to enhance their learning experience. EY activities may be faculty- and/or student-initiated, conducted within and/or outside Hong Kong, and may include (i) intercalation; (ii) research attachment; (iii) service/humanitarian work, or a combination of the above. We report here an evaluation of the learning experiences of our first cohort of EY students (2018-19).

Methods

We conducted a Student Learning Experience Questionnaire (SLEQ) survey and compared students' pre- and post-EY learning experiences in the six areas of (i) critical inquiry; (ii) novel situations; (iii) reflection and ethics; (iv) global citizenship; (v) communication skills; (vi) leadership.

Results

Of the 211 students eligible for the EY, 205 and 174 completed the pre- and post-EY survey, respectively. Over 80% students would 'agree' or 'strongly agree' that the overall experience had 'enhanced my learning experience', 'enhanced knowledge and skills for my studies and future career' and 'inspired me to pursue further learning in my profession'. Fewer than 5% would either 'disagree' or 'strongly disagree' with these.

Comparing their pre- and post-EY experiences, students who participated in local-plus-overseas activities reported the greatest enhancement in (i) to (v) of the six surveyed areas; those who had overseas-only activities reported the highest score in area (vi). Those who pursued local-only activities experienced the least, albeit still positive, enhancement overall. Enhancement in 'global citizenship' was accorded the highest scores following EY.

In terms of the type of activities, those who pursued service/humanitarian work only reported the most positive experiences, followed by those who combined that with intercalation. 'Global citizenship', 'communication skills' and 'leadership' received the most positive evaluation. Students who pursued research attachment tended to report the least positive experiences, particularly in the area of 'reflection and ethics'.

Conclusion

The EY is a novel and first-of-its-kind curricular design in undergraduate medical education. Students' self-evaluations have been overwhelmingly positive although their experiences may vary depending on the location and type of activities pursued. Available information suggests that service/humanitarian work conducted both locally and overseas appear to confer the most positive learning experiences. This serves as a useful guidance for our future activities and may inform other institutions contemplating a similar curricular arrangement.

USE REAL CASE-BASED LEARNING (RCBL) IN TEACHING CAPILLARY BLOOD GLUCOSE MEASUREMENT FOR UNDERGRADUATE MEDICAL STUDENTS

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Background and Aims

Measuring capillary blood glucose (CBG) is one of the essential skills required for the undergraduate medical students. However, the critical thinking and clinical reasoning skills of the students were not fully drawn to analyse and relate the correlation between the HbA1C and CBG results reported in the outpatient clinical setting which may contribute by the user technique, storage and expiry of test strips, false charting of the CBG results and faulty device.

Traditionally, students were taught on CBG measuring technique by the Diabetes Nurse Educator (DNE) through didactic lecture, watching a video, skill demonstration, supervised hands-on practice and concluded with the skill competency assessment respectively. The study team aim to explore different teaching strategies with RCBL and Think-Pair Share to promote student's collaborative learning to enhance their clinical knowledge and skills for safe patient care.

Methods

A total of 144 students were participated and divided into 3 primary groups with each group comprises of 48 students. Each primary group is then further divided into 8 secondary groups with 6 students and 1 facilitator in each secondary group. The DNE delivered a didactic lecture followed by showing a video on CBG measuring technique to the students with Multiple Choice Questions (MCQs) generated right after to determine the transfer of learning of the students. Subsequently, the RCBL and Think-Pair Share teaching strategy were employed with students given a series of questions on HbA1C and CBG results to select the best answers individually first followed by sharing with the secondary and primary group members in sequential using alphabet flash cards to flash their answers. The DNE discussed each set of questions and answers immediately and concluded with a feedback along with the supervised hands-on practice and the skill competency assessment.

Results

The result showed a 10% higher for the average group score comparing with the individual score (75% vs 65%) in the RCBL and Think-Pair Share teaching strategy. There was an increase knowledge rating for good and excellent from 50% before to 95% after attending the session. All (100%) students rated good and excellent on learning effectiveness and the applicable of the skills and knowledge learnt from the session to their work.

Conclusion

The use of RCBL with Think-Pair Share teaching strategies are extremely useful in providing students with the means to attain the clinical knowledge required as well as building their critical thinking and clinical reasoning skills. Larger sample sizes need to be recruited to validate the data and measure the transfer of learning in the clinical setting.

Friday 10 January 2020, 11.45am

Gemini 1, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 4 – GENERAL EDUCATION 1

Changing Students' Professional Values: Countering Discrimination Associated with Mental Distress and Promoting Recovery and Respect for Human Rights
Pete Ellis, New Zealand

'Battlefield', 'Bottom of the Social Safety Net', 'Gatekeepers', 'Bridge of Communication', 'Sports': What Narratives do Emergency Physicians Use to Make Sense of Their Profession
Yu-Che Chang, Taiwan

Accreditation of Medical Education in China
Ana Xie, China

Psychiatry Teaching Amongst Medical Undergraduates: Stories that Matter and Mediators of Better Learning Outcome
Kang Sim, Singapore

We should Teach Bayesian Thinking as Heuristics
Chia Meng Teoh, Singapore

Preparation for Medical School Through Clinical Shadowing Experiences: Expectations of Admissions Committee Members
Carol Elam, United States of America

Evaluation of the Effectiveness of Tips Educational Programme in Medical and Nursing Students
Chaoyen Huang, Taiwan

High Fidelity Simulation for Teaching Therapeutics: Use of Performance Assessment Scale and Video Play Back in Debriefing
Thilanka Seneviratne, Sri Lanka

CHANGING STUDENTS' PROFESSIONAL VALUES: COUNTERING DISCRIMINATION ASSOCIATED WITH MENTAL DISTRESS AND PROMOTING RECOVERY AND RESPECT FOR HUMAN RIGHTS

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Background and Aims

People with severe mental illness die some 20 years earlier than otherwise expected, largely due to physical causes. Medical students' stigma against people with mental illness increases during medical school. This leads to diagnostic overshadowing after graduation - the tendency to misattribute key symptoms to psychiatric, rather than physical, causes. This results in under-recognition and under-treatment of these physical conditions and premature death.

An intervention to stimulate students to review and change their attitudes was developed and evaluated.

Methods

Medical students complete rating scales of stigmatising attitudes and recovery orientation, and of their level of understanding/knowledge/confidence on related issues, on the initial day of their first clinical attachment in psychiatry in their fifth year, and again at commencement of their final (sixth) year placement. These are repeated at the end of the placement after completing the in-course assessment. The intervention consists of a full day workshop led by service users, a full day placement with a service user led and recovery focused organisation, a tutorial and a personal reflection. The focus for the fifth-year group is promoting recovery and wellbeing, and the impact of stereotypes, prejudice and discrimination on recovery. The sixth year group focus on respecting and protecting people's human rights and the impact of the denial of human rights on recovery and wellbeing. (Recovery-focused service delivery is an internationally endorsed and mandated approach to empowering mental health service users to take charge of their own lives, including use of mental health services.) Data will be analysed using standard quantitative and qualitative approaches.

Follow-up measures will be completed by the same students in subsequent years, including the first postgraduate year.

Results

Data collection will be completed later in 2019. Interim analysis shows a statistically significant decrease in stigma scores and knowledge of recovery; and shifts in understanding of what services and individuals can do to promote recovery and wellbeing from a median of 'low/medium' understanding to 'medium/high'; understanding of the impact of stereotypes, prejudice and discrimination from a median of 'low' to 'medium' understanding; and confidence in working with people who have experience of mental distress from a median of low to medium confidence. Fifth year students' interest in a career in psychiatry increased during the attachment.

Conclusion

It is possible to significantly shift well-established attitudes that contribute to serious harm to those using services through relatively brief interventions provided these are integrated with positive authentic clinical experiences, at least in the short-term. The long-term impact will be explored later in this study. Early indicators suggest this intervention makes a significant contribution to reducing existing exclusion of mental health services users from equitable access to, and benefit from, all aspects of health care. This transformative learning model may be relevant to achieving attitudinal change in other areas of medical practice involving stigma and discrimination.

'BATTLEFIELD', 'BOTTOM OF THE SOCIAL SAFETY NET', 'GATEKEEPERS', 'BRIDGE OF COMMUNICATION', 'SPORTS': WHAT NARRATIVES DO EMERGENCY PHYSICIANS USE TO MAKE SENSE OF THEIR PROFESSION

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Background and Aims

Metaphors are invaluable tools employed to make sense of the world. This is especially important in understanding the complex social dynamics of communities of practice in specialties requiring multidisciplinary medical skills. This study examined the use of metaphors within emergency physicians (EPs) narratives around aspects of their profession.

Methods

Using convenience sampling method, we invited 25 Taiwanese EPs to participate in one-to-one interviews. The interviews were transcribed and the transcripts were analysed using ATLAS.ti. Drawing on social constructionism theory and the Metaphor Identification Procedure (MIP) we identified several conceptual metaphors and metaphorical linguistic expressions underpinning EPs' talk about their profession.

Results

Preliminary results indicated EPs' use of 'ED is a battlefield' to explain the medical environment with a specific focus on ED environment and the people involved in the day to day running of the ED. 'White paper', 'journey' metaphors within their narratives of professional development. 'Bottom of the social safety-net', saving people from the 'jaws of death' were used to describe the role played by the ED in the society and the social aspect of EPs' role in the health care system. 'Front-line', 'façade', 'gateway', 'gatekeeper', 'bridge' described the role of ED in the hospital and in the health care system in connecting them to the society.

Conclusion

The notion that EPs are generalists presented EPs with a unique challenge in understanding who they are, and their specific contribution to the healthcare system. The metaphors we identified demonstrate that EPs roles extend beyond their clinical skillset, echoing their 'social mission', emphasising their role as the hospital's 'face'. Metaphors allow us to relate with EPs' narratives of their specialty. These results demonstrate that metaphor analysis is a conceptual tool to be deployed to construe how physicians from multidisciplinary specialties like family and internal medicine conceptualise their profession.

ACCREDITATION OF MEDICAL EDUCATION IN CHINA

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Working Committee for the Accreditation of Medical Education of Ministry of Education, China

Background and Aims

As a very large country of medical education, China faces the challenge that the quality of medical education programmes varies significantly. At the beginning of the 21th century, the concept of accreditation and standards for medical education were introduced into China. Based on international standards and guidelines as well as domestic conditions, MOE and MOH of China issued the Standards for Basic Medical Education and Guidelines for the Accreditation of Basic Medical Education in 2008 and established the Working Committee for the Accreditation of Medical Education (WCAME) as the national accreditation agency. International agencies including WFME, WPAME, AMC and FAIMER helped a lot in this process.

Methods

1) Committed to enhancing the quality of medical education in China, WCAME formulates and periodically revises the standards as well as the guidelines, and establishes a pool of over 240 assessors at home and abroad. Meanwhile, the process of "application, self-evaluation, site visit, preliminary feedback, final report, and continuous renewal" is built. Preliminary Site Visit and Review Visit are also included into the process when necessary.
2) Combined with practice, WCAME also implements relevant research, spreading new concepts and promoting reform in medical education in China. WCAME revised the standards and the guidelines adapted to the Chinese context, localised the conclusion and process.

Results

WCAME explored a localised approach widely accepted by Chinese medical schools. By the end of 2018, 90(56%) medical schools in China have been accredited. The first round of accreditation for all medical schools is expected to finish by 2020. Feedback from accredited schools shows the benefits of accreditation in many aspects, such as enrolment scale, faculty development, curriculum reform, assessment, environment and resources and so on.

Conclusion

1) Deeper understanding of the concept of accreditation to avoid competition and ranking among medical schools.
2) Deeper understanding of Standards and tacking of latest idea and trends of medical education by both assessors and medical schools.
3) Quality assurance emphasis the need for improvement and provides guidance for achieving it.
4) Strengthening the validity of accreditation.

PSYCHIATRY TEACHING AMONGST MEDICAL UNDERGRADUATES: STORIES THAT MATTER AND MEDIATORS OF BETTER LEARNING OUTCOME

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Background and Aims

The clinical manifestations of psychotic spectrum disorders can seem abstract to learners new to psychiatry and before their clinical rotation. However, narratives give voice to the patient's unique lived experience. Based on self-determination theory and Rolfe's model for reflexive learning, we hypothesised that use of narratives is associated with better understanding of the topic which are mediated by intermediate processes (such as engagement, motivation, reflection).

Methods

Narratives in the form of stories of prominent individuals with psychotic disorders were incorporated in undergraduate teaching. Overall, 1014 out of 1500 (67.6%) medical undergraduates over 2014-2018 provided feedback through an anonymised questionnaire (including qualitative comments) after the teaching session. We assessed the relationships between the use of narratives, intermediate processes, overall understanding of session using correlation, regression and structural equation modelling analyses.

Results

The majority of learners (97.2%) found that use of narratives helped in better appreciation of the topic. Use of narratives correlated significantly (all $p<.001$) with better engagement, better motivation, feeling better equipped, greater reflection about the learning topic, and overall effectiveness of teaching session. The use of narratives significantly predicted these intermediate processes (all $p<0.001$), which in turn fully mediated the direct relationship between use of narratives and overall understanding of session.

Conclusion

Consistent with adult learning theories, the use of narratives in teaching improves appreciation of psychotic disorders via better engagement, motivation, reflection within learners. Appropriate narratives can be incorporated into other relevant topics to enhance teaching and learning within undergraduate psychiatry education.

WE SHOULD TEACH BAYESIAN THINKING AS HEURISTICS

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Background and Aims

According to dual process theory (DPT) we either think analytically-logically and slowly, or intuitively-heuristically and fast. In this schema classical full-scale quantitative Bayesian reasoning is the slow type. But in real world problem solving, humans do not routinely perform formal, statistical computations fully to achieve optimal solutions. Rather as a default, we think fast, heuristically and pragmatically to aim at approaching context-task relevant goals effectively and efficiently but often sub-optimally. Moreover, advanced models of neuro-cognition describe this adaptive strategy itself as a qualitative version of Bayesian approximation, inferring from sparse clues, but based on strong priors appropriate for the local context not perfectly but just good enough. Otherwise the practice of clinical medicine, and many other common sense things in life, will be impossible. Hierarchical Bayesian models also best describe metacognition or secondary level cognitive processing which is required to better cope with the pervasive radical uncertainties in decision making in the natural world. Thus, in this study, we designed, implemented and evaluated a clinical reasoning programme based on applying Bayesian principles heuristically at the bedside.

Methods

We describe the Bayesian-probabilistic threshold approach to clinical decision making by means of simple, intuitive rules of thumb instead of normative-prescriptive statistical calculations. We also linked Bayesian thinking heuristically to metacognition expressed as levels of confidence. Medical students in the first clerkship year and residents viewed a 5 minute video clip online and a 10-15 min slide presentation. They were encouraged to practice intuitive Bayesian thinking in their daily work. At the end of the academic year we evaluated their recall, understanding and application of simple Bayesian principles.

Results

Of the medical students who responded, 80/180 (44%) were able to recall and answer appropriately a basic question regarding application of Bayesian principles in diagnosis.19/22 (86%) of residents gave acceptable responses while half felt that it was useful in their daily clinical practice.

Conclusion

We have shown that it is possible to teach medical students and residents Bayesian thinking as simple rules of thumb. With a low intensity programme and very little practice, we achieved a modest degree of understanding and retention of Bayesian thinking in naive medical students and residents. A heuristic approach to probability theory in clinical decision-making may be easier to learn, remember and apply than formal Bayesian calculations as it is more intuitive and thus, imposes less cognitive load on working memory. This may be an innovative way to reconcile the two cognitive modes proposed by DPT and promote metacognition.

PREPARATION FOR MEDICAL SCHOOL THROUGH CLINICAL SHADOWING EXPERIENCES: EXPECTATIONS OF ADMISSIONS COMMITTEE MEMBERS

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Background and Aims

Many premedical students spend time shadowing physicians or volunteering in clinical settings in preparation for applying to medical school. Admissions officers argue that “adequate” exposure helps students determine if medicine is the right fit for their intellectual, service, and professional interests. However, students are commonly left to their own devices to determine what kind of exposure to medicine is preferred by admissions committees, and how much exposure is enough. The purpose of this research project was to assess admission committee member opinions’ about shadowing to determine how this experience contributes to understanding applicant preparation and readiness for medical school.

Methods

A 17-item survey instrument was administered to members of our medical school's admissions committee regarding their definitions of shadowing, goals and outcomes for the experience, and suggestions for beneficial shadowing placements. Committee members were invited to provide their opinions via an anonymous paper survey distributed at a committee meeting, with electronic copies provided to those who were absent or who requested them. Participation in this survey was strictly voluntary. Twenty-two of the 26 committee members completed the survey. The survey items were comprised of check boxes and narrative responses. Checked responses were tabulated; narrative comments were independently coded as to themes represented by two authors; with the third author adjudicating any discrepancies between reviewers. The coded responses were tabulated to give quantitative insight into committee member opinions. The project was approved by the Institutional Review Board.

Results

The most commonly specified purpose of shadowing was understanding daily responsibilities of physicians (10/22 responses). Observing physician/patient interactions was listed as a key goal of shadowing by 8 of 22 respondents. Approximately 65% of the respondents thought that shadowing was important for both gaining insight into what doctors do as well as providing the necessary reality testing to determine if medicine was a good personal career choice. All respondents sought to ascertain an applicant's knowledge of the profession at interview. A common question asked was "Tell me about a clinical experience or encounter. What did you learn?" Whether committee members reacted positively or negatively to applicant responses was influenced by the level of reflection or insight the applicant was able to articulate regarding the situation observed. Seventeen of 22 respondents (77%) thought shadowing should be required of all applicants accepted into our medical school. Seventy-seven percent of respondents did not think a particular number of shadowing hours should be required. Instead, they advocated for demonstration of the applicants' abilities to think critically about what they had seen and offer a meaningful interpretation of their experience. Settings thought to provide beneficial experiences included inpatient and outpatient settings, and in surgery, emergency medicine, and primary care specialties. Ninety-five percent of respondents thought students should seek shadowing experiences in multiple settings.

Conclusion

This project helps clarify the rationale for a premedical requirement of medical exposure through shadowing. By better communicating expectations, this project will help to define parameters related to shadowing for committee members, and guide medical school applicants in their preparation for medical school.

EVALUATION OF THE EFFECTIVENESS OF TIPS EDUCATIONAL PROGRAMME IN MEDICAL AND NURSING STUDENTS

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Background and Aims

Medical simulation is a type of experiential learning where virtual scenarios similar to real-life clinical situations are constructed. Through medical simulation, students have the opportunity to carry out medical tasks, utilise clinical skills and knowledge to solve problems, and eventually gain improvements with repeated practices and feedback.

To equip students with ACGME core competencies, a course titled TIPS was formulated. The TIPS course not only emphasises medical knowledge but also attitude and skills of managing resources in an interdisciplinary team.

A questionnaire was designed and distributed to medical and nursing students to evaluate whether there were changes in students' attitude toward "team resource management (TRM)," "simulation learning modality" and "inter-professional education (IPE)" before and after attending the TIPS course.

Methods

This study adopts a before and after study design. Expert validity was established and internal consistency of the questionnaire was assessed with Cronbach's alpha test. Data collected was analysed with paired t-test (using the statistical software SPSS) to find out if the course had any influence on medical and nursing students' attitudes on "team resource management (TRM)", "simulation learning modality" and "inter-professional education (IPE)."

Results

A total of 113 participants, including 54 medical and 59 nursing students completed the questionnaire both before and after attending the TIPS course. The questionnaire demonstrated adequate internal validation with the Cronbach's alpha coefficients above 0.7 on both the overall scale and 7 subscales. The average scores of students' attitudes towards TRM, IPE and simulation increased following their completion of the course, most notably in the relevance of debriefing (4.12 ± 0.53 to 4.51 ± 0.49), clinical problem-based simulation (3.75 ± 0.43 to 4.04 ± 0.46) and inter-professional education (4.24 ± 0.50 to 4.48 ± 0.52). Results of paired t-test showed statistical significant improvement in 6 TIPS sub-scale measures.

Conclusion

Team-based simulation offers opportunities for students from different disciplines to learn from each other, communicate and work together closely in an environment with high-fidelity simulation but low risks. With the experiences of solving problems and the following debriefing sessions, students can have a better understand of their strengths and weaknesses. Student feedback regarding this study can hopefully lead to future improvements and reforms in clinical practices. In addition, the TIPS course conducted in this study resulted in markedly positive changes in developing students' attitudes towards ACGME core competencies. Also, the introduction of team-based IPE simulated learning led to substantial improvements in medical and nursing students' attitudes of ACGME core competencies before graduation. These findings suggest that more team-based simulated IPE training courses should be encouraged.

HIGH FIDELITY SIMULATION FOR TEACHING THERAPEUTICS: USE OF PERFORMANCE ASSESSMENT SCALE AND VIDEO PLAY BACK IN DEBRIEFING

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Background and Aims

In teaching therapeutics, using high fidelity simulations (HFS), allows medical students to learn by trial and error without causing harm to actual patients. Post simulation discussion (debriefing) is an important learning experience in HFS. In debriefing it is important that students are given an accurate feedback on their performance and their deficiencies pointed out and good practices strengthened. In this study, we have utilised detailed performance assessment of students in a point based assessment and scored their performance in a rubrics scale (well done, done, not done) This allows more accurate feedback during debriefing. Video play back helps students re-experience the deficiencies and good practices, consolidating their learning experience.

Methods

200 third year medical undergraduates during their pharmacology teaching were involved in the study. They were divided into 19 groups. Each group consisted of 10-11 students. All the groups were given a scenario on status epilepticus using high fidelity simulations. Students were briefed about the scenario for 5 minutes, simulation run for 15 min followed by debriefing discussion for 15 minutes. Their group performance was assessed in 10 items.

Items consisted of assessing the patient (airway, breathing, circulation), choosing the correct drugs, route of administration, calculating the correct dose, timing the drug administration, identifying respiratory depression and managing the adverse events (respiratory depression).

Assessment was done in a rubrics scale (not done, done, well done). Each group was assessed buy the same assessor to avoid inter assessor variation. The scenario performance was video recorded and was played back with comments during the debriefing session.

Student perception about the teaching session was assessed using an anonymous questionnaire in 5 point Likert scale (1= strongly disagree and 5= strongly agree) their knowledge gain was assessed using a pre- test questionnaire on drug therapy of status epilepticus. The same questionnaire was repeated for the post-test to assess the knowledge gain.

Results

200 students participated in the study. Overall best performance (highest well done scores) were for Choosing the correct drug (84.2%), route of administration (89.4%), time of administration (94.7%). While dose calculations, identification of respiratory depression was done well by 52.6% and 15% of the groups.

In the assessment of student perception about the teaching session, Students responded that the use of video play back was useful for better learning and Debriefing helps in better learning (median 4). Students scored significantly higher marks in the post-test compared to the pre-test on the knowledge assessment. ($p<0.001$).

Conclusion

HFS performance assessment using item based performance scale, using rubrics, allows objective assessment and feedback during debriefing. Video play back allows re-experiencing deficiencies and strengths of performance and is well received by the students.

Friday 10 January 2020, 11.45am

Gemini 2, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 5 – GENERAL EDUCATION 2

Effectiveness of a Team Building Workshop to Improve Teamlet Functioning in Polyclinics
Wei Liang David Ng, Singapore

Standardised Patient Trainer Milestone Project on Taiwan
Sheng-Po Kao, Taiwan

A Novel Approach to the Delivery of Video-Based Education, Continuing Education and Assessment of Health Workers in the Remotest Locations
Christopher O'Callaghan, United Kingdom

Accreditation's Role in Supporting Student/Trainee Well-being and a Supportive Learning Environment
Theanne Walters, Australia

Teaching Professionalism to Medical Students – Challenges and Future Directions
Nghia Nguyen An, Vietnam

The Relationships Between Medical Students' Conceptions of Learning, Strategies to Learning, and Learning Outcomes in Learning Medical Humanities
Yen-Yuan Chen, Taiwan
Entrustable Professional Activities in Dental Education – The Development of a Conceptual Framework
Sivakumar Arunachalam, Malaysia

Using Art of Medicine and Human Life Span Courses to Teach Empathy Among Medical Students
Ma. Cristina Zulueta, Philippines

EFFECTIVENESS OF A TEAM BUILDING WORKSHOP TO IMPROVE TEAMLET FUNCTIONING IN POLYCLINICS

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Background and Aims

As National Healthcare Group Polyclinics (NHGP) adopts a team-based care delivery model, healthcare providers need to learn to work in teams in order to synergise and tap on each other's area of expertise. A 2-day team building workshop was created to train teams to better deliver care in teams. We sought to describe the components and to quantify the effectiveness of the team building workshop.

Methods

Doctors, care managers and care coordinators who were part of newly formed teamlets in their respective polyclinics in NHGP attended a 2-day workshop which aimed to impart knowledge and skills related to team-based care, such as self-awareness, conflict management, communication and leadership and followership. Participants completed the Team Development Measure (TDM) at the start of the course and at the end of the course.

Results

39 participants completed the TDM at the end of the course. The mean age was 37.6 years and had 5.9 years of working experience in NHGP. Mean baseline TDM score was 58.6 +/- 2.79, increasing to 63.2 +/- 2.40 at the end of the course (P=0.001). Staff with a pre-workshop score less than 55 had a greater improvement in TDM scores post course (11.4 +/- 4.32 vs 2.43 +/- 2.93, P=0.002).

Conclusion

The team building workshop was effective in improving team functioning after 2 days, especially in teams where the baseline TDM score was low amongst members. Longitudinal follow up of team functioning over time would be beneficial to understand the sustainability of skills imparted to team members over time.

STANDARDISED PATIENT TRAINER MILESTONE PROJECT IN TAIWAN

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Background and Aims

With the crucial emphasis on the quality of the standardised patient's (SP's) performance during the high-stakes OSCE being required as a prerequisite for participating in Step II National Medical Board Licensure Examination in Taiwan since 2013, the professionalism and competencies of standardised patient trainers have received more attention than ever. By implementing the concepts of milestones for skill and knowledge acquisition, we can conduct a more objective assessment for SP trainer's professionalism. The purpose of our study is to develop the framework of competencies/sub-competencies and milestones for SP trainers.

Methods

By reviewing relevant articles, we identified a comprehensive list of SP trainer's tasks. Main competencies and sub-competencies for SP trainers were identified through a task-assignment process by a focus group discussion. The experts inside and outside our institute revised and came to a final separate consensus of all competencies and sub-competencies by using a modified Delphi process. With a similar process, we established the milestones of each of the sub-competencies.

Results

We identified eighty-one tasks of SP trainers after reviewing articles. Four competencies and sixteen sub-competencies were identified by the focus group and were validated by the modified Delphi process. Moreover, we established one hundred and fifty-eight milestones according to the tasks being categorised in each sub-competence. We also piloted an assignment process to revise the milestones.

Conclusion

Our study unveiled the process of identifying competencies and sub-competencies via categorising the comprehensive list of SP trainer's tasks. We also established the milestones for each sub-competence. In the near further, we will implement this milestone project for assuring reliability and validity. Hopefully, it could be a more objective and practical measurement for SP trainer's professionalism.

A NOVEL APPROACH TO THE DELIVERY OF VIDEO-BASED EDUCATION, CONTINUING EDUCATION AND ASSESSMENT OF HEALTH WORKERS IN THE REMOTEST LOCATIONS

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Background and Aims

The aim of the World Health Organisation to achieve universal health care by 2030 will not be realised without a transformation of our approach to the education of health workers, particularly in resource-poor countries. Indeed, the World Health Organisation states that such countries should consider innovations in their models of care and educational strategies (1).

Aim: To develop a system that allows the delivery of video intense multimedia educational programmes, continuing education, and assessment of health workers in the remotest of locations where Internet access is unavailable.

Methods

A video-based educational programme to train community health workers in Africa on Malaria, Pneumonia, and Diarrhoea, based on the existing IMCI paper-based training was developed by the not for profit organisation World Medical Education in collaboration with the World Health Organisation and UNICEF (Caring for the Sick Child in the Community: 2019 ISBN: 9789241548045).

App development was undertaken to allow navigation through the programme when the programme was loaded onto mobile phones or via a memory stick attached to the phone. The App was further developed to allow a central database to send out an SMS code to health workers that unlocked continuing educational videos on the phone/memory stick that the user could not previously access. An assessment system was also developed to automatically return results to the central database. The testing of the system was performed in the UK and the Philippines. A system for uploading multiple PDF guidelines was also developed. The system was tested on Samsung and Huawei android phones.

Results

The App/mobile phone navigation system allowed the IMCI based programme Caring for the Sick Child in the Community to be accessed when loaded directly onto phones and also via memory sticks attached to the phones. The system was intuitive with users able to navigate through without prior training.

The database developed allowed SMS messages with an attached code to be sent to multiple health workers in locations where a phone signal was available. Health workers typed the code into the App unlocking a video they had not seen before. They then successfully answered four questions based on the video aimed at assessing clinical skills and management. In all cases when the answer submit button was clicked, the score was received by the central database. Submission of answers allowed users to view video with a full explanation - their continuing education. Following this, they were asked the same questions and the answers were submitted to the central database. The system was successfully trialled in the UK and the Philippines.

Conclusion

We have successfully developed and evaluated an App/mobile system that allows context-specific video-based educational programmes to be delivered and meaningful continuing education to be delivered to health workers in remote locations. The system will also allow the assessment of large numbers of remotely working health workers before and after delivery of video-based continuing education.

(1) Health workforce requirements for universal health coverage and sustainable development goals: Human resources for health observer series 17: 2016: ISBN 9789241511407

ACCREDITATION'S ROLE IN SUPPORTING STUDENT/TRAINEE WELLBEING AND A SUPPORTIVE LEARNING ENVIRONMENT

Walters T, Vaughan S

Accreditation Section, Australian Medical Council, Australia

Background and Aims

The Australian Medical Council (AMC) is the national standards body for medical education in Australia. It sets standards and accredits medical school, internship and specialist medical programs against these standards.

The AMC has strengthened its accreditation standards in the last six years, in response to significant Australian studies concerning training and workplace cultures, and trainee /student wellbeing. Seminal reports included a National Mental Health Survey of Doctors and Medical Students (Beyond Blue, 2013) which revealed they are more likely to experience psychological distress and suicidal thoughts compared to the wider population, a report by the Royal Australasian College of Surgeons (2015) that highlighted that 49% of fellows, trainees and international medical graduates reported being subjected to discrimination, bullying and sexual harassment and the College's response, its Action Plan: Building Respect, Improving Patient Safety.

In consultation with its stakeholders, the AMC introduced from 2015 requirements that education providers (such as specialist medical colleges) promote a supportive learning environment, have processes to identify and manage concerns about trainee wellbeing or unsuitable training environments, and pathways for resolution of training related disputes.

The AMC is reviewing its accreditation standards for both medical school and intern training in 2019 and 2020. The evaluation will include consideration of the impact of the new trainee wellbeing and supportive learning environment standards.

Methods

The reviews of the standards include environmental scanning, literature reviews, analysis of accreditation reports and outcomes, focus group discussions, and surveys.

Results

Initial results from AMC interviews and focus groups indicate that, in line with the AMC's strengthened requirements, education providers are giving a stronger focus to student/trainee support and wellbeing, supportive learning environments, and processes for addressing training-related disputes. The standards have supported education providers to address professional and workplace culture issues that impact on training, and to take action on issues identified by students/trainees and supervisors in a timely manner.

Conclusion

The AMC will share the findings of the reviews in relation to the impact of strengthened accreditation standards on trainee wellbeing and supportive learning environments, and the plans for development of further supporting resources. The AMC will also outline proposals for change to accreditation standards. This will include consideration of the role of accreditation in driving and supporting important system wide-change and valuing supportive cultures and wellbeing.

TEACHING PROFESSIONALISM TO MEDICAL STUDENTS - CHALLENGES AND FUTURE DIRECTIONS

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[1]Department of Paediatrics, [2]Histology and Embryology, [3]Paediatric Department, [4]Office of Testing and Quality Assurance, Faculty of Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

Background and Aims

Medical professionalism is a belief system about shared competency standard and ethical values underpinning the public trust in physicians. In 2017, for the first time ever, the University of Medicine and Pharmacy at Ho Chi Minh City (UMP) launched a new programme to teach medical professionalism to its second year medical students. This study aims to evaluate the programme's initial results and challenges for programme improvement.

Methods

We used online questionnaires to collect feedback from the second year students on the professionalism teaching programme. We quantitatively analysed the results and made relevant hypotheses on the challenges we were facing.

Results

The response rates of student were 56.3% (231/410). 95.2% of the students participating in the response answered that they clearly understood learning objectives before come to clinical hospital. 93.9% of the students agreed that they had chances to practice what they learned, and 91% of the students confirmed that their skills were significant improve after the course. 96.9% of the students rated that faculty had good interaction to students. 90% of the students answered that this programme help them to feel more confidence in clinical practice. 10.4% of the students said that the topics on professionalism should be more reality and 12.3% of them agreed that discussion sessions should be reorganised to become more attractive.

Conclusion

The new professionalism programme at UMP has achieved its expected results. Students understood the role of medical professionalism in clinical practice, which in turn motivated their commitment to self-learning and effective interaction with faculty. However, this programme still need to modify to become more attractive. Vivid learning by different types of role-play, improving student-faculty interaction inside and outside of class may help us to overcome these barriers.

THE RELATIONSHIPS BETWEEN MEDICAL STUDENTS' CONCEPTIONS OF LEARNING, STRATEGIES TO LEARNING, AND LEARNING OUTCOMES IN LEARNING MEDICAL HUMANITIES

Chen Y

Graduate Institute of Medical Education & Bioethics, College of Medicine, National Taiwan University, Taiwan

Background and Aims

By learning medical humanities, medical students are expected to shift from handling the diseases only to seeing a whole sick person. Therefore, understanding medical students' learning process and outcomes of medical humanities becomes an essential issue of medical education. The objectives were: (1) to examine the relationships between medical students' conceptions of learning and strategies to learning; and (2) to investigate the relationships between students' strategies to learning and learning outcomes for medical humanities.

Methods

We used the modified Approaches to Learning Medicine (mALM) questionnaire and Conceptions of Learning Medicine (COLM) questionnaire to measure the medical students' strategies to learning and conceptions of learning respectively. The learning outcome was measured using students' weighted grade in a medical humanities course. The confirmatory factor analysis (CFA) was used to validate the COLM and mALM questionnaires, in which construct validity and reliability were assessed. Pearson's correlation was used to examine the relationships among the factors of COLM, mALM, and the weighted grade. Path analysis using structural equation modelling technique was employed to estimate the structural relationships among the COLM, mALM, and the weighted grade.

Results

A total of 275 first-year medical students consented to participate in this study. The participants adopting surface strategies to learning were more likely to have unsatisfactory learning outcome ($\beta = -0.14$, $p = .04$). The lower-level conception of "Preparing for Testing" was negatively ($\beta = -0.19$, $p < .01$) associated with deep strategies of learning, and positively ($\beta = 0.48$, $p < .01$) associated with surface strategies of learning ($\beta = 0.50$, $p < .01$). The lower-level conception of "Skills Acquisition" was positively associated with deep strategies of learning ($\beta = 0.23$, $p < .01$).

Conclusion

Medical educators are encouraged to wisely employ teaching strategies to increase medical students' deep learning strategies, and to prevent from using surface learning strategies in the medical humanities course in order to achieve better learning outcomes.

ENTRUSTABLE PROFESSIONAL ACTIVITIES IN DENTAL EDUCATION - THE DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

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[1]Deanery, [3]Children and Community Oral Health, School of Dentistry, [2]Centre for Medical Education, School of Medicine, International Medical University, Malaysia, [4]Centre for Medical Education, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Background and Aims

Programmes in medical education have realised that to formalise and effectively implement competency based medical education approaches to clinical practice, entrustable professional activities (EPAs) are a way forward. EPAs are the tasks to be entrusted that are designed to integrate multiple competencies, incorporate milestones, and indicate the level of supervision required for clinical work. This is essentially an important concept for dental education where the students begin to treat their patients in the early years and progress to advanced levels in the later years. The training demands more integration focusing on professional activities in a more authentic and personalised learning environment. Dental education in Malaysia is aligned with national competencies and standards and recommends the learners to practice the defined skills with increasing level of independence [Competencies of New Dental Graduate, Malaysia (2018)]. The intent of this contemplation is to embark on emerging EPA based curricular framework for dental education.

Methods

In 2018, the curriculum review process for accreditation resulted in a number of recommendations. The Dean of the School decided to establish a committee and a writing group was constituted maintaining representatives from the dental faculty, leads of dental specialties and medical education department. Essentially, the EPAs were drafted based on the Minimum Clinical Experience (MCE) and Expected Clinical Experience (ECE) in competency based assessment document of the Dental Deans' Council, Malaysia. The MCE encompass the pre-requisite dental procedures for competency testing and the ECE comprise of expected clinical and procedural experiences prior to graduation.

Results

Accordingly, 11 Main EPAs and 41 small (nested) EPAs were developed to define what a practicing dentist should be competent to perform in practice. The scope of EPAs and essential course learning outcomes were finalised via several group discussions and were presented to university steering committee in June 2019. The feedback from the panel was subsequently incorporated into the draft version. In order to eliminate or amend sub-standard EPAs, a validation study was planned using EQual rubric from Queen's University, Canada. The participants included dental academic faculty, dental alumni, primary healthcare practitioners, and external dental faculty from other university. The data is being analysed.

Conclusion

The outcome of the validation and revision measures will be presented.

USING ART OF MEDICINE AND HUMAN LIFE SPAN COURSES TO TEACH EMPATHY AMONG MEDICAL STUDENTS

Zulueta MC

Anatomy and Obstetrics and Gynecology, La Consolacion University Philippines College of Medicine, Philippines

Background and Aims

Helping medical students understand the patient's perspective and express caring, concern, and empathy towards patients are important educational goals of medical schools. The Art of Medicine and Human Life Span courses utilised activities, play therapy and experiential learning in teaching medical students to be empathetic with the different age groups and their unique needs including special issues in a doctor-patient relationship.

Methods

The Art of Medicine course introduces the distinct characteristics, rights and values of patients; and instils the responsibilities and professional traits of physicians. The course gives emphasis to the role of communication skills with patients and colleagues; and shows proper bedside manners highlighting kindness and empathy. Video presentation, role playing, demo-return demo, simulation and actual patient exposure are among the teaching-learning activities used in the course. Human Life Span utilises video presentation, play therapy and experiential learning through activities like "A Sick Cake" and "A Mile in my Shoe" to help the students understand that patients are more than the illness, injury or disease they were diagnosed with, instead the students are given a glimpse of what a patient is experiencing outside the confines of the hospital and in their own community setting.

Results

The courses successfully provided an ethically and psychologically sound foundation in instilling empathy on millennial medical students as evident on the feedback of students using Student Assessment of their Learning Gains (SALG) instrument. The activities facilitated the adoption of patients' perspectives with the hope of developing competent, ethical, humane and empathetic physicians.

Conclusion

Utilising activity-based teaching and learning strategies as well as experiential learning in the Art of Medicine and Human Life Span courses are effective teaching methods in developing empathy among the millennial medical students.

Friday 10 January 2020, 2.15pm

Aquarius 2, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 6 – YOUNG SCHOLAR 3

Teaching and Assessing Communication in the Intensive Care Unit: A Systematic Review
Wan Ying Elisha Chia, Singapore

Medical Student Reflections: Silent Mentors Teach Students Soft Skills as Well as Human Anatomy
Sara Kashkouli Rahmanzadeh, Singapore

Redefining the Nursing Physical Assessment: Exploring Perceived Barriers to Practice Among Undergraduate Students
Mavis Weiting Tan, Singapore

Student Ratings In Clinical Teaching (STRICT): Development of a New Questionnaire Based on a Systematic Meta-Analysis
Pin-Hsiang Huang, Australia

Improving Simulation Pre-Briefing Through a Near-Peer Role-Modelling Video: An Interventional Study
Meng Ying Sim, Singapore

Visualisation Ability and Physicality: How They Interplay When Learning Functional Anatomy with 3D Anatomical Models
Jieying Lee, Singapore

Mentoring Malpractice – What are the Checks and Balances? A Systematic Scoping Review of Mentoring Guidelines in Novice Mentoring in Medicine
Clarissa Wei Shuen Cheong, Singapore

Protecting and Respecting Individual Dignity at End-of-Life (PResIDE) – A Resuscitation Status Discussions Audit, and Barriers to Their Occurrence
Norshima Binte Nashi, Singapore

Do Faculty Development, Tutorial and Teaching Experiences Influence Teachers' Perspectives on Teaching Approach? A Study on PBL Implementation in FMMU
Reghina Kusumawardhani, Indonesia

TEACHING AND ASSESSING COMMUNICATION IN THE INTENSIVE CARE UNIT: A SYSTEMATIC REVIEW

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[1]Yong Loo Lin School of Medicine, National University of Singapore, Singapore, [2]Division of Palliative Medicine, National Cancer Centre Singapore, Singapore

Background and Aims

Communication needs are high among critically ill patients in Intensive Care Units (ICUs). Good communication among healthcare professionals (HCPs) in the ICU setting improves patient and family-centred outcomes and enhances clinical decision-making. This necessitates effective training and assessment of communication skills. Yet, little is known about the existing scope of communication skills training for HCPs in ICUs, and the gaps therein. To address this gap, a systematic review of prevailing accounts of teaching and assessing communication in ICUs was carried out.

Methods

Arksey and O'Malley's (2005) methodological framework for conducting scoping reviews was used to guide study of the potential size, gaps and scope of available literature on teaching and assessing communication among HCPs in the ICU. Using identical search strategies, 6 reviewers performed independent literature reviews of articles published in PubMed, ERIC, JSTOR, Embase, CINAHL, Scopus, PsycINFO and Google Scholar databases.

Results

8820 abstracts were identified, 238 full-text articles were reviewed, and 35 full-text articles were thematically analysed to reveal 4 themes- strategies employed to teach communication, factors affecting communication training, strategies employed to evaluate communication, and outcomes of communication training.

Conclusion

To address the complex and challenging needs of patients in the ICU, HCPs need to be equipped with appropriate communication skills. This necessitates the implementation of effective communication training programmes to increase their confidence in circumnavigating difficulties in caring for patients, conversing with families, and communicating with other HCPs. However, existing programmes have various limitations in teaching and assessing communication.

Though didactic teaching is the most commonly used strategy employed to teach communication, it alone is not effective and such programmes are most effective when multiple teaching methods are incorporated, in order to harness the benefits of each method. Design and implementation of such programmes is facilitated by stakeholder support and a supportive learning environment, and should meet learners' needs. These programmes should be horizontally integrated into the curriculum where it is revisited repeatedly, and longitudinally integrated into clinical practice at various time points and in various settings within the learner's education. Barriers to these training programmes involve factors during training and post-training, including time constraints, resource constraints, course planning difficulties, and a lack of multidisciplinary collaboration. In addition, though self-assessments are the most common strategy employed to evaluate communication training, they may be unreliable and poorly correlated with actual performance outcomes. This results in a failure of existing evaluation methods to assess whether communication skills learnt are being applied to actual clinical practice in the long run. Nonetheless, communication training programmes have proven valuable in terms of having positive outcomes on HCPs, patients and their families, medical faculty, as well as the healthcare system. Negative outcomes can be overcome by incorporating the communication curriculum longitudinally, and ensuring that skills learnt are being applied to clinical practice.

Thus, future research should focus on the design of communication training programmes that incorporate multidisciplinary collaboration with a structured, sustainable and integrated curriculum, as well as the design of a holistic and longitudinal evaluation tool with objective measures.

MEDICAL STUDENT REFLECTIONS: SILENT MENTORS TEACH STUDENTS SOFT SKILLS AS WELL AS HUMAN ANATOMY

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Background and Aims

Human cadaveric dissection is an essential component of medical education and cadavers are often regarded as the first patient of medical students. Dissection programmes have the ability to instil characteristics of compassion, empathy and accountability - amongst others - in future medical professionals. These characteristics or 'soft skills' are essential attributes medical professionals should possess but are not formally taught in medical curricula. At the National University of Singapore, cadavers are referred to as 'Silent Mentors' and during the annual summer vacation, an elective cadaveric dissection programme is conducted. Students partake in cadaveric dissections at their own pace and sessions are structured wholly around each students' individualistic preference. Following the completion of exploratory dissection, Silent Mentors are sutured up by students in preparation for cremation. The objective of this study was to understand whether cadaveric dissections motivate the development of 'soft skills' amongst medical students.

Methods

During the programme, students were not required to submit formal reflections. Upon completion of the programme, online feedback forms with a component for reflection was made available to them instead. Students were encouraged to submit reflections, however, this was not mandated in order to garner an organic response. Their responses were presented as short and long form writings. Additionally, during the course of the programme, a number of students were eager and proactive in sharing their reflections and these submissions were taken into consideration as well.

Results

Of the 300 students that took part in the programme, 88 submitted feedback while 46 students wrote reflections. The reflections highlighted nineteen common themes. Majority expressed an 'appreciation towards the Silent Mentors and their families' as well as the extent to which the programme was 'meaningful,' 'humbling,' and 'illuminating' to them. One student shared 'having received such an incredible gift...reinforces in us the values of respect, dignity and empathy.' Another wrote about 'the ethical and humanitarian side of anatomy, especially the selflessness of the silent mentors.' On suturing, students felt a sense of accountability to their Silent Mentor and stated that it was 'a very vital section not to be left out...so that there is closure.' Many appreciated the opportunity to learn about anatomical variations, writing 'each person is built differently and the textbooks illustrate all but a few of us.' The reflections portrayed the positive impact of the programme and the important lessons students had learnt that they had not previously acquired through theoretical anatomy lessons.

Conclusion

The themes presented in the reflections illustrate the importance of cadaveric dissections in contributing to the professional identities of students. Those that participated felt it was an important way for them to conclude their preceding yearlong study of human anatomy. As portrayed in their reflections, this programme helped students develop their soft skills as budding healthcare workers which reignited their passion towards medicine.

REDEFINING THE NURSING PHYSICAL ASSESSMENT: EXPLORING PERCEIVED BARRIERS TO PRACTICE AMONG UNDERGRADUATE STUDENTS

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Background and Aims

Physical assessment represents a stride towards greater nursing autonomy and is a fundamental element of nursing care, which enables nurses to recognise subtle signs of clinical deterioration and intervene promptly. However, international studies have shown that these skills are not routinely performed in clinical practice. Instead, nurses' role in patient surveillance seems to have been relegated to the collection of vital signs and skills of general observation. This has prompted the need to identify barriers influencing the transfer of physical assessment knowledge to nursing practice, particularly for undergraduate nursing students dealing with a content-laden curriculum.

This study sought to explore and compare the perceived barriers to physical assessment among undergraduate nursing students in Singapore.

Methods

An exploratory descriptive quantitative study was conducted in a local university in Singapore. 303 second-, third- and fourth-year undergraduate nursing students were recruited. The 38-item Barriers to Nurses Use of Physical Assessment Scale was administered. Descriptive statistics and one-way ANOVA were used for data analysis.

Results

Specialty care (3.54 0.57) and lack of confidence (3.52 0.73) were perceived by students as the most influential physical assessment barriers, while influence on patient care (2.35 0.53) was the least influential. Students (especially Year 4s) believed that physical assessment was limited to skills demanded by specialised practice, and lacked confidence in performing them. Lack of time and interruptions was found to be significantly correlated with year of study ($F = 3.249$, $p = 0.040$), where Year 4s (3.49 0.63) were more likely to be affected vis-à-vis Year 3s (3.22 0.67), given their case management experiences. Additionally, the lack of role-modelling (3.18 0.68) and ward cultures (3.09 0.62) were perceived as notable barriers. While reliance on others and technology were not established as influential barriers, physical assessment was still seen as the main responsibility of doctors, and students (particularly Year 2s) still relied on electronic monitoring devices for assessment data. Lastly, although most students appreciated the value of physical assessment, many remained unsure about how it may be effectively incorporated into their practice.

Conclusion

A restructuring of undergraduate physical assessment curriculum is indicated, involving a fundamental shift from the biomedical framework traditionally used. Greater emphasis on core skills relevant to the initiation of nursing interventions is required, together with accompanying critical thinking and clinical reasoning skills to promote its broad application across different clinical contexts. The "Core + Cluster" model may be useful in clinical practice for defining a set of essential skills required for all generalist nurses, whilst allowing for adaptability across different specialty areas. Ward cultures promoting the use of physical assessment must also be fostered, to create a positive environment for the learning and practicing of physical assessment.

STUDENT RATINGS IN CLINICAL TEACHING (STRICT): DEVELOPMENT OF A NEW QUESTIONNAIRE BASED ON A SYSTEMATIC META-ANALYSIS

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Background and Aims

When measuring the effectiveness of clinical teaching, numerous teaching factors including the learning environment have to be considered. However, most measurements do not comprehensively cover the most important and relevant teaching factors as they generally concentrate on a small number of teaching factors. Consequently, there is a need to develop tools to assess the effectiveness of clinical teaching which consider the whole range of teaching factors. Therefore, this study aims to devise an evidence-based, reliable and valid measurement, which considers all teaching factors, for clinical students to report the perceived teaching practices.

Methods

A new clinical teaching assessment tool was devised on the basis of a meta-analysis encompassing the effective teaching-learning factors in clinical education. From sixteen teaching-learning factors in the meta-analysis and an additional one from the authors' consensus, an item pool was generated and further reduced from 202 to 79 items through discussions with scale experts, medical educators and medical students. Six frequency scales from never to always were applied. The newly devised tool, Student Ratings in Clinical Teaching (STRICT), was applied to medical students in year 2, 3 and 6 at University of New South Wales, and the data was rigorously tested for reliability, content validity and construct validity.

Results

Among 834 medical students, 352 (44.2%) completed the questionnaire. From the exploratory factor analysis with factor loadings equal or greater than 0.45 in structure matrix, four clinical teaching practices were identified: (a) student-centred learning, (b) self-directed learning, (c) problem-based learning, and (d) visual technology. The reliability (Cronbach's alpha) was 0.89, 0.78, 0.77, and 0.85 respectively. In the subsequent confirmatory factor analysis, student-centred learning, problem-based learning and self-directed learning were highly correlated to each other (0.72 to 0.77), while visual technology had lower correlation with them (0.42 to 0.55).

Conclusion

Student Ratings in Clinical Teaching is a valid and reliable tool. The tool demonstrates how students perceive clinical teaching efficacy and that effective teaching practices are highly correlated. Apart from visual technology, the other teaching practices can further converge into "student active learning". The results enable clinical educators to use these effective teaching practices to improve the effectiveness of teaching outcomes, based on an understanding of how clinical students perceive teaching practices. Clinical teachers may adapt their teaching practices with more student active learning activities and utilise visual technology to facilitate clinical learning efficacy. Clinical educators may apply Student Ratings in Clinical Teaching to assess how these teaching practices are implemented in current clinical settings.

IMPROVING SIMULATION PRE-BRIEFING THROUGH A NEAR-PEER ROLE-MODELLING VIDEO: AN INTERVENTIONAL STUDY

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Background and Aims

Pre-briefing is important to provide participants with necessary contextualisation for full engagement in simulation-based learning. However, concepts taught by instructors would remain abstract to learners and may consequently hinder behavioural change without a prior mental role-model. Bandura's social learning theory suggests that learning occurs by reflective observation followed by practical reinforcement. Incorporating model demonstrations by near-peers may further enhance reflective learning through increased social and cognitive congruence. Therefore, we hypothesise that pre-briefing using a peer modelled demonstration video before simulation improves learning through cognitive apprenticeship.

Methods

We conducted an interventional study to evaluate the effectiveness of incorporating an instructional video into the simulation pre-brief of first year internal medicine residents in a single training institute in Singapore. The video showcased peers managing an example scenario with focus on the principles of managing undifferentiated clinical scenarios, application of clinical reasoning frameworks and teamwork. Residents were randomly assigned into two groups (video intervention and control), each sub-divided into five smaller groups participating in the same circuit of five scenarios simulating medical emergencies. Residents were informed that there was to be formative assessment but were blinded to the intent of the pre-briefing video. Independent faculty assessors evaluated participants using a common set of rubrics but were blinded to the pre-briefing video intervention. Participants scored their degree of knowledge, experience and confidence in handling medical emergencies through a self-administered questionnaire conducted pre- and post-simulation. Endpoints of the study were assessor determined global pass rates, achievement of pre-identified clinical objectives, team work and effective escalation to seniors, as well as the change from baseline participant self-reported knowledge, experience and confidence.

Results

Thirty-two first year internal medicine residents (14 in the morning group, 18 in the afternoon group) participated in this simulation training. Both groups had similar duration of internal medicine experience and prior exposure to simulation training. The intervention cohort demonstrated significantly better teamwork ($P < 0.001$) and achieved significantly more clinical objectives ($P = 0.008$). There were no significant differences in participant reported gains in knowledge, confidence and experience.

Conclusion

Incorporation of a near-peer demonstration video into conventional didactic pre-briefing may enhance residents' teamwork and performance in managing situations of medical emergencies. These findings may suggest a greater impact of role modelling on learning the virtues of teamwork to achieve desired clinical goals. Attributes such as knowledge and confidence are more domain-specific and is less influenced by the viewing of a generic pre-briefing video. The finding from our study may have also been limited by the small sample size. Further study in future iterations of simulation training can add to our understanding.

VISUALISATION ABILITY AND PHYSICALITY: HOW THEY INTERPLAY WHEN LEARNING FUNCTIONAL ANATOMY WITH 3D ANATOMICAL MODELS

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Background and Aims

Proper learning of human anatomy invariably involves 3-dimensional (3D) visualisation of structure and function, an ability which can vary significantly among medical undergraduates. For instance, the knee joint is not only critical for mobility, but is also inherently complex in structure and function, particularly with reference to its locking movement that is integral to full extension. The underlying mechanism of this movement can be challenging to undergraduates with poor 3D visualisation of complex structural interactions. The use of 3D visualisation tools such as printed physical models (PM) and virtual reality (VR) are often used as "Cognitive Prosthetics" to enhance spatial understanding. However, many published reports have called for a critical look at the current hype surrounding these tools, as past studies did not provide insights on how learning is actually achieved. In this study, we compared the relative effectiveness of 3D printed PM versus identical VR models, in their ability to facilitate understanding of the locking and unlocking mechanisms at the knee joint.

Methods

A group of 45 first year medical students in Yong Loo Lin School of Medicine were voluntarily recruited for this study, which has been approved by the Institutional Review Board. The Vandenberg and Kuse Mental Rotation Test (MRT) was first administered to divide the students equally into (1) Higher (2) Mid and (3) Lower Visualisation Ability (VA). As the participants were not previously exposed to this topic, there was a brief video introduction explaining the major components and movements at the knee joint and directing students to do necessary observations of structure in relation to function. Participants were then randomly assigned to use either PM or VR models which are identical 3D models presented in physical form or virtually through a mobile phone screen.

Results

The choice of models significantly affected students with lower VA (MRT score of 14 - 26, mean difference of 35%) and marginally on mid VA (27-31, mean difference of 12%) and high VA (32-42, mean difference of 9%). Further analysis suggests that being able to physically manipulate the model affected students with lower VA in the understanding of relational information, the second highest level in SOLO (Structure of Observed Learning Outcomes) taxonomy, when compared to virtual model (50% ± 18% versus 20 ± 21%, p= 0.03, Cohen's d=1.53). In this level, students have to understand relations between several elements of the knee joint and how they contribute to locking and unlocking of the joint.

Conclusion

The study of functional anatomy is inherently the spatial understanding of body structures and their relative positions in movements. Without clear understanding of how different models affect the acquisition of knowledge, interventions have often received mixed reviews and may not be appropriately integrated into the curriculum. Our results show that different interventions have different implications in learning. Appropriate tools have to match with the learning objectives to achieve the desired outcome.

MENTORING MALPRACTICE - WHAT ARE THE CHECKS AND BALANCES? A SYSTEMATIC SCOPING REVIEW OF MENTORING GUIDELINES IN NOVICE MENTORING IN MEDICINE

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Background and Aims

Mentoring - the foundation of mentoring in medical education - relies on a nurturing mentoring relationship among mentors and mentees, built on an effective mentoring curriculum and consistent support by the host organisation. The paucity of established mentoring guidelines potentiates unethical and abusive practices, and threatens the role of mentoring in medicine. A systematic scoping review of existing ethical frameworks in mentoring is conducted to guide the setting of clear practice guidelines that inform assessment processes and mentoring conduct.

Methods

Arksey and O' Malley's (2005) methodological framework was used to guide a systematic scoping review involving articles published between 1st January 2000 and 31st December 2017 in seven relevant databases. Braun and Clarke's (2006) thematic analysis approach was adopted to compare ethical guidelines in novice mentoring in medicine across different settings, mentee and mentor populations and host organisations.

Results

4238 abstracts were identified, 412 full-text articles were retrieved, and 128 articles were selected. The two themes include the desired characteristics of mentees, mentors and the mentoring relationship and prevailing stipulations and ethical frameworks. Such characteristics include humility, well-roundedness, honesty and open communication.

Conclusion

'Core' values underscore the weight placed upon nurturing effective mentoring relationships by all prevailing frameworks. These lists of desirable characteristics serve to guide the nurturing of mentoring relationships including guiding the recruitment and vetting of mentees and mentors, the definition of mentor competency, the selection and design of professionalism assessment tools. They also inform the design of mentoring approaches, curriculum and evaluation, including the planning of longitudinal support and oversight by the host.

In attempting to ensure that mentoring processes are effectively nurtured and supported, it is clear that the roles and responsibilities of the mentor and the host organisation are often conceived as one and the same. This may in part be because some programmes see the mentor as an extension of the host organisation with the mentor's goals, roles and responsibilities inseparable from that of the host. These concepts help explain the continued notion of mentoring being a dyadic relationship even as new data suggests the irrefutable role of the host within mentoring relationships. The data also suggests that most guidelines see the mentoring processes as a vertical parental relationship between an experienced and principled patriarch overseeing the development of an eager young learner. This perspective is not consistent with prevailing concepts of mentoring given that it neither acknowledges the mentee's developing autonomy nor the evolution of mentoring relationships to a more reciprocal or horizontal mentoring relationship reported in recent reviews. However, prevailing guidelines are elusive and limited in addressing mentoring malpractice. Future studies must examine the explicit and implicit influences upon mentoring practices in order to inform the creation of strategies to address and mitigate mentoring malpractice.

PROTECTING AND RESPECTING INDIVIDUAL DIGNITY AT END-OF-LIFE (PRESIDE) – A RESUSCITATION STATUS DISCUSSIONS AUDIT, AND BARRIERS TO THEIR OCCURRENCE

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Background and Aims

Discussion of resuscitation status with patients/families are not done consistently by doctors. A Korean study found that 64-70% of older patients do not wish for resuscitation in event of deterioration. In a study of 5 tertiary teaching hospitals, resuscitation status was not documented in up to 97.5% of patients. In cases where resuscitation status was discussed, the literature suggests that the quality may be suboptimal.

The aims of the study were:

1. To find out the proportion of suitable patients admitted under the medical service who had their resuscitation status discussed
2. To find out the barriers towards junior doctors' discussion of resuscitation status
3. To assess if an intervention in the form of a workshop is effective in improving:
   a) The proportion of suitable patients who had their resuscitation status discussed, and
   b) The knowledge and confidence of junior doctors in discussing resuscitation status

Methods

A retrospective cross-sectional audit of 127 patients admitted to the medical service of an integrated hospital for a 1-week period in January 2019 was done to assess the proportion of resuscitation status discussed for suitable patients (defined as patients who had poor premorbid states or had one or more irreversible organ dysfunction). An online survey was undertaken among junior doctors to find out the barriers to such discussions taking place. The audit and survey were repeated after the intervention (communications workshop) to assess the effectiveness of the workshop. One of the significant barriers identified was the consultant identification of suitable patients to discuss resuscitation status. As such, a post-hoc survey was conducted among 20 consultants to assess barriers towards this.

Results

48.8% patients who warranted a resuscitation status discussion did not receive it. This was reduced to 33.3% after the workshop. 100% (20/20) of the participants responded to the survey. Among the important factors identified were lack of knowledge (50%), lack of formal training (65%), and lack of confidence (only 55% had moderate to high confidence level), which all improved after the workshop. Participants demonstrated a positive attitude towards discussion of resuscitation status, with 85% stating that it is important, and 80% stating that it was their duty. The most frequently identified barriers were difficulty in deciding patients' suitability for resuscitation, concern about difficult patients/families, insufficient time, and fear of inducing anxiety in patients/families, all of which improved after the workshop.

Conclusion

There was a significant proportion of patients who did not have their resuscitation status discussed even though they warranted it. Lack of knowledge and training, and difficulty in deciding patients' suitability for resuscitation were main contributing factors. The communications workshop was effective in improving junior doctors' knowledge and confidence in discussing resuscitation status, and the proportion of resuscitation status discussed. Formal training sessions for discussion of resuscitation status should focus on imparting knowledge and communication skills. Senior doctors can facilitate this process by identifying if patients were suitable candidates for resuscitation.

DO FACULTY DEVELOPMENT, TUTORIAL AND TEACHING EXPERIENCES INFLUENCE TEACHERS' PERSPECTIVES ON TEACHING APPROACH? A STUDY ON PBL IMPLEMENTATION IN FMMU

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Background and Aims

The curriculum change from the traditional curriculum to the PBL curriculum is a challenge for teachers in countries with a strong hierarchical culture. Many medical teachers in Asia still face challenges to implement PBL, particularly in terms of authority and the hierarchical student-teacher relationship, although they have participated in several faculty development programmes and had experiences to work as a tutor and teaching for several years. Most of the faculty development programmes seem focus on improving teachers' knowledge and teaching skills with too limited attention for developing teacher's perspectives on teaching. Teaching perspective of teachers is very important in the teaching and learning process because it can influence the teacher's approach to teaching and the student's approach to learning. The aim of this study is to identify teachers' perspectives of teaching approaches and to what extent the faculty development, teaching, and tutor experience are link to the teaching perspectives. This study is supposed to be a feedback for designing the faculty development programme in an institution especially in Asian countries.

Methods

This is a quantitative study by using the questionnaire of Approaches to Teaching Inventory (ATI) to assess teacher's perspectives of teaching approach: student and teacher centeredness. The questionnaire consists of 22 items with a five point Likert Scale ranging from 1 (only rarely true) to 5 (almost always true). The participants were all teachers in Faculty of Medicine Mulawarman University (FMMU) who had experiences in the tutorial PBL and the big class lectures. The questionnaire was distributed directly to the participant face to face. The questionnaire was translated from English to Indonesian and piloted in Indonesian setting. The questionnaire was revised based on the pilot and translated back into English. An English teacher and several medical teachers with master in medical education conducted the translation. Informed consents were obtained from all participants. All identities were kept confidential and not mentioned in the study reports and publications. Ethical clearance was obtained from Ethical Committee of FMMU. Multivariate analysis was used to explore the influence of teachers' perspectives with their experiences of faculty development (categories: <2 times, and 2-6 times), tutorial (categories: < 5 years, 5-10 years, and >10 years), teaching (categories: < 5 years, 5-10 years, and >10 years). All analysis procedures used SPSS with a significance level was $p < 0.05$.

Results

the participant rate was 70%. The percentages of teachers with the perspective of a student-centred approach were 24 teachers (75%), and those with teacher-centred approach were 8 teachers (25%). These perspectives were not influenced by their faculty development experience (p=0,12; 95%CI=0,05-1,33), tutorial experience (p=0,35; 95% CI= 0,04-2,38 and p=0,18; CI=0,03-1,68 for the experience 5-10 years and > 10 years, respectively), and teaching experience (p=0,38; 95% CI: 0,01-4,61 and p=0,51; 95% CI=0,02-6,99 for the experience of 5-10 years and >10 years, respectively).

Conclusion

Teachers in FMMU mostly had the perspective of a student centred-approach after few years of PBL implementation but the perspectives were not influenced by their faculty development, tutorial and teaching experiences.

Friday 10 January 2020, 2.15pm

Aquarius 3, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 7 – ASSESSMENT

Understanding the Relationship of the Assessor and Assessee in Undertaking Workplace-Based Assessments in General Practice
Emily Kirkpatrick, Australia

Workplace-Based Formative Assessment of Clinical Reasoning Skills by Visualising Learners' Clinical Reasoning Process
Kazuki Takada, Japan

Implementing the Modified Angoff Method of Standard Setting for Graduation Exam 2018 in UMP HCMC - Vietnam
Hoa Doan Thi Thu, Vietnam

Construct Validity of Script Concordance Testing Scores: A Six Year Follow-Up of Progression of Scores in Senior Medical Students
Siu Hong Michael Wan, Australia

Examining the Validity of the Rubric for Evaluating Postgraduate Students' Performance
Shuhao Wu, Taiwan

A Hermeneutic Literature Review of Workplace-Based Assessments in Postgraduate Medical Education
Jill Benson, Australia

Exploring Clinical Assessors' Perceptions of the Utility of Direct Observation Using the Mini-CEX and its Implementation Barriers
Shao Feng Mok, Singapore

Developing an Assessment Tool in Achieving Competencies of Inter-Professional Education
Fatikhu Yatuni Asmara, Indonesia

UNDERSTANDING THE RELATIONSHIP OF THE ASSESSOR AND ASSESSEE IN UNDERTAKING WORKPLACE-BASED ASSESSMENTS IN GENERAL PRACTICE

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Background and Aims

In November 2018, the Royal Australian College of General Practitioners (RACGP) awarded GPEx a Special Education Research Grant with the aim of designing a workplace-based assessment (WBA) Framework for use within Australian general practice. As part of this comprehensive project the aim was to undertake a qualitative investigation of the acceptability of WBAs in Australian general practice training and establish perceptions and attitudes across Australia of those who are both using the WBA tools and administering the tools.

Methods

127 participants, including medical educators, supervisors and trainees were interviewed across Australia from 9 GP training organisations (RTO), either face-to-face or via online video. Transcripts were themed and coded using a grounded theory approach with mapping of viewpoints, to understand the relationships, culture and barriers that exist regarding how WBAs are undertaken and how successful they are as learning and assessment tools. A variety of different WBAs are employed across the RTOs.

Results

Key themes that emerged were that registrars enjoyed having external observations of their consults as they were seen as useful learning activities when combined with random-case analysis, yet had concerns regarding high-stakes assessments being undertaken by their supervisor, citing a power imbalance and possible bias. The emphasis on the relationship between the assessor and assessee was cited as a significant factor when undertaking WBAs and supervisors similarly said that it would be difficult for them to perform high-stakes assessments on their own registrars. Interestingly, there was a demand from registrars to have tools that helped empower their learning and allowed the registrar to seek additional supervision, such as a procedural skills log or a tracked learning log.

Conclusion

When developing and implementing a WBA framework, it is imperative that the relationship between the assessor and assessee is understood and that additional mechanisms, such as registrar-controlled tools, can be utilised to increase registrar empowerment and subsequent learning in the workplace.

WORKPLACE-BASED FORMATIVE ASSESSMENT OF CLINICAL REASONING SKILLS BY VISUALISING LEARNERS' CLINICAL REASONING PROCESS

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Background and Aims

Clinical reasoning is a core component of clinical competency. Although the literature is rich with proposed methods to assess clinical reasoning skills, workplace-based assessments are limited to those which rely on assessors' subjective judgement (e.g., direct observations, global assessments, oral case presentations, written notes) in which visualising learners' reasoning process is difficult and poses a big challenge. To overcome this, we developed a modified mini clinical evaluation exercise (Mini-CEX) which visualises learners' reasoning process through the use of the essence of Script Concordance Test, and incorporated it into clinical clerkship curriculum as a mandatory activity. In addition to receiving feedback from an assessor at the scene, each learner has a mentor (faculty) who monitors his/her progress in acquiring clinical reasoning skills throughout a clinical clerkship year. We present here the results of first two levels (reaction and learning) of learning evaluation according to the Kirkpatrick model.

Methods

During our modified mini-CEX, learners first list diagnostic hypotheses on a patient-encounter worksheet, which we developed, based on presenting symptoms, demographic information, and the clinical context. Learners then conduct history taking and physical examination. Learners add new diagnostic hypotheses if necessary and then indicate, on the worksheet, how and how much the diagnostic likelihood of each hypothesis changes based on history and physical findings. Learners then proceed to presentation in which they propose final hypotheses and diagnostic and/or therapeutic plans. Assessors, who completed the required video tutorial, rate learners' performance according to a rubric which consists of four skills (history taking, physical examination, clinical reasoning/decision-making, presentation) and learners' entrustability (pre-entrustable, emerging, entrustable). Fifth-year medical students at the Tokyo Medical and Dental University completed required number (3 or 4) of the modified mini-CEX during the academic year 2017-2018, and answered questionnaires regarding their satisfaction about and learning from the modified mini-CEX at the end. Assessors were contacted for feedback.

Results

All 107 students completed required numbers of modified mini-CEX during the academic year 2017-2018, and 99 of them (93%) answered questionnaires. Eighty four percent of respondents rated the modified mini-CEX as very appropriate or appropriate from the viewpoint of its objectives. Respondents answered that the modified mini-CEX significantly or moderately improved their ability to conduct focused history taking based on clinical reasoning (88%), focused physical examination based on clinical reasoning (83%), diagnostic/therapeutic decision making 77%), and organised and logical oral presentation (82%). Each modified mini-CEX took about 60 minutes on average. Involved faculty staff described the biggest challenge as finding patients with clinical problems that are appropriate for the objectives of the modified mini-CEX.

Conclusion

We developed a modified mini-CEX which visualises learners' clinical reasoning process which enables both accurate feedback from assessors and effective reflection by learners themselves, without requiring significantly larger amount of additional time and effort on assessors than ordinary mini-CEX.

IMPLEMENTING THE MODIFIED ANGOFF METHOD OF STANDARD SETTING FOR GRADUATION EXAM 2018 IN UMP HCMC – VIETNAM

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Background and Aims

Passing scores for students' final exam have been arbitrarily determined in many institutions including UMP HCMC. In UMP HCMC, medical students have a graduation exam with 2 MCQ tests (120 items), 1 for internal medicine subjects, 1 for surgery subjects.

For many years, we used to set cut-off score at 60% correct answer for each of the graduation test without any evidence.

Methods for setting pass mark or standards fall into four broad categories: relative, absolute based on judgments about individual examinees, absolute based on judgments about test questions, and compromise methods.

Standard setting methods based on evaluation of test questions have a considerable body of published work supporting their use, and frequently used in high stakes testing, and the Angoff method is most commonly used. The modified Angoff method use item difficulty index to estimate proportion of minimally-competent candidates would answer the item correctly. So in 2018, it was the first time we introduced and used modified Angoff method to set pass mark for our graduation tests.

Methods

Teaching faculties from 7 departments of internal medicine subjects (15 judges) and 7 departments of surgery subjects (13 judges) were trained to use the modified Angoff method through a workshop including 4 sessions. One session was for introducing Angoff method, 3 sessions for rating items (rating independently, rating with item difficulty index, rating with discussion). There were 9 judges left for each panel at 4th session.

We collected the 9 judges' rating of each panel and calculated the rating of "average percentage correct" of all items as the passing scores. The inter-rater reliability was calculated by intraclass correlation coefficient.

Results

The result of the passing scores for the test of internal medicine subjects was 65.8%, and of surgery subjects was 59%. The more iterative process is used, the more agreement among judges is obtained, inter-rater reliability from 1st to 3rd iteration were 0.698, 0.933, 0.956 respectively for internal medicine subjects and -.191, 0.942, 0.972 respectively for surgery subjects.

Conclusion

The study demonstrated that it is feasible to use the Angoff method as an appropriate standard setting method for a graduation exam by involving enough faculty experts. The cut-off score is based on the content of the examination using content experts as judges, so we can defend our pass mark.

CONSTRUCT VALIDITY OF SCRIPT CONCORDANCE TESTING SCORES: A SIX YEAR FOLLOW-UP OF PROGRESSION OF SCORES IN SENIOR MEDICAL STUDENTS

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Background and Aims

Script Concordance Testing (SCT) is a relatively new modality in assessing clinical reasoning. Students are presented with a clinical scenario in the context of uncertainty and then asked to assess whether an additional piece of information increases/decreases the probability of the suggested diagnosis, or the usefulness of a proposed investigation/management on a 5-point Likert scale. To score these questions, the student's decision is compared to that of a reference panel of experts. A full mark will be given if the student's response is 'concord' with the majority of the panel. In the international literature, the tendency for SCT scores to consistently increase with increasing level of medical training has been reported as support for the construct validity of SCT. However, there is a paucity of evidence supporting the construct validity of SCT in undergraduate medicine.

The aim of the study was to investigate the construct validity of SCT, i.e. evidence of progression of scores from the pen-ultimate (3rd) to the final (4th) year in the 4-year graduate entry medical programme.

Methods

A set of 40 SCT questions was administered to the 3rd and 4th year medical students as part of their end-of-year summative written examinations. A retrospective analysis of the summative SCT scores for six cohorts of students from 2012 to 2017 was performed. Each student's SCT score in Year 3 was paired and matched with their respective SCT scores in the final (4th) year. Using a repeated measure t-test, pooled and matched SCT scores for the above mentioned six cohorts of students were analysed for evidence of significant progression from 3rd to 4th year.

Results

The mean SCT scores for Year 4 students (M=68.90, SD=7.79, N=552) was higher than the mean SCT score for Year 3 students (M=64.03; SD=7.98, N=552). This difference in penultimate and final year students' mean SCT score, was statistically significant [$t(552) = 12.78$, $p<0.001$]. A medium effect size is observed in the data, with Cohen's d (repeated measures), pooled = 0.544 (95% CI = 0.417 to 0.657).

Conclusion

In this study, although a different set of SCT questions was used for 3rd and 4th year students, the SCT scores in 3rd and 4th year are comparable because there was a standard setting process in each examination to enable score equating. The study demonstrated a significant upward progression of clinical reasoning skills in medical students, as measured by the SCT, providing evidence for the construct validity of SCT in assessing clinical reasoning in medical undergraduates. Further research to look at the progression of SCT scores from medical students to junior registrars and to experienced clinicians would provide further evidence to support the validity of this assessment tool.

EXAMINING THE VALIDITY OF THE RUBRIC FOR EVALUATING POSTGRADUATE STUDENTS' PERFORMANCE

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Background and Aims

The rubric for evaluating clinical evaluation forms for PGY students' clinical learning performance at MacKay Memorial Hospital have been used for years. However, there was no comprehensive elaboration of its conceptional framework. This study aims at establishing the construct validity of this rubric.

Methods

We conducted the principal components analysis (PCA) to identify the subscales embedded in this rubric, which comprised 13 items. The overall learning performance of 76 PGY students in 2016-17 was graded by means of this rubric, which was used for this further analysis. The Item-total correlation analysis and internal consistency test were utilised. Principal components analysis of the responses was conducted and scree plot was used to determine the minimum number of factors that explained a large proportion of the correlations between responses. Varimax rotation was conducted, and each description was assigned to the related factor. Thematic analysis by two investigators was utilised for illustrating the emerged factors after PCA.

Results

After the internal consistency test, all items passed the difficulty test, and discrimination test (Cronbach's α= 0.901~0.942). According to PCA, two factors were identified and they explained 61.60% of the variance (KMO=0.90; Result of Bartlett's sphericity test =0.00). After varimax rotation, these two factors explained 33.25% and 28.35% of the variance respectively. The first factor comprised 8 items, while the second consisted of the rest 5 items. Because the factor loadings of all 13 item were higher than 0.5, no items should be deleted.

Conclusion

The first factor was relevant to three ACGME Core Competencies: "Patient care", "Interpersonal and communication skills", and "Practice-based learning and improvement", while all the five items of factor 2 matched the definition of "Medical knowledge". Clinical teachers sometimes develop rubrics without theoretical frameworks. This study method could help teachers to re-evaluate the construct validity of the exiting rubrics.

A HERMENEUTIC LITERATURE REVIEW OF WORKPLACE-BASED ASSESSMENTS IN POSTGRADUATE MEDICAL EDUCATION

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Background and Aims

Since the introduction of the mini-CEX, workplace-based assessments (WBAs) have proliferated throughout postgraduate medical education. Yet, research examining their effectiveness has yielded mixed findings. To form the background for an Education Research Grant from the Royal Australian College of General Practitioners (RACGP), we aimed to generate a thematic overview of the literature examining WBAs in postgraduate medical education. This process was guided by three scoping questions concerning acceptability; effectiveness and assessment training.

Methods

A hermeneutic literature review was undertaken, which involved iterative thematic analysis of published articles to deeply engage with the literature in relation to the scoping questions. During the three rounds of coding, the key concepts were refined and additional questions and themes developed until saturation was reached. Four databases were searched to identify articles examining WBAs in postgraduate medical education from Australia, New Zealand, UK, Canada, the Netherlands and Scandinavian countries.

Results

Stakeholders consistently identified that the assessment of trainees' performance in an authentic context was the fundamental advantage of WBAs over other assessments. Acceptability and effectiveness of WBAs were related to multiple factors, including feasibility and engagement. Furthermore, the effectiveness of WBAs depended on the interactions between the tool, the users and the context. WBA training must encapsulate tool-based, psychological, clinical and organisational factors, and be provided to all relevant stakeholders within a conducive training organisation culture.

Conclusion

This thematic overview demonstrated that complex factors involving the user, tool and context interact to determine the importance, acceptability and effectiveness of WBAs. These results have contributed to an overall framework for WBA implementation in general practice training.

EXPLORING CLINICAL ASSESSORS' PERCEPTIONS OF THE UTILITY OF DIRECT OBSERVATION USING THE MINI-CEX & ITS IMPLEMENTATION BARRIERS

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Background and Aims

Workplace-based assessments (WBAs) are used to assess the competence of doctors during real-world clinical practice. This hinges on directly observing learners while assessing them with tools such as the mini-CEX. Despite the established literature backing its use in controlled environments and the perceived benefits of direct observation, trainee doctors still cite a low frequency of its occurrence at work. The study seeks to explore faculty members' perception of the utility of direct observation in the mini-CEX to assess residents' state of competence and the associated implementation barriers.

Methods

A qualitative study was conducted within the Internal Medicine Department of a Singaporean Academic Medical Centre that adopted a residency model of postgraduate medical training since 2010. Data was collected from 12 faculty members via individual semi-structured interviews. Data was iteratively analysed and organised into Evidence, Context and Facilitation themes based on the Promoting Action on Research Implementation in Health Services (PARiHS) implementation framework within a template analysis.

Results

Faculty members perceived direct observation to be of low utility due to its time consuming nature and poor fit with clinical efficiency. Inauthentic performances and doubts about the validity, reliability and purpose of improperly performed mini-CEX assessments with poor feedback led to its trivialisation. Contextual implementation barriers included participants' difficulty in fulfilling clinical and supervisory roles with conflicting targets, preference for longitudinal over episodic assessments and greater emphasis on high-stakes summative examinations. Facilitation barriers included insufficient protected time for assessment and inadequate faculty development to promote understanding in the assessment's place in the overall programmatic assessment framework. A lack of educational leadership and direction was also identified.

Conclusion

Direct observation and the mini-CEX were perceived by assessors to be of low assessment utility. The implementation barriers were related to suboptimal preparation of faculty members who poorly understood the intention of the overall programmatic assessment framework while having to juggle their conflicting roles. Increased faculty development and organisation regulation to improve assessment must be balanced with preserving residents' agency and ownership in the process. Educational leaders need to reconcile the importance and relevance of competency assessment alongside clinical productivity to promote the effective use of direct observation and the mini-CEX for competency assessment.

DEVELOPING AN ASSESSMENT TOOL IN ACHIEVING COMPETENCIES OF INTER-PROFESSIONAL EDUCATION

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Background and Aims

Competencies of Inter-Professional Education (IPE) according to IPEC (2012) are ethic/value, roles and responsibilities, communication, and team-team working. In order to evaluate the achievement, there is a tool which is used. However, many tools offered partial assess of competencies and not competencies as a whole. The aim of this study is to develop an assessment tool that can assess all competencies in IPE.

Methods

The tool is a checklist form which contains several statements. It was derived from IPE competencies. Each statement is scored 1-5, in which 1: poor, 2: bad, 3: enough, 4: good and 5: is very good. The tool was evaluated by a panel expert in order to gain feedback (content validity). Expert in community and health education of three programmes, namely medicine, nursing, and nutrician were involved in a panel expert. Subsequently, it was tested for construct validity and reliability. Thirty participants were involved.

Results

There are 26 statements in a tool. It contains 7 statements for ethics and value, 6 statements for roles and responsibilities, 6 statements for communication, and 7 statements for team and team working. Experts agreed with the statements and score. They suggested changing the form of statements and making it easier to be understood. The result of construct validity showed that score in 7 statements in ethics and value around 0.502- 0.835. In second competencies, roles and responsibilities, the score was range 0.472 - 0.863, while in communication, the score was 0.698 - 0.917. Then, in the last competencies, team and team working, the score was 0.443 - 0.867. All scores were bigger than 0.3 ($r \geq 0.3$) meaning that all statements were valid. Furthermore, reliability test showed that the score was 0.839; 0.800; 0.908; 0.801 for ethics and value, roles and responsibilities, communication, team and team working respectively. The tool was reliable to use because the scores were same or higher than 0.8 ($r \geq 0.8$).

Conclusion

It can be seen from the result that the tool is valid and reliable to be implemented. It is suggested for further research to use this tool to assess achievement of students' competencies in IPE.

Friday 10 January 2020, 2.15pm

Aquarius 4, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 8 – POSTGRADUATE EDUCATION

The Utility of CASPer For Residency Selection
Anurag Saxena, Canada

Which Factors Predict Success in the Intercollegiate Membership of The Royal College of Surgeons (MRCS)?
Jennifer Cleland, United Kingdom

Long-Term Effect of a Medical English Course on Communication Abilities of Graduate Medical Students
Olga Amengual, Japan

Curriculum Mapping in Post Graduate Medical Education
Rani Kanthan, Canada

Mileage for Pre-test as a Tool for Accelerating Learning for Anaesthesiology Posting
Nian Chih Hwang, Singapore

Practical Simulation - New Training Method for Anaesthesia Trainees in Vietnam Military Medical University: A Pilot Study
Dang Thu Nguyen, Vietnam

Developing a Toolkit for Tutors to Promote a Sense of Belonging for Online, Distance and Rural Learners at the Module and Programme Levels
Susie Schofield, United Kingdom

Nurturing Humanism in Family Medicine Residents: NUH Family Medicine Nursing Home Module
Marie Stella P Cruz, Singapore

THE UTILITY OF CASPER FOR RESIDENCY SELECTION

Saxena A

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Background and Aims

Residency selection is a challenge for many programme directors due to the scarcity of "objective" information on applicants in the selection process. Standardised test scores only provide insight into an applicant's cognitive capabilities while Dean's Letters and medical student performance evaluations often provide little utility in helping to differentiate between applicants. As the number of residency applications continues to grow each year with a stagnating number of available spots, the problems with residency selection will only compound without intervention. CASPer is an admissions test that has been typically used for undergraduate medical school admissions, which has also made its way into various graduate medical programmes (GME) in Canada and the U.S. It is a more objective assessment of an applicant's non-cognitive attributes such as professionalism, collaboration, and ethics, which complements the cognitive metrics collected during the selection process. In this session, we will examine the various benefits of including CASPer in the residency selection process from an early adopter of CASPer at a Canadian graduate medical programme.

Methods

We conducted a retrospective cohort study to examine any differences in resident performance prior to and after the implementation of CASPer. We examined comparisons between two cohorts of first-year residents (PGY1) after the implementation of CASPer (PGY1 2017: n = 114, PGY1 2018: n = 123) and the two cohorts prior to the implementation of CASPer as the control group (PGY1 2015: n = 113, PGY1 2014: n = 121). Our outcome variable of interest was in the number of remediation issues that were reported to the GME office. We also calculated the potential cost savings by calculating a cost-benefit analysis.

Results

In the control group, there were a total of 12 professionalism concerns identified and reported to the GME office, where 5 required formal intervention. In the CASPer group, there were a total of 3 professionalism concerns that were reported, where 1 required formal intervention. The types of professionalism concerns did not differ between the two groups. In the control group, there were 7 residents who attained low ratings in the intrinsic CanMEDS roles and 5 were placed in modified learning programmes due to their poor performance. One resident took a leave of absence, while another also took a leave of absence following suspension and investigation. In the CASPer group, there were 3 residents who received low ratings on the intrinsic CanMEDS roles where 2 were remediated. The total cost of remediation, leave of absence, suspension/ investigation for the control group across the two years was $130,074.13 CAD. In comparison, the total cost of remediation in the CASPer group was $10,319.41 CAD, which equalled to total savings of $119,754.72 CAD. There is no fee for programmes to adopt CASPer, as the cost is borne by the test-taker.

Conclusion

The results of this study suggest that the inclusion of CASPer in the residency selection process can reduce the number of professionalism concerns among residents and subsequently reduce the cost of remediation.

WHICH FACTORS PREDICT SUCCESS IN THE INTERCOLLEGIATE MEMBERSHIP OF THE ROYAL COLLEGE OF SURGEONS (MRCS)?

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Background and Aims

The Membership of the Royal College of Surgeons examination (MRCS, Parts A and B) is one of the largest postgraduate surgical exams in the world, with over 6000 overseas and UK doctors taking it each year. However, little is known about the factors that affect candidate performance. Our aim was to describe the relationship between both parts of MRCS and several independent predictors of MRCS success.

Methods

Pearson correlation coefficients were used to examine the linear relationship between MRCS Part A and B and logistic regression analysis to identify potential independent predictors of MRCS success. We included all UK medical graduates who attempted either part of MRCS over a 10-year period (between 2007 and 2016).

Results

7896 candidates made 11867 attempts at Part A and 4310 made 5738 attempts at Part B. A positive correlation was found between Part A and B first attempt score ($r=0.41$, $p<0.001$). Gender (male vs. female, Odds ratio (OR) 2.78, 95% confidence (CI) 1.83 to 4.19), ethnicity (white vs. Black Minority and Ethnic, OR 1.70, 95% CI 1.52 to 1.89), stage of training (e.g. Core Surgical Year 2 trainees vs. Foundation Year 1 doctors, OR 0.50, 95% CI 0.32 to 0.77) and maturity (young vs. mature graduates, OR 2.60, 95% CI 1.81 to 3.63) were all found to be independent predictors of Part A success. In addition to ethnicity and stage of training, Part A performance (number of attempts and score) was also identified as an independent predictor for Part B. The odds of passing each part of the MRCS decreased by 14% (OR 0.86, 95% CI 0.80 to 0.92) for Part A and 30% for Part B (OR 0.70, 95% CI 0.61 to 0.81) with each additional attempt that was made.

Conclusion

Several independent predictors of MRCS success were identified, but only ethnicity and stage of training were found to be common predictors of both Part A and B. Next steps in this programme of research include exploring the factors which predict success in overseas doctors taking the MRCS.

LONG-TERM EFFECT OF A MEDICAL ENGLISH COURSE ON COMMUNICATION ABILITIES OF GRADUATE MEDICAL STUDENTS

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Background and Aims

Communicative competence and effective information handling are essential in medicine, and English is an important instrument of communication. Learning and practicing English have become a major part of the educational programmes at medical schools in Japan. We have previously reported that the incorporation in graduate medical education of a specifically designed 1-year medical English course (MEC) facilitated the students to communicate more effectively (Amengual O et al, 2017). However, there is a need to assess the long-term effect of the MEC in the graduate students' communication achievements. In this study, we aimed to analyse the long-term impact of a MEC on communication proficiency in Japanese graduate students.

Methods

This prospective research included Japanese graduate students that joined the doctoral programme at the Department of Rheumatology, Endocrinology and Nephrology at the Graduate School of Medicine, Hokkaido University. The students who attended a compulsory MEC during 3 consecutive years were included in the study. The methodology consisted of the completion of 1) a research questionnaire, and 2) a self-assessment report of confidence levels at the study entry, during the follow-up period, and at the end of the 3rd year. The initial research questionnaire recorded the students' baseline English abilities for writing, reading, speaking and listening using 5-point Likert scales. A composite Liker-score calculated from data of the four variables was defined. The self-assessment report comprised of visual analogue scales (VAS) to assess the self-confidence levels to ask questions, answer questions and make discussion in English. VAS are numerical rating scales consisted of a straight horizontal line with the ends orientated from 0 to 100. For each communicative task, yearly improvement ratios (YIR) at 1st, 2nd and 3rd year were calculated by subtracting the median VAS score at the entry in the study from the median VAS score at the end of 1st, 2nd and 3rd year, respectively.

Results

Twenty-six graduate students attended the MEC during three consecutive years (5 females: 21 males; mean age: 26 years, range [30-38]). Self-confidence levels to perform communicative tasks were expressed as median VAS scores [Q25-Q75]. Initial self-confidence levels to ask questions (10[1-22.5]), to answer questions (10[0-16.25]) and to make discussion in English (12.5[0-20]) significantly improved after 3 years MEC attendance as follows: to ask questions (50[37.5-60]), to answer question (45[27.5-60]), and to make discussion (50[40-70]), all $p < 0.0001$. There was a progressive improvement in the students' self-confidence to perform each communicative task as shown by the YIR (at 1st, 2nd, and 3rd years) to ask questions (20, 30, 39), to answer questions (0, 20, 34) and to make discussion (17.5, 27, 40). A subgroup analysis revealed that participants with higher composite Likert score at baseline (≥10) had greater improvements in communication self-confidence after 3 years.

Conclusion

Long-term English education contributes to enhancing graduate students' communication abilities. Development of English communication skills at early stages in education has a positive effect on communication proficiency in graduate students.

Reference

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CURRICULUM MAPPING IN POST GRADUATE MEDICAL EDUCATION

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Background and Aims

Curriculum mapping is a process of indexing a curriculum to identify and address academic gaps, needs, and assessment methods. This is used widely in the kindergarten to high school and undergraduate university programmes. Reports of its usage in medical education are limited. In post graduate medical education in Canada with the implementation of Competency by Design, residency curricular programmes are now rather prescriptive with reports, tasks and assessment of resident learners as acquisition of Entrustable Professional Activities (EPAs) related to the various phases of their training. In this context we propose that curriculum mapping may be a useful tool that can help towards successful implementation of these new programmes.

Methods

On 1 July 2019 we have implemented the CBD program in General Pathology at our institution. Prior to this, as part of the pre implementation work-up our program's CBD implementation team attended a curriculum mapping workshop organised by the local Postgraduate-Medical-Education office. We were introduced to the concept of curriculum mapping and then were engaged in hands on exercise of curricular mapping in relation to how and where EPAs in general pathology were both assessed and taught. The CBD team reviewed the map with an Educational Consultant and discussed academic gaps and needs for modification.

Results

The introduction of curricular mapping process highlighted how the specific language of EPAs often dictates how and where specific EPAs should be assessed and/or taught. This led to many changes in the organisation of the programme from its previous format to accommodate these prescriptive EPA requirements. This task also highlighted gaps in our current existing programme including lack of explicitly teaching and /or evaluation of certain prescribed EPAs. We used the curriculum map to develop and incorporate rotations with targeted training experiences as needed for the incoming new batch of residents to achieve these EPA's. Minimal structural adjustments were undertaken to incorporate a variety of timely EPA assessments. At the end of 6 months, a review of the current curriculum mapping will be undertaken to check the progress and identify gaps for rectification.

Conclusion

Curriculum mapping is an effective tool that helped incorporate CBD specifications of EPA's/assessment into our current residency programme. It facilitated the establishment of a teaching plan to address the curricular gaps for EPA's as outlined by the Royal College. This was of great benefit prior to the implementation of the programme and avoided scrambling at the last minute. It is a work in progress and hopes to track residents achieve their competencies at designated levels. The 6-month review that will be conducted in December 2019 will hopefully validate and provide continued insight for the usefulness of this tool in the implementation of the new CBD residency programmes in postgraduate medical education in Canada.

MILEAGE FOR PRE-TEST AS A TOOL FOR ACCELERATING LEARNING FOR ANAESTHESIOLOGY POSTING

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Background and Aims

Since 2012-13 Duke-NUS Medical Students had a 9-day Integrated Anaesthesiology Programme (IAP) during Academic Year 2. From academic year 2015-2016, a formative pre-test was introduced as an assessment of learning and for learning. The pre-test was conducted as the first activity of the IAP.

This study evaluates the effectiveness of pre-test on learning outcomes for the students.

Methods

The same preparatory reading material and voice-annotated PowerPoint presentation were provided prior to and after the year of introduction of pre-test. Pre-test consisted of 36 single best answer (SBA) multiple-choice questions (MCQs). After the pre-test, a facilitated discussion of the answers followed. The students were aware that the scores will not be included in the IAP grade. During the IAP, each student received two Continuing Assessments (CAs) of their competencies. The end-of-module assessment (EOMA) consisted of 17 SBA MCQs. The MCQs covered essential core knowledge and have remained the same though the years. The mean (standard deviation, SD) scores for CAs and EOMA between the cohort of students who never had pre-test (Without) and the cohort of students who had (With) were compared. All scores are expressed in percentages. Paired t-test was applied for analysis and statistical significance for any observed difference was set at $P < 0.05$.

Results

The mean (SD) scores for CAs were higher for the cohort with pre-test: 71.2% (8.7) versus 75.1% (9.3), $P < 0.01$, for group Without and group With, respectively. The mean (SD) scores for EOMAs were also higher for the cohort with pre-test: 82.8% (9.1) versus 86.0% (5.6), $P < 0.05$, for group Without and group With, respectively. The mean (SD) score for pre-test is 68.2% (9.2).

Conclusion

It appears the having a pre-test as feedback tool helped the students identify their knowledge gap prior to the clinical posting and influenced their performance as learners during the IAP.

PRACTICAL SIMULATION - NEW TRAINING METHOD FOR ANESTHESIA TRAINEES IN VIETNAM MILITARY MEDICAL UNIVERSITY: A PILOT STUDY

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Background and Aims

Practical skills of anaesthesiologists play a vital role in emergency care for critically ill patients. Therefore, enhancement of quality of practical training for anaesthesia trainees is an imperative requirement of medical education, particularly in Vietnam Military Medical University (VMMU). In Vietnam, the traditional method of clinical training in which students are instructed directly on real patients is gradually abandoned due to some ethical issues and higher requirement in quality of treatment. The development of simulation technology in VMMU has given our students opportunities to get accustomed to making clinical decisions and practical skills in various hypothetical scenarios before being trained on real patients. The refinement of traditional clinical training with support of simulation technology may improve quality of practical training for anaesthesia trainees. Therefore, this study aimed to evaluate the efficacy of a new approach combining traditional methods and simulation technology in practical training for anaesthesia trainees in VMMU.

Methods

This was a prospective study comparing two practical training methods applied for two groups postgraduate trainees in anaesthesia in VMMU. Group I including 28 anaesthesia trainees of the 2015-2017 postgraduate courses received the traditional method. Group II including 26 anaesthesia trainees of the 2017-2019 postgraduate courses received the new approach, which combined simulation and appropriate clinical training.

After 6 months, trainees were evaluated for capability to pre-operatively evaluate patients, indicate appropriate anaesthesia strategies, perform basic and advanced anesthesiological techniques, and accomplishing an anaesthesia case without support. Data were analysed using the software SPSS version 16.0 (SPSS Inc., Chicago, IL, USA).

Results

The success rates of trainees in performing basic anaesthesia techniques in Group II and I were 84.62% and 64.28%, respectively ($p<0.05$). The success rate of implementing advanced anaesthesia skills in Group II was significantly higher than in Group I (34.62% vs. 10.71%, respectively; $p<0.05$). The rates of accurate preoperative evaluation of patients and suitable anaesthesia strategy in Group II were 69.23% and 65.38%, respectively, which seem to be higher than those in Group I (60.71% and 53.57%, respectively) ($p>0.05$). The percentage of trainees who successfully accomplished an anaesthesia case without support in Group II was significantly higher than in Group I (53.85% vs. 42.86%, respectively).

Conclusion

The new training method combining simulation and clinical practice in various circumstances enable anaesthesia trainees to develop better practical skills, including planning anaesthesia strategy, reasoning and making clinical decisions, and performing anaesthesia techniques, that should lead to improvement in quality of treatment in anaesthesia practice.

DEVELOPING A TOOLKIT FOR TUTORS TO PROMOTE A SENSE OF BELONGING FOR ONLINE, DISTANCE AND RURAL LEARNERS AT THE MODULE AND PROGRAMME LEVELS

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Background and Aims

A sense of belonging (SoB) is a recognised and valued concept in education; campus based learners value SoB, stating that it promotes feelings of being cared for and mattering to one or more people in a group who in turn matter to them. There is currently a continuing interest in online learning, with an attendant increase in numbers. Online learning can provide a flexible learning space, allowing students access to educational opportunities whilst continuing to fulfil their various professional and familial responsibilities. Indeed, it is increasingly used for faculty development, where it has been used for a diverse range of topics, from clinical teaching to research skills.

Many accredited courses such as the Masters in Medical Education from Dundee's Centre for Medical Education offer a fully online modality. Sethi et al. (2018) identified online distance programmes impacting successful students positively in many areas, including an increased SoB to a community of practice. However, for many learners, the online space may be isolating, alien, even threatening, resulting in higher attrition rates and lower than expected student attainment compared with campus-based programmes. Limited research has addressed the nature and origins of a SoB for our online learners, and its impact, or not, on their learning. We believe that it is highly desirable in any online programme for learners to develop a SoB and we concur with Thomas et al. (2014) in their suggestion that strategies which foster learners' SoB could enhance online learners' educational experiences and improve retention.

This paper describes the development of a tool kit to help creators and deliverers of online courses develop and nurture a SoB in their students. Following a project planning workshop in October 2018, six sections were scoped: introduction; literature review; toolbox for tutors; case studies exemplifying good practice; tool for faculty development; videos of tutors and students talking about SoB.

Methods

An action research approach was taken. The initial toolkit developed from the literature was evaluated at workshops and through individual written feedback from experienced online tutors. The resulting toolkit was developed as an Open Learn Create, a Moodle based resource. Cards were developed for Curriculum Design workshops using the ViewPoint methodology.

Results

The toolkit evolved into 'layers' with suggested activities for before the module starts, starting the module, continuing the module, closing the module and assessment. Feedback was overall positive, with emphasis on the use of plain language and clear real-life examples given for each tool.

Conclusion

Given the backdrop of busy healthcare and education workplaces as well as other pressures, expecting students to have SoB within a course may be seen as a luxury. However, the literature shows this is an important element for progression and success. Feedback from experienced online tutors indicated the need for clear language and good examples. The next stage is to evaluate the completed toolkit, including the effectiveness of the different tools included.

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NURTURING HUMANISM IN FAMILY MEDICINE RESIDENTS: NUH FAMILY MEDICINE NURSING HOME MODULE

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Background and Aims

Aged care is a growing area of need and interest in Singapore's aging population. Whilst residents and medical students experience rigorous training in clinical skills to diagnose and manage disease, there is an increasing awareness for the need to nurture the humanistic qualities of residents and impart the importance of person-centred care. This is particularly crucial in family medicine where family physicians are required to manage a huge diversity of patients in various settings.

Methods

We present a model of training family medicine residents to develop person-centred attitudes and for holistic longitudinal person-centred care through a local family medicine residency programme. Family medicine residents undergo a two-year longitudinal module in aged care based in Bethany Nursing Home under the tutelage of an NUH Family Medicine faculty. Residents attend regular sessions on conditions and issues relevant to the institutionalised care of the frail elderly. Each resident is matched to 1 male patient and 1 female patient, and is allowed time to get to know their patients in a holistic manner and encouraged to develop the patient-doctor relationship. Residents then reflect upon their patients' journeys through case presentations and write-up at the end of the module.

Results

Through both formal and informal feedback routes, residents have expressed being inspired by how the teaching faculty advocate for nursing home patients through her care for them. Faculty also role model humanism in the way they interact with patients and nursing home staff. Through the sharing of real life stories and journey of each patient by the faculty and using real life case anecdotes to give residents a glimpse of the human encounters in the nursing home, residents are encouraged to think of 'patients' as 'persons', mitigating the temptation for dehumanisation particularly when patients are unable to express themselves.

Conclusion

Humanism and compassion form the heart and art of medicine. However, these are attitudes and values that are not easily measured and taught. This model demonstrates how humanistic attitudes are nurtured in family medicine residents through encouraging residents to develop a patient-doctor relationship with their assigned patients and also through the values role-modelled by faculty. There is much room for exploring the human aspect of physicians and residents rendering care in a health care context and this model shows how humanistic values are inspired and not only taught.

Friday 10 January 2020, 2.15pm

Gemini 1, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 9 – INTERPROFESSIONAL EDUCATION/ VALUES

Undergraduate Nursing Students' Perception of Empathy Towards Patients: A Qualitative Study
Qing Xia, Melissa Chan, Singapore

Interprofessional Education in a Simulation Session With Medical Students: Nursing Students' Perspective
Siew Tiang Lau, Singapore

A Teaching Model of Blended Learning on Social Accountability – Maximise Learning With EADR Model (E-learning, Attachment, Debrief and Reflection)
Carmen Wong, Hong Kong S.A.R.

Medical Student Perceptions of Online Professionalism and Identification of Areas for Educational Interventions
Aileen Patterson, Ireland

Learning Professionalism and Ethics in a Large Class Using Team-Based Learning
Emmanuel Tan, Singapore

Burnout Among Pediatric Trainees in Indonesia: A National Survey
Annang Giri Moelyo, Indonesia

Development of a Tool for Assessing Pharmacists' Professional Behaviours
Huda Dubbai, Australia

Assessment of Medical Professionalism: Qualitative and Delphi Study
Warren Fong, Singapore

UNDERGRADUATE NURSING STUDENTS' PERCEPTION OF EMPATHY TOWARDS PATIENTS: A QUALITATIVE STUDY

Chan QXM, Chow YL

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Background and Aims

Empathy has been increasingly recognised to play a vital role in establishing and maintaining a therapeutic relationship with patients. It encourages patients to disclose personal health struggles, allowing nurses to become better advocates and improves patients' health outcomes. However, multiple researches have highlighted that majority of undergraduate nursing students (UNS) still struggle to engage patients empathetically despite having undergone the nursing curricula which should have instilled empathy in them.

Hence, this paper aims to explore UNS' perception and learning of empathy towards patients.

Methods

A descriptive qualitative design was adopted for this study, considering that empathy is often an ambiguous concept to be grasped and holds different meanings for healthcare professionals. Twenty Year 4, non-direct intake UNS were recruited using purposive sampling. Semi-structured, individual, face-to-face interviews were conducted and audio-recorded. Transcribed verbatim was done, coded and analysed using thematic analysis by Braun and Clarke. Rigor of study was ensured using various techniques, such as member checking, the use of audit trail, code-recode strategy, use of reflexibility and providing thick description of data collected.

Results

Five themes were presented- "Textbook Definitions of Empathy", "Heart of Empathy, Translated into Practice", "The Laying Foundations of Empathy", "Potential Building Blocks of Empathy" and "Constraints to Empathy Development". Most UNS attempted to explain their own perceived definitions of empathy, anchoring primarily on the significance of effective communication. Whereas others had clear misconceptions with sympathy, which affected their clinical interactions with patients during attachments. Students learnt to empathise based on their upbringing and influence of social interaction, which others perceived it as innate. Facilitators to learning empathy include patient and family interaction, looking up to role models in nursing, didactic teachings and the use of simulations. Barriers to learning and expressing empathy included negative ward environment and attitudes.

Conclusion

The study presented UNS' varied perceptions of empathy and highlighted the various areas in nursing curriculum and within clinical settings that have either facilitated or hindered their learning of empathy towards patients. Findings reveal the need for a shift in pedagogy from didactic teachings to experiential learning in facilitating the learning and development of empathy. A longitudinal mentorship programme can be considered, as highlighted by multiple UNS. Furthermore, researchers can continue to evaluate the effectiveness of Entrustable Professional Activity considering that it is a new nursing approach especially in the local setting.

INTERPROFESSIONAL EDCUATION IN A SIMULATION SESSION WITH MEDICAL STUDENTS: NURSING STUDENTS' PERSPECTIVE

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Background and Aims

Interprofessional education provides an opportunity for students from different schools to synthesise concepts and expand their perspectives to improve learning outcomes in a different approach. Therefore, this study aims to examine how nursing students perceive the benefits of interprofessional education with medical students in a two-hour simulation session.

Methods

A survey targeting on communication, prioritisation, planning and skill practicing was conducted alongside with open-ended questions on the nursing students' perspectives after the session. The two-hour session was conducted in a simulation ward setting in November 2018. A total of 289 year one medical students and 262 year one nursing students were regrouped and scheduled into 45 classes of approximate twelve students each to manage four patients, of which, three were standardised patients and one was a high-fidelity mannequin.

Results

187 (71%) nursing students responded to the survey and collectively, 66.1% of the nursing students felt that the interprofessional education had benefitted them in terms of their skill practices and 66.5% of them felt that it benefitted their prioritisation and planning of patient care. Only 41.9% of the nursing students felt that interprofessional education had benefitted them in terms of communication with medical students.

Conclusion

While the overall evaluation of the interprofessional education conducted in a simulation session was good, some students remained unconvinced. One of the reasons students were not benefiting from the simulation session with the medical students was due to their lack of understanding of nursing knowledge, resulting in low confidence in communicating with the medical students. To improve the students' receptiveness towards interprofessional education in a simulation session, more research is needed to explore the communication barrier between nursing and medical students. The interprofessional education for both nursing and medical students were beneficial in enhancing on their appreciation in prioritising and planning of patient care.

A TEACHING MODEL OF BLENDED LEARNING ON SOCIAL ACCOUNTABILITY - MAXIMISE LEARNING WITH EADR MODEL (E-LEARNING, ATTACHMENT, DEBRIEF AND REFLECTION)

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Background and Aims

The World Health Organisation (1995) emphasised social accountability and the role of medical schools to direct their education towards addressing the priority health concerns of the community, region and nation they serve. Meanwhile, use of technology and e-learning has helped pedagogical development e.g. flipped classroom. With enlarging class sizes, we describe a blended teaching model which maximises learning from limited exposure to community attachments and enhances student's autonomy in learning.

Methods

A blended teaching model was used consisting of 4 components: 1. E-learning platform, 2. Community and NGO attachments, 3. Debrief, 4. Reflective Essay. The E-learning platform had 2 core short modules (a) Health Inequalities, (b) Health Needs Analysis and 8 optional modules ranging from poverty and deprivation, foreign domestic workers, offender health and health and stigma. All of which they had to complete pre and post-questionnaires. Students, in pairs attended community attachments of their choice e.g. alcoholic anonymous, prisons, homeless etc. A debrief session was held for 60-90 minutes and the students were expected to write an individual reflective essay selecting a framework of their choice which helped them reflect on the target population or the organisation.

Results

In total 229 students went through the teaching model in the academic year in 4 modules of 56-58 students. Student spent on average 3.24 to 3.42 online completing the material. In the survey of the last two modules (77/115 response rate 67%) showed an increased in pre-test quiz score from a range of 22.2% to 66.7% which increased 86% to 100%. Modules which were most interesting to students were in health and stigma (49.4%), health Inequalities (41.6%) and ethnic minorities (32.5%). Students valued the option to choose their own modules and felt the material was well organised and helped them understand about health and social issues in the community. The debrief helped the students share their experiences and learning. Many students admitted that they did not think they had learnt much until the sharing and essay writing. Per module, one tutor used 60-90 minutes to facilitate the debrief and each pair of students spent a 3 hour session on the attachment. Reflective essays showed enhanced reflection on their professional role in the community.

Conclusion

This teaching model can be similarly utilised in other teaching to maximise learning bringing the individual experiential learning into a group shared experience for deeper discussion and reflection.

MEDICAL STUDENT PERCEPTIONS OF ONLINE PROFESSIONALISM AND IDENTIFICATION OF AREAS FOR EDUCATIONAL INTERVENTIONS

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Background and Aims

Extension of the principles of professionalism to online behaviour for medical students has resulted in the production of guidelines to inform behaviour in many jurisdictions. This study aimed to examine medical student pattern of social media usage, to develop a valid scenario based instrument to gauge medical student perception of appropriate online behaviour as it pertains to professionalism and their awareness of medical council guidelines. Results were analysed statistically to consider differences in perceptions based on entry route, year of study, gender and age. Results were used to identify areas that would be useful for future educational interventions and examine changes to student behaviour.

Methods

A survey was designed by the investigators and medical students, reviewed by a focus group of class Facebook Administrators and amended accordingly. Students rated their perceptions of appropriateness of posts illustrated with scenarios. Student perception of appropriate/ inappropriate behaviour was measured on a 5-point Likert scale. The scenarios included a range of behaviour including illegal, unprofessional behaviour and purposefully ambiguous posts. Open questions were used to examine student awareness of discriminatory language and the regulatory body guidelines. Statistical analysis was carried out using descriptive statistics and Pearson's chi-squared test (χ^2) to determine if there were statistically significant differences between respondent groups in their use of Facebook and the perception of the appropriateness of the scenarios.

All students in the medicine programme were emailed the survey. The findings were presented and discussed with years 2-4 of the programme at the beginning of the next academic year. A short follow up survey was distributed to measure scenario validity, student online behaviour since the initial study and whether further interventions would be welcomed. Ethical approval was granted by the local research ethics committee.

Results

Results showed 96% of students have online profiles, with the majority using social media several times per day. The majority of respondents rated venting posts, friending patients, extreme intoxication and illegal substances as inappropriate, however, over 10% are unsure about the appropriateness of these behaviours for medical students. 20- 30% of students rated the use of profanity, intoxication references, images of kissing and nudity as debatable behaviour for students, these behaviours were considered more inappropriate by students in the early years of the programme. There were gaps in confidence of understanding of regulatory body guidelines, discriminatory language and where to access relevant information.

Statistically significant differences regarding student perception of scenarios were evident for entry route, year of study, age and gender. This may indicate the need for a tailored educational approach relative to student professional formation stage.

Analysis of the follow up survey showed 80% of students rated the scenarios as somewhat to very typical, with 70% agreeing it was a useful mechanism to discuss behaviour and 24% rating it as a possibility. Students reported changes in behaviour since participating in the study, however only 12% searched for information regarding regulatory body guidelines.

Conclusion

This study shows the need for educational opportunities for students to explore personal, peer and professional body views regarding online behaviour.

LEARNING PROFESSIONALISM AND ETHICS IN A LARGE CLASS USING TEAM-BASED LEARNING

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Background and Aims

Professionalism and ethical behaviour are cornerstones of the medical profession, however they are rarely taught formally within the medical curriculum. It is generally believed that the installation of these crucial competencies happens passively by observing mentors and teachers during clinical rotations. Whilst it is acknowledged that students need to be exposed to professionalism and ethics throughout the entire medical curriculum, there is no consensus on how it is best integrated and delivered.

At LKCMedicine professionalism and ethics, and their application to law, leadership and patient safety, is taught as an integrated course throughout the five-year MBBS programme. This course is called PELLS and has 32 hours of dedicated teaching time in each of the five years. In the preclinical years, PELLS is taught in a large class of over 100 students using team-based learning (TBL) as this allows students the opportunity to discuss complex clinical cases and be confronted with diverse opinions in their teams. This study aims to investigate the effectiveness of TBL in teaching professionalism and ethics in an undergraduate medical curriculum.

Methods

The study reviewed course evaluation data collected from preclinical years 1 and 2 students over three years (2016, 2017 and 2018). The study further applies the Kirkpatrick evaluation model and a modified Miller's Pyramid framework to analyse the qualitative data of the PELLS programme.

Results

The study analysed 95 students' course evaluation reports. Results revealed that students were satisfied with their PELLS TBL experience. Students rated their overall satisfaction with the TBL Learning experiences on a 5 point-Likert scale. For the years 2016, 2017 and 2018, year 1 students rated that they were satisfied with PELLS TBL "most of the time", with an average score of 4.18, 4.10, and 4.02 respectively. The year 2 students were satisfied "about half the time" with an average score of 3.63, 3.90 and 3.80. The students' qualitative responses revealed that students enjoyed (Kirkpatrick level 1) learning PELLS in TBL. They find the discussion of authentic examples with content experts useful for their learning (possibly reflecting Kirkpatrick level 2). The students' feedback revealed that they gained knowledge (Miller's Knows) and hinted at an appreciation of the deeper issues (Miller's Knows How) related to PELLS.

Conclusion

The teaching of professionalism, ethics and its related topics are essential. TBL could be a useful teaching strategy to teach these skills in the large class setting. The facilitated discussion in TBL may also be useful in helping preclinical medical students to acquire the necessary competencies and expected professional standards for their future practice as a medical doctor.

BURNOUT AMONG PEDIATRIC TRAINEES IN INDONESIA: A NATIONAL SURVEY

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Background and Aims

The workload and environment during paediatric training programme may lead to exhaustion and disengagement of the trainees. Nevertheless, this has not been evaluated in Indonesia. The aim of this study was to assess burnout and the associated factors among paediatric trainees in Indonesia.

Methods

We conducted a national online survey from June to August 2019, involving all (15) paediatric training institutions in Indonesia. A General Oldenburg Burnout Inventory (OLBI) was translated (through forward and backward method) to Bahasa-Indonesia by 2 certified language translators. The OLBI comprised of 16 questions which assessed exhaustion (8 questions) and disengagement (8 questions). The responses used a 4-point Likert scale (1-4; 1 strongly disagree, 2 disagree, 3 agree, and 4 strongly agree for negative statement; and 1 strongly agree, 2 agree, 3 disagree, and 4 strongly disagree for positive statement). Exhaustion and disengagement were classified using SD score as vigour/dedicated (<=0 SD); mild (>0 - +1 SD); moderate (>+1 - +2 SD); and severe (>+2 SD). The translated questionnaire was distributed to all paediatric training institutions in Indonesia. Inclusion criteria were all ongoing paediatric residents and filled all questionnaire items completely. Subjects filled the questionnaire more than once were excluded. Cronbach's alpha was used to test reliability. Ordinal regressions were performed to assess risk factors (age, marital, sex, resident stage of training, and university) for exhaustion and disengagement.

Results

A total of 841 paediatric trainees from 15 institutions in Indonesia completed the survey (response rate 71.2%). The proportion of female were higher than male (72.1% vs 27.9%), with mean age of 31.2±2.9 (range 23-44 years). The Cronbach's α was 0.74. The mean exhaustion and disengagement scores were 2.58±0.23 and 2.51±0.23, respectively. The proportion of vigour, mild, moderate and severe exhaustion were 48.3%; 42.0%; 9.0%; and 0.7%, respectively. The proportion of dedicated, mild, moderate and severe disengagement were 36.9%; 46.5%; 14.5%; and 2.1%, respectively. Paediatric trainee's stage of training, after adjusted to age, sex and university, was significantly a risk factor for exhaustion [odd ratio 1.47 (95%CI; 1.22-1.76)]. University was significantly a risk factor for disengagement [odd ratio 1.033 (95%CI; 1.004-1.064).

Conclusion

The majority of paediatric trainees in Indonesia felt exhausted and disengaged during their residency. The risk for exhaustion was paediatric trainee's stage of training. The risk for disengagement was university/institution.

DEVELOPMENT OF A TOOL FOR ASSESSING PHARMACISTS' PROFESSIONAL BEHAVIOURS

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Background and Aims

The objective of this study was to develop and validate a practical instrument to measure professional behaviours among practising pharmacists working in community pharmacies.

Professional behaviour is crucial in everyday practice as pharmacists are expected to demonstrate qualities such as politeness, respect and courtesy in dealing with patients and others. Quality measurement of such behaviours is essential to assess any behavioural improvement. Previous instruments focus on measuring elements of professional behaviour among students, rather than pharmacists. It is crucial to develop and validate a tool for measuring pharmacists' professional performance in the workplace. Such a tool can be used for effectively assessing pharmacist's professional behaviour and foster their professional growth.

Methods

An expert panel reviewed a list of items extracted from previously published tools and via an iterative process reached an agreement as to which items were to be included in the new tool, with appropriate adjustments. The instrument was pretested for refinement and then applied to 384 community pharmacies in Sydney. The tool was a self-report of junior pharmacists to provide details about their early career performance. Exploratory Factor Analysis was used to identify the underlying factors of the PPBS-S followed by Confirmatory Factor Analysis to estimate the model construct and fit.

Results

For the instrument, a clear factors structure was identified. The PPBS-S, related to four factors: "interaction", "content of communication", "establishing professional status" and "process of communication", confirmed with permissible fit to the data (CFI = 0.914, TLI = 0.889, and RMSEA = 0.076). Composite reliability for the four extracted factors were F1 = 0.71, F2 = 0.798, F3 = 0.701, and F4 = 0.775.

Conclusion

An instrument called PPBS-S was developed and it shows acceptable validity and reliability. Internal validity obtained with the factor analysis reveals that professional behaviour items are an acceptable fit with each of the factors. Construct validity was suggested as the PPBS-S is based on previous pharmaceutical literature, as well as input from the panel of experts. The tool can be used to measure of professionalism by the pharmacists themselves as well as in research and will therefore contribute to improved quality of pharmaceutical care.

ASSESSMENT OF MEDICAL PROFESSIONALISM: QUALITATIVE AND DELPHI STUDY

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Background and Aims

Medical professionalism is an Accreditation Council for Graduate Medical Education core competency that is mandated to be assessed. Assessment tools developed to assess medical professionalism have largely been validated in Western cohorts and not culturally-adapted for use in Singapore. Based on Hofstede's (2001) cultural dimension theory and Schwartz's (1999) cultural value theory, geographical differences in professional values and attributes could affect our use of assessment tools not culturally-adapted for Singapore. Our systematic review had identified the Professional Mini Evaluation Exercise (P-MEX) as a potential tool to assess medical professionalism. Developed in Canada, P-MEX consists of 21 items grouped into 4 domains (Doctor-patient relationship skills, Reflective skills, Time management and Inter-professional relationship skills). We aimed to describe the views of both patients and faculty on medical professionalism and gain consensus among experts on the items relevant for assessing medical professionalism locally, thus developing a culturally-adapted tool to assess medical professionalism.

Methods

We conducted two studies- (1) qualitative study to describe the views of patients/ faculty on medical professionalism and (2) Delphi study to gain consensus among experts on subdomains relevant for assessing medical professionalism. Focus group discussions (FGDs) with patients and in-depth interviews (IDIs) with faculty were conducted until saturation. IDIs and FGDs were audio-recorded and transcribed verbatim. Thematic data analysis was conducted by two independent coders using original domains in P-MEX as a priori coding template. New subdomains were identified through an inductive approach.

A two-round Delphi survey was completed by an expert panel of programme directors from different residency programmes (n=15). Round one comprised of 21 subdomains (original P-MEX) with an additional two new subdomains (qualitative study), rated on a 5-point scale (1= Definitely include, 2= Possibly include, 3= Neutral, 4= Possibly exclude, 5= Definitely exclude). In round two, the experts received feedback from round one, and were asked to re-rate the subdomains which did not achieve consensus. The threshold for consensus in the study was pre-specified as 70% or greater agreement among the experts.

Results

Thirty-one patients [58% male, median age 32 (range 22-75)] participated in six FGDs. Twenty-six faculty members [42% male, median age 42 (range 26-76)] participated in the IDIs. The results supported the four domains of medical professionalism - Doctor-patient relationship skills, Reflective skills, Time management and Inter-professional relationship skills. Two new subdomains emerged -(1) communicated effectively with patient and (2) demonstrated collegiality.

For the two-round Delphi, completed questionnaires were received from all 15 participants [67% male, median age 45 (range 37-66)]. In round one, 18 subdomains (78%) achieved consensus for inclusion (agreement ranged from 73%-100%). In round two, of the remaining five subdomains, one (4%) achieved consensus for inclusion (agreement 93%) whilst the remaining 4 items "Extended his/herself to meet patient needs", "Advocated on behalf of a patient", "Solicited feedback", "Used health resources appropriately" did not achieve consensus for removal (agreement were 33%, 60%, 27% and 50% respectively).

Conclusion

This study provides the framework for a culturally-adapted tool for assessment of medical professionalism consisting of subdomains which are important to patients and faculty in Singapore.

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Friday 10 January 2020, 2.15pm

Gemini 2, Level 1, Resorts World Convention Centre

FREE COMMUNICATIONS 10 – GENERAL EDUCATION 3

Student-Facilitated Mentee Training Programme
Wei Qiang Lim, Singapore

Online Team-Based Learning ("TBL") for Active and Collaborative Faculty Development Workshops
Brian O'dwyer, Singapore

Survey on Undergraduates Attitudes Towards Bilingual Teaching of Traditional Chinese Medicine at Peking Union Medical College
Yuanlin Piao, China

Dental Students' Learning Attitudes and Perceptions of YouTube as a Lecture Video Hosting Platform in a Flipped Classroom in Korea
A Ra Cho, South Korea

Beyond Academic Excellence in Medicine: The Impact of Ability-Based Emotional Intelligence Testing on Academic and Clinical Performance
Cindy Jones, Australia

A Scoping Review of Adaptive Expertise in Education
Joanne Kua, Singapore

Preparing the Medical Educators of Today for the Medical Schools of Tomorrow
Mairi Scott, United Kingdom

Correlation Between Work Attitude and Burn-Out Syndrome Among Paediatric Residency Training at M. Djamil Teaching Hospital
Finny Fitry Yani, Indonesia

STUDENT-FACILITATED MENTEE TRAINING PROGRAMME

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Background and Aims

In Palliative Medicine Initiative mentorship programme, students who demonstrate potential for leadership are groomed to become peer mentors and to take on leadership roles. As part of leadership skill develop and peer mentor training, a student-led mentee training workshop was designed and carried out under the close supervision of the PMI faculty mentors. This paper outlines the pilot workshop and provides recommendations for future iterations.

Methods

A pilot workshop was conducted for students who joined the PMI mentoring programme. Under the guidance of the PMI faculty mentors, the student mentors designed didactic teaching sessions and training material for the workshop. Topics covered in the workshop include briefing of the mentoring process, the role and expectation of mentees, how to develop a research question, process of conducting a systematic review, creating and conducting literature searches. The overall process was supervised and guided by the faculty mentors and feedback and advice to the student mentors were given at regular intervals. At the end of the workshop, workshop participants submitted their feedback via an online survey. Feedback was also collected in the form of one to one interviews with peer mentors who conducted the programme.

Results

Three themes were derived from the results of the survey of workshop participants- the value of student facilitated training, the challenges faced by mentees, and the future needs of mentees which can be addressed in future iterations of student facilitated mentee training. Feedback from peer mentors showed that this opportunity to step up helped to develop confident and gave them opportunity to grow and obtain feedback on organisational and presentation skills.

Conclusion

Developing leadership and mentoring skills in students is important part of medical training. Involving students in planning and execution of mentee training workshops under the hands-on supervision of faculty provides them the opportunity to develop teamwork, organisational and communication skills. Close supervision of the students during this process allowed the opportunity for feedback so that students would grow in non-clinical skills which will help them for teamwork and interaction with future colleagues and other professionals.

ONLINE TEAM-BASED LEARNING ("TBL") FOR ACTIVE AND COLLABORATIVE FACULTY DEVELOPMENT WORKSHOPS

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Background and Aims

Increasing numbers of medical schools are switching from lecture-based learning to an active collaborative learning methodology such as team-based learning ("TBL"). One challenge when making such a change is to provide professional development to faculty in the new methodology. Some institutions have the luxury of time and financial resources to send faculty to high profile medical education conferences in places like Europe, Malaysia, Singapore and the United States. However, some educators do not have the time or financial resources to attend such events. This situation can serve to create a faculty development gap between educators with different levels of resource.

The author hypothesised that one potential solution is to provide faculty with professional development using active collaborative learning techniques in an online distance education modality. Such a solution would not be intended to replace in-person faculty development but rather to increase access to faculty development for those that do not have the resources or time to access in-person faculty development.

Methods

In 2018 and 2019, the author organised 16 faculty development workshops using an online synchronous modality and delivered them using the TBL form of active collaborative learning. Participants were surveyed after the workshops and both qualitative and quantitative feedback was analysed.

Results

The workshops were attended by 360 educators from 27 countries on six continents. Over 99% of participants were satisfied, would recommend to others, felt the content was relevant and the format was effective.

Conclusion

The author concludes that is feasible to deliver faculty development using TBL in an online synchronous modality to for educators that are not in the same physical location.

Disclosure

Brian O'Dwyer is the Commercial Founder of and has a financial interest in CognaLearn. CognaLearn is the company that developed InteDashboard™ www.intedashboard.com which is TBL software developed in collaboration with Duke-NUS Medical School. InteDashboard™ is one of the technology tools along with Zoom web conference used to implement the TBL methodology during the workshops.

SURVEY ON UNDERGRADUATES ATTITUDES TOWARDS BILINGUAL TEACHING OF TRADITIONAL CHINESE MEDICINE AT PEKING UNION MEDICAL COLLEGE

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Background and Aims

Bilingual teaching has been increasingly adopted in medical schools in China, it is believed to be an important means to cultivate medical student's skilled access to English literature, broaden their visions and enhance their global competency. Traditional Chinese Medicine (TCM) is a compulsory course for undergraduate programme in China. Many TCM terms are difficult to translate into English. The aim of the survey is to investigate non-native English speaking Chinese medical students' attitudes towards bilingual TCM teaching (BTT).

Methods

During the course of TCM, one teacher gave a 2-hour- lecture teaching in English, then a 2-hour-lecure teaching in half English and half Chinese, the rest of the teachers gave lectures in Chinese. Students participated in anonymous questionnaires at the end of the course.

Results

64 non-native English speaking Chinese medical students of Peking Union Medical College participated in the survey. 35.9% of respondents considered BTT helps stimulate interest in English learning; 56.1% of respondents approved BTT might broaden global visions; 57.8% agreed that BTT benefits professional development; 70.3% of respondents approved BTT has lingual and cultural gaps; 57.8% agreed BTT resulted in the loss of mother tongue information; 40.6% of respondents considered BTT is not beneficial for TCM learning. Neutral and opposite attitudes towards the necessary of BTT accounted for 56.25%.

Conclusion

This survey shows the non-native English speaking Chinese medical students' attitudes towards BTT. The majority of the respondents showed neutral and opposite attitudes towards BTT due to lingual and cultural gaps, and loss of mother tongue information. BTT should be carefully designed with pilot study to benefit non-native English speaking Chinese medical students.

DENTAL STUDENTS' LEARNING ATTITUDES AND PERCEPTIONS OF YOUTUBE AS A LECTURE VIDEO HOSTING PLATFORM IN A FLIPPED CLASSROOM IN KOREA

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Background and Aims

The flipped classroom is a teaching method that promotes the learning of basic concepts through pre-learning and concentrates on in-depth learning activities in class through actual problem-solving and clinical exposure. It is critical to provide a flexible environment that is free from time and space constraints to operate a flipped classroom successfully. With this background, we aimed to confirm the applicability of YouTube as a delivery platform of micro-lecture videos to provide the flexible learning environment that is necessary for the flipped classroom.

Methods

The participants were 69 second-year students of Dankook University College of Dentistry who attended a clinical periodontology course. The periodontology course ran from September 2 to December 16, 2016. The instructor recorded the lecture videos using the Screencast application, which records the content of the presentations and the comments of the lecturer in real-time. The lecture videos were uploaded to YouTube platform before the class. Abstracts of all micro-lectures were also uploaded as PDF files. The links to the YouTube videos and the PDF files were posted together using G Suite for Education. At the end of the second semester, the students were surveyed using the questionnaire to assess the students' learning attitudes and the applicability of YouTube with a rubric.

Results

First, students usually watched the micro-lecture videos using smartphones (69.6%), at their home (95.7%) in the evening after school (75.4%), and they usually watched them alone (98.6%). Second, almost all students came to class after watching the micro-lecture videos (92.7%), and they watched them at a speed within the normal range (range, ×1.0 to ×1.25; 88.4%), without using the skip function (98.6%), despite concerns. Sixty-seven students (97.1%) reported engaging in supplementary learning practices, such as returning to the previous stage after stopping the micro-lecture videos using the pause function of YouTube when they encountered difficulty in understanding while watching the lecture. Third, 57 students preferred the micro-lecture videos because they perceived them to be more helpful for understanding class topics than offline lectures (82.6%), and 73.9% of the students reported that they intended to watch the videos again after graduation. Fourth, 86.9% of the students subscribed to a YouTube channel related to their major, and as many as 58.0% of the students additionally watched the related videos that YouTube recommended, as well as the required micro-lecture videos their professor had uploaded. However, only 20.3% of the students reported having shared a video link with others. Fifth, students stated that the YouTube platform had the advantage of allowing them to watch an enormous amount of data (76.8%) for free (89.9%), and YouTube functions such as VR content, replay, feedback using comments, subtitles, and live streaming helped their understanding.

Conclusion

Our results indicate that YouTube is an applicable platform to deliver video lectures and to expose students to increased learning opportunities.

BEYOND ACADEMIC EXCELLENCE IN MEDICINE: THE IMPACT OF ABILITY-BASED EMOTIONAL INTELLIGENCE TESTING ON ACADEMIC AND CLINICAL PERFORMANCE

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Background and Aims

Over the past decade, admissions committees at various medical schools have sought alternatives to traditional cognitive measures when selecting medical students. With communication skills, empathy, and interpersonal abilities increasingly valued and expected in health care, there has been a shifting focus to consider the emotional intelligence (EI) of applicants. Higher levels of EI have been associated with improved empathy in medical consultations, enhanced doctor-patient relationships and teamwork, improved clinical performance, and greater patient satisfaction. Furthermore, EI has been linked to academic success, social skills, job satisfaction, and improved interpersonal relations. In attempting to reduce emphasis of cognitive measures, Bond University recently incorporated ability-based EI and personality testing in the selection process for the 2018 cohort. The purpose of this study was to explore whether these non-cognitive abilities tested during selection could predict knowledge acquisition and clinical skills in the first and second year of study.

Methods

Applicants who satisfied early screening requirements were invited to complete the MSCEIT and 16PF. Candidates offered a position in the medical programme following the interview stage were tracked during their first and second year of study, with outcomes relating to academic knowledge acquisition and clinical performance obtained for analysis.

Results

Preliminary analyses of Year 1 outcomes revealed that higher EI scores were significantly and positively associated with performance on the Semester 1 patient communication assessment (r = .31). Positive, but non-significant relationships, were observed between total EI and overall performance on the Semester 2 systems-based history taking assessment (r = .11), professional behaviour subdomain (r = .25) and biopsychosocial factors subdomain (r = .22). In terms of personality attributes, a significant inverse relationship was revealed between the 16PF factor 'abstractedness' and overall performance on the Semester 1 patient communication assessment (r = -.29), while a significant positive relationship was observed between the 16PF factor 'apprehension and overall performance on the Semester 2 systems-based history assessment (r = -.19). Previous academic achievement (ATAR score) was not significantly correlated to performance on either clinical assessment in Year 1.

In terms of academic knowledge acquisition in Year 1, previous academic achievement (ATAR score) was significantly and positively correlated with the Semester 1 written exam results (r = .21), but not with the Semester 2 written exam results or the end of year aggregated exam total. Total EI was not significantly associated with any of the academic knowledge acquisition variables. Lower levels of the 16PF factor 'liveliness' were associated with higher scores on the Semester 1 exam and the end of year aggregated total.

Additional analyses pertaining to performance in Year 2 will also be discussed.

Conclusion

Our preliminary findings reveal that pre-admission levels of EI were positively associated with performance in clinical interaction, providing early evidence that valuing these non-cognitive abilities in selection may have benefit.

A SCOPING REVIEW OF ADAPTIVE EXPERTISE IN EDUCATION

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Background and Aims

Experts are recognised for their efficiency in their field of specialty. Adaptive experts are able to possess procedural knowledge and conceptual knowledge to enable them to not just be efficient but also innovative. However not much is known about the research conducted on this topic despite greater interest. Our comprehensive scoping review aims to summarise existing evidence on i) the conceptual framework ii) the development and iii) the measurement of adaptive expertise.

Methods

We searched PubMed, MEDLINE, ERIC, CINAHL and PsyhINFO for English language articles published from the year 1986 onwards to retrieve all original research articles on adaptive expertise. We also performed Google search and hand search of reference lists to obtain a comprehensive list of articles for our review. No quantitative syntheses were conducted given the heterogeneity of the studies. Data from the articles were summarised qualitatively.

Results

Of the 38 articles that met inclusion criteria, 19 examined the conceptual framework of adaptive expertise. 17 explored interventions to help in the development of adaptive expertise and 2 looked at the measurement of adaptive expertise. The conceptual framework of adaptive expertise is consistent within and outside of health professions education. Extrinsic factors include curriculum development that allows for variability of cases and flexibility to generate solutions. Deliberate practices like reflection and participation of scholarly activities also help in one being an adaptive expert. Intrinsic factors that define an adaptive expert include characteristics like high degree of motivation, positive attitude and mind-set, passion for learning, humility, embracing complexity and ability to integrate knowledge. Personality traits include good people skills and excitement about novelty. The “Star Legacy Cycle” has been successfully used to develop adaptive experts but it has not been utilised in health professions education. Finally, there exists only one validated measurement tool for adaptive expertise.

Conclusion

While conceptual frameworks of adaptive expertise has been extensively considered within and beyond health professions education, there exists substantial research opportunities in studying interventions related to the development of adaptive expertise. Notable gaps also exist in the development and validation of measurement tools for adaptive expertise.

PREPARING THE MEDICAL EDUCATORS OF TODAY FOR THE MEDICAL SCHOOLS OF TOMORROW

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Background and Aims

“To improve is to change; to be perfect is to change often.” - Winston S. Churchill

Healthcare today is changing, not only in financial terms but also with increased patient expectations, new technologies and the expansion of multi-disciplinary teams. In response, medical schools and medical educators are rapidly reviewing their existing programmes to develop innovative approaches in undergraduate and speciality training curricula, and national regulators must keep up with the pace and scale of these changes.

Last year, for example the UK General Medical Council published updated Outcomes for Graduates (GMC 2018) designed to help medical schools educate doctors to be ready for the challenges of modern medical practice and required all UK medical schools to have their curriculum fully mapped to these new outcomes by 2020. Whilst this is a necessary step, is it enough to enable real innovation in medical education and physician training?

The medical education community has risen to the challenge with an exciting range of futuristic suggestions - the concept of a 'medical school without walls' (Davis 2018), programmes that embrace design methodology, personalised online learning and assessment delivered by Artificial Intelligence (Hays 2018), focusing medical research on impact rather than the increase in theoretical knowledge and to provide heuristic care (Feufel & Flach 2019) for complex and unpredictable medical problems. (Wilkes 2018).

New schools can be and are being more innovative and accepting of significant risk in 'un-tested' models of delivery, with emerging pilots of shorter programmes allowing more emphasis on community based learning and developing skills in health behaviour change both in patients and communities (Smith 2009). However, for existing schools even to achieve limited deviation from the norm there needs to be both a significant organisational culture shift and a tolerance from the regulators to permit such a shift. Medical educators have a vital role to play in recognising any opportunity to shift the culture though incremental continual improvements that will lead to overall success.

Methods

This presentation will explore new ideas for the future of medical education. It will consider the approaches available to achieve the necessary culture shift which allows different methods of curriculum delivery, a rethink of what is measured in assessment processes, changes in the kind of physician behaviours to be rewarded and give schools and regulators the confidence necessary to enable graduates to create their future in a way that cannot as yet be determined.

Results

At the end of the presentation, medical educators will have identified possible steps applicable to their own institutions for changing the culture of medical education to embrace an emphasis of learning life-long skills rather than one of simply acquiring short term knowledge.

Conclusion

Today's medical schools must fundamentally develop their curricula to produce doctors who are able to work in the ever changing world of healthcare delivery. These developments require a culture shift both for medical schools and regulators and medical educators have a significant leadership role to play in achieving that shift.

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CORRELATION BETWEEN WORK ATTITUDE AND BURN-OUT SYNDROME AMONG PAEDIATRIC RESIDENCY TRAINING AT M. DJAMIL TEACHING HOSPITAL

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Background and Aims

Burnout syndrome is a state of mental and physical exhaustion as a result of continuous and long-term stress exposure at work, including in paediatric residency training. Work attitude test as initial assessment before starting may have correlation with burn-out during residency training. The objective of this study was to evaluate the correlation between work attitude and the presence of burnout in paediatric residency training.

Methods

Paediatric residents from M.Djamil teaching hospital were evaluated on July 2019. The following items were recorded: age, sex, marital status, year of residency and level of residency. Work attitude test was performance by using assessment to motivation, endurance, systematic work and accuracy that classified as adequate and less. This data was taken from resident data record. We used Oldenburg Burnout Inventory (OLBI) questionnaire with validation translation to Bahasa Indonesia to measure burn-out syndrome, that consist of each 8 questions for exhaustion either disengagements.

Results

Response rate were 97.6%, and 4 participants did not complete the questionnaire. Females were 71.2% more than males 28.9%, most of them were > 30 years old (65.8%) and those who were married were 76.3%. Junior, middle and senior levels were 36.8%, 52.6% and 10.5% respectively. About 47.4% (mean 2.6, SD 0.26, 95% CI 2.52+2.69) of them have exhaustion and 55.3% disengagement (mean 2.5, SD 0.24, 95% CI 2.42+2.57). When we analyse based on motivation, endurance, systematic work and accuracy performance, there were no statistically significant correlations between them. Surprisingly, residents with adequate endurance, 55.2% have exhaustion, but less adequate endurance had higher disengagement (66.7%). However, lack of motivation had higher exhaustion (66.7%), but not disengagement (50%), no statistically significance.

Conclusion

There was no correlation between work attitude and burn-out syndrome in paediatric residency training.

Saturday 11 January 2020, 8.15am

Aquarius 2, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 1

Does the MRCS Predict Success at FRCS?
Jennifer Cleland, United Kingdom

Quality Improvement Education in Obstetrics and Gynaecology Residency in Singapore
Joella Ang, Singapore

From Faculty to Peers: A Student-Centred Approach to Sustainable, Well-Rounded Mental Health Support
Sophie Yau, Hong Kong S.A.R.

Understanding Underperformance in Medical Students and Effective Strategies for Remediation
Mao-Meng Tiao, Taiwan

An Initiative to Revamp Traditional Didactic Orientation During Clinical Postings
Zhen Ming Ong, Singapore

Strategies for Teaching and Learning Clinical Reasoning for Medical Students: A Systematic Review
Hongyun Xu, Singapore

DOES THE MRCS PREDICT SUCCESS AT FRCS?

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Background and Aims

The Intercollegiate Membership of the Royal College of Surgeons (MRCS) examination is taken by large numbers of junior doctors as a mandatory step at the beginning of surgical training. Towards the end of surgical training, surgeons-in-training will attempt the Intercollegiate Specialty Board Exit Examination, Fellowship of the Royal College of Surgeons (FRCS). While performance in other mandatory examinations taken at the beginning of a doctor's career are predictive of final training outcomes, the influence early postgraduate surgical examinations (i.e. the MRCS) might have on Specialty Board Exams is currently unknown. We aimed to investigate whether MRCS and other variables are predictive of FRCS success, thus potentially identifying those who may benefit from early academic intervention.

Methods

Pearson correlation coefficients were used to examine the linear relationship between both examinations and logistic regression analysis to identify potential independent predictors of FRCS success. We included all UK medical graduates who attempted either section of FRCS (Section 1 and 2) between 2012 and 2018.

Results

First attempt pass rates for Section 1 and Section 2 FRCS were 87% (n=854) and 92% (n=797) respectively. On logistic regression analysis, gender (male, odds ratio 2.32 [95% confidence interval 1.43-3.76], age (<29 years at graduation, 3.22 [1.88-5.51], Part B MRCS attempts (one attempt, 1.77 [1.08-3.00], Part A score (1.14 [1.09-1.89] and Part B score (1.06 [1.03-1.09] were all found to be independent predictors of Section 1 FRCS success. Predictors of Section 2 FRCS were age (<29 years at graduation, 3.55 [1.88-5.51], Part A score (1.06 [1.02-1.11] and Section 1 FRCS score (1.13 [1.07-1.18].

Performance at Part A and B MRCS were found to be independent predictors of FRCS success, providing further evidence to support the predictive validity of this mandatory postgraduate exam. Next steps in this programme of research include exploring the relationship between performance on the MRCS and the FRCS in overseas doctors taking these examinations.

Conclusion

Performance at Part A and B MRCS were found to be independent predictors of FRCS success, providing further evidence to support the predictive validity of the MRCS, which in the UK at least is a mandatory postgraduate exam for those who wish to pursue surgical training. Next steps in this programme of research include exploring the relationship between performance on the MRCS and the FRCS in overseas doctors taking these examinations.

QUALITY IMPROVEMENT EDUCATION IN OBSTETRICS AND GYNAECOLOGY RESIDENCY IN SINGAPORE

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Background and Aims

Healthcare Quality Improvement (QI) has received increased attention in the last decade as an essential component in medical education. In Singapore, postgraduate medical education underwent a major transition in 2010 from the British style Basic/Advanced Specialist Training Programme overseen by the Joint Commission on Specialist Training (JCST) to the American model of the Residency programme. With the transition to the American model of Residency in Singapore's postgraduate medical education, QI education is now mandated in the curriculum. We describe and evaluate the QI curriculum in the SingHealth Obstetrics and Gynaecology (OBGYN) Residency programme.

Methods

Residents from SingHealth OBGYN Residency undergo a 6-month curriculum. This includes an online module, didactic lectures and workshops. Residents form small groups of 4 to 5 members and gain hands-on experience by conducting their own QI project whilst supervised by faculty members trained in QI. Groups are guided in projection selection, planning and implementation by their supervisors. To complete the project, groups are to present their findings at the Academic Clinical Programme Quality Improvement Day for certification. A review of the projects since the implementation of the curriculum was done. In addition, a survey was undertaken on residents that have exited the programme to assess perceived QI skills and to identify barriers to QI education.

Results

From 2013 - 2017, 57 SingHealth OBGYN residents completed 13 QI projects. To date, the residency has produced six poster presentations at the Singapore Healthcare Management conference in 2015 and 2016. One project, on the use of Antenatal Magnesium Sulphate for Fetal Neuroprotection in Preterm Births was presented at national and international conferences. The project also received the National Team Excellence Gold Award from the Singapore Productivity Association and was also published in a peer reviewed journal.

18 residents have exited the programme and were included in the survey. The majority (92.3%) of these residents were serving in the public sector. The majority of these residents (84.6%) were interested in QI and 69.2% responded that they feel confident to conduct or supervise a QI project. 61.2% of the residents felt that their QI education was adequate and has prepared them for their current work. 3 residents are currently working on a QI project. The most common barrier to QI education was the lack of time and interest.

Conclusion

A combination of didactic lectures and hands-on experiential learning is an effective method to deliver QI education. Integrating QI education into training is challenging but has been facilitated by dedicated time, institutional support and faculty supervision in our programme. The authors feel that recognising QI as a legitimate scholarly activity and as a crucial part of every resident's training helps to improve our QI education. Ultimately, a continuing change in culture and further improvements in residency QI education will promote a safer, high-quality environment for healthcare.

FROM FACULTY TO PEERS: A STUDENT-CENTRED APPROACH TO SUSTAINABLE, WELL-ROUNDED MENTAL HEALTH SUPPORT

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Background and Aims

The high student suicide rate, which increased 76% between 2012 and 2016, has drawn much public attention to students' mental wellbeing. Currently, the Medical Faculty Wellness Team of the Chinese University of Hong Kong (CUHK) provides student counselling services, and student organisations also hold various welfare events to support peers. However, there lacks effective collaboration between the two groups. As CUHK's SMART curriculum promotes 'Student-Centred' education, which encourages student involvement in education development, we believe student-faculty collaborations can tailor effective, approachable and sustainable student wellness events.

Methods

The Asian Medical Students' Association Hong Kong collaborated with the CUHK Medical Faculty Wellness Team to create the Mental Health Project, a month-long campaign designed to promote support of medical students' wellbeing on 3 tiers. On Tier 1, students were given direct support by therapy dogs and Wellness Team counsellors at Dr Dogs' Days. On Tier 2, peer support was encouraged through training 24 medical students to become gatekeepers at a Crisis Negotiation Workshop (CNW). On Tier 3, public support was promoted through the production of 10 online, bite-sized videos addressing the mental health of medical professionals, rectifying misconceptions and providing encouragement.

Results

Over 300 medical students participated in the three Dr Dogs' Days organised at different medical campuses. Results from pre- and post-CNW surveys demonstrate significant increases (all $p<0.05$) in participants' skills, knowledge of crisis management and awareness of mental health in Hong Kong. With a wider audience, the online campaign videos accumulated a total of more than 10,000 views and 111 shares for our videos.

Conclusion

Student-faculty collaboration effectively bridged CUHK Medical Faculty wellness services to students. Students' needs were accurately identified, and student support was monitored by professionals. The three-tiered design established a well-rounded medical student support system. Furthermore, sustainability was ensured as student gatekeepers can provide peer-to-peer mental health support anytime. Public awareness continues as the videos are repeatedly re-shared online to reach greater audiences. The campaign will be organised annually, providing sustainable support for students throughout their years of study.

Our take home message is to accurately address student needs, a sustainable mental wellness campaign requires long-term collaboration between students and faculty.

UNDERSTANDING UNDERPERFORMANCE IN MEDICAL STUDENTS AND EFFECTIVE STRATEGIES FOR REMEDIATION

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Background and Aims

Underperformance in medical students is an important issue. It is ultimately a central factor for patient safety. Understanding why medical students struggle is the first stage to understanding how to remediate them. We aimed to explore students' perceptions and management of clinical underperformance.

Methods

We undertook a qualitative and a questionnaire exploration of the issues around the underperformance in 7th year students at a single Taiwan Hospital institution. Data were analysed thematically. Sixty-five student and 50 teachers were invited. Twenty-six students and 21 teachers participated in focus group discussions. An e-book, with PAAR (probe, analyse, action, and resolve) from the method of Teaching on the Run, can be checked easily from smartphones, tablets and computers. A group with e-book intervention and a control group without e-book were studied.

Results

From students' perspective, areas for underperformance were: (1) clinical work, including nurses' attitudes (2) attendance rate, including clinical work loading (3) medical ethical issues, including patients taking medical resources.

The students' management of their fever, sick, depression, motivation, emotion for clinical work improved significantly in e-book group than in the control. Handling of privacy, doing nothing good to patients for ethical issues improved significantly in e-book group than control. In terms of not enough sleep time, feel learning nothing, teachers' inadequacy and handling privacy improved significantly in e-book group than control.

Conclusion

The reasons for underperformance in medical students included clinical work, attendance rate and their concerns about medical ethical issues, all of which might influence their performance. Students used the e-book for facing physical problems and emotional stress improved significantly. It did not help students with work affairs and nursing attitude.

AN INITIATIVE TO REVAMP TRADITIONAL DIDACTIC ORIENTATION DURING CLINICAL POSTINGS

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Background and Aims

At Tan Tock Seng Hospital (TTSH), all Pre-professional students must undergo a 60 to 90 minutes orientation programme every time before they start their clinical postings. For students who come through to TTSH multiple times, it means having to undergo multiple orientation programme with similar content. Orientation is essential to set the tone of the clinical posting and to lay down expectations for the students. It covers areas such as code of conduct, infection control and patient safety which are essential values and knowledge that students must know during their clinical postings.

Overtime, TTSH Pre-Professional Education Office (PPEO) realised that these students tend to not pay attention and are not engaged in how the orientation was being conducted. In order to ensure that students retain the knowledge covered in the orientation, TTSH PPEO revamped the orientation programme.

Methods

PPEO introduced an online platform to conduct an interactive on-the spot quiz in a fun and engaging way for Medical and Diagnostic Radiography students who have already attended at least one such briefing. The online quiz served as a recap of the orientation and to assess the retention rate on important details. A time limit was set for each question with a live leaderboard displaying the names and current score of individual participant. At the end of the quiz, the administrator would go through all the answers with the students. For questions with a score of below 80%, the students would be briefed on the module again.

Results

For the Code of Conduct module, students scored 91.8% (n=78/85) and 92.6% (n=75/81) on questions on social media and confidentiality. For the Infection Control module, students answered 92.9% (n=79/85) and 84.5% (n=72/85) on how to properly dispose biohazard waste and what they should do if they sustain a splash or needle stick injury. For Hand Hygiene Module, Students scored 83.5% (n=71/85) and 92.8% (n=78/85) on questions on the correct usage of Alcohol rubs and Bare Below Elbow Compliance. For Patient Safety module, students answered 79.6% (n=43/54) and 66.7% (n=28/42) for questions on International Patient Safety Goals and fall risk patients.

Conclusion

From the results, we can see that the students are weaker with questions on patient safety. With this, PPEO can improve the effectiveness of the orientation by focusing on the weaker areas where students will need more help with at the orientation. The content must be covered as these knowledge is critical to protect themselves and the patients.

STRATEGIES FOR TEACHING AND LEARNING CLINICAL REASONING FOR MEDICAL STUDENTS: A SYSTEMATIC REVIEW

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Background and Aims

In recent years there have been numerous studies exploring different teaching and learning strategies for improving clinical reasoning in medical students. In this systematic review, the authors examine and summarise the evidence on the effectiveness of these strategies.

Methods

Database searches were performed in PubMed, Embase, Scopus and ERIC using keywords related to clinical reasoning, medical students and various reasoning strategies. The results were screened and evaluated for eligibility. Relevant data were then extracted from the studies that met the inclusion criteria.

Results

Sixty-six full text articles were first identified. Based on the review criteria, 18 articles were included in the study. There were 12 randomized controlled studies, four quasi-experimental studies and two within-subjects studies. Five studies discussed structured reflection, four self-explanations and three tools and aids in generating differential diagnoses. Of the other six studies, two studies employed SNAPPS technique for case presentation. Three separate studies explored diagnostic grand rounds, schema-based instruction, and illness scripts respectively. One study made use of a 10-step remediation plan. 13 out of 18 studies reported improvement in clinical reasoning after the intervention.

Conclusion

There are several strategies that are effective in improving clinical reasoning in medical students. Different strategies target different elements of the clinical reasoning process. Structured reflection and self-explanation are more extensively studied than other strategies. There remains a lack of studies comparing the effectiveness of different strategies. There is significant methodological heterogeneity among studies. More comparative studies with standardised assessment methods and evaluation of long-term effectiveness of these strategies are recommended.

Saturday 11 January 2020, 9.00am

Aquarius 2, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 2

A Meta-Analysis for Comparing Effective Teaching in Clinical Education
Pin-Hsiang Huang, Australia

Enhancing the Delivery of Caregiver Training Through Workplace Learning in Allied Health Professionals
Lee Yin Goh, Singapore

A Study of Clinical Educators' Perception of Radiology Students in Clinical Placement at Khoo Teck Puat Hospital
Chew Khim Thng, Singapore

The Educational Adequacy of Public Health Component in the Medical Curriculum at Eastern University, Sri Lanka
Youhasan Punithalingam, Sri Lanka

What Worked for Us: Using Evidence-Based Learning Strategies to Enhance Learning and Performance
Fun Man Fung, Singapore

Who are Ready to Collaborate? Differential Students' Readiness for Interprofessional Learning in the Philippines
Fraide Ganotice, Hong Kong S.A.R.

A META-ANALYSIS FOR COMPARING EFFECTIVE TEACHING IN CLINICAL EDUCATION

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Background and Aims

Many factors impact on student learning outcomes, such as teacher experience and effectiveness, teaching methodology and approach, as well as the learning environment. However, studies comparing the relative effectiveness of different clinical teaching methods are limited. The aim of this study was to identify teaching-learning factors which characterise efficient teaching in clinical settings.

Methods

The list of influences on educational achievement compiled by John Hattie (2012) was used as a basis for the first meta-analysis of learning effect sizes associated with teaching-learning factors in clinical education. A literature search was conducted in PubMed to identify articles which employed terms related to one or more clinically relevant teaching-learning factors. Selection criteria were applied to identify learner-focused studies, followed by categorisation of suitable articles according to their study design (pretest-posttest or controlled group). The Cohen's effect sizes (d) of teaching-learning factors were extracted or calculated from each study and a pooled effect size for each factor determined.

Results

Screening produced 132 articles suitable for analysis from 3454 studies retrieved by our literature search. Sufficient data allowed for the evaluation 16 teaching-learning factor effect sizes. In general, effect sizes derived from pretest-posttest study data were larger than those from controlled group designs, probably as a result of learner maturation effect. Mastery learning, small group learning and goal setting teaching-learning factors possessed the largest effect sizes ($d \geq 0.8$), while worked examples, play programmes, questioning, concept mapping, meta-cognitive strategies, visual-perception programmes and teaching strategies demonstrated effect sizes between 0.4 and 0.8.

Conclusion

This is the first study of its kind to provide a rigorous and comprehensive overview of the relative effectiveness of different clinical teaching methods. Teachers may use this data to optimise teaching and professional development within their individual contexts with the aim of improving learning outcomes in the clinical environment. The study provides a substantial and objective theoretical foundation for developing new measurement tools. Clinical tutors may incorporate mastery learning, small group learning and goal settings into teaching practices for more efficient clinical learning outcomes.

ENHANCING THE DELIVERY OF CAREGIVER TRAINING THROUGH WORKPLACE LEARNING IN ALLIED HEALTH PROFESSIONALS

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Background and Aims

Workplace learning leverages on learning that happens naturally in the workplace. Benefits include improved performance, productivity and reduced training costs, whilst encouraging innovation and lifelong learning. Development of effective workplace learning interventions require systematic analysis of job and learner requirements, workplace enablers and barriers to learning, collaborative problem solving and learner engagement. Allied health professionals are required in their daily work to provide caregiver training to the caregivers of patients. This training enables caregivers to manage the care of patients post-discharge from hospital. However, effective training or teaching methodology is not covered in most allied health science undergraduate curriculum. This study aimed to describe the development of a workplace learning intervention to improve the quality of training provided by allied health professionals (physiotherapists and occupational therapists), to caregivers of hospitalised patients, utilising a targeted workplace learning intervention.

Methods

A collaboration between the Institute of Adult Learning and the Allied Health staff of Tan Tock Seng Hospital, Singapore was initiated in June 2018. The objective was to enhance caregiver training delivery by allied health professionals. Qualitative methods such as semi-structured interviews, participant observation and document analysis were conducted as a needs analysis by the adult learning institute consultant. A co-creation phase involving a select group of allied health staff and the consultant followed, yielding a specific workplace learning intervention which was implemented and evaluated.

Results

The workplace learning intervention developed included a framework to guide the step-wise provision of caregiver training, micro-learning job aids to facilitate bite-sized and just-in-time learning for staff and Train-the-Trainer learning materials for identified staff to use to train others. A pilot run of the workplace learning intervention was conducted (n=37). The workplace intervention was then evaluated using post-training staff feedback (n=37) and on-site peer review (n=9) of caregiver training delivery. Improvements in staff self-rated knowledge and in the quality of caregiver training delivery were achieved post-intervention.

Conclusion

Improvements in perceived knowledge and delivery of caregiver training among Allied Health staff were achieved through a targeted workplace learning intervention. These improvements could positively impact on caregivers' and patients' experience of care-delivery. Results support the use of workplace learning interventions such as bite-sized and just-in-time learning in improving staff performance. Finally, there is potential to explore the application of micro-learning in patient education to enhance motivation and improve health outcomes.

A STUDY OF CLINICAL EDUCATORS' PERCEPTION OF RADIOLOGY STUDENTS IN CLINICAL PLACEMENT AT KHOO TECK PUAT HOSPITAL

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Background and Aims

Educators play a critical role in guiding students to convert their theoretical knowledge to clinical skills. Therefore, it is important for educators to have the correct mentality and attitude in the guiding and coaching process.

Aim: It explored clinical educators' perspective on their views on their journey as an educator in radiography education. It aimed to find out their experience as an educator, the challenges that were faced and their expectations towards students.

Methods

A semi-structured open-ended interview was adopted and performed on seven educators.

Results

All the educators were motivated to teach and deemed it as a task to groom the next generation as it gave them a sense of accomplishment. All of them also agreed that there were benefits as they were able to learn together with students. However, they all agreed that there were also challenges faced, such as managing students of different learning speed, busy clinical workloads, and handling students that they were not able to build rapport with. Educators also stated their expectations of students during placement which were mostly similar among them, such as proactiveness, receptiveness to feedback, level of competency and communication skill.

Conclusion

The findings will be used to formulate strategies to improve educators' perception that will help to enhance students' learning resulting in delivering better service, patient care and skill towards patients in the long run.

THE EDUCATIONAL ADEQUACY OF PUBLIC HEALTH COMPONENT IN THE MEDICAL CURRICULUM AT EASTERN UNIVERSITY, SRI LANKA

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Background and Aims

The need of effective Public Health curriculum in undergraduate medical programme is greatly emphasised by shift of focus in healthcare from curative to preventive medicine. These changes have made a considerable impact on the content of Public Health in the medical curriculum, its teaching learning-activities and assessment methods. The Eastern University, Sri Lanka (EUSL) has been contributing to Sri Lankan health sector by producing MBBS graduates since 2006. To date, seven batches have been graduated from EUSL. However, the effectiveness of the Public Health curriculum has not been evaluated. Thus, this study aimed to evaluate the adequacy of the Public Health component in medical curriculum at EUSL.

Methods

A descriptive study was conducted using a mixed method approach. The quantitative component primarily included a self-administered questionnaire survey, which was administered to final year students (N=70), graduates (N=24) and two Public Health teachers of Faculty of Health-Care Sciences, EUSL. The responses were analysed using descriptive statistics, Chi-square test and qualitative analysis of open comments. The qualitative component primarily included an analysis of curriculum documents of EUSL in Public Health.

Results

The study revealed that the Public Health curriculum of EUSL meets adequate standards of educational concepts as detailed below. The outcome of the curriculum was aligned with educational philosophy (vision & mission) of the FHCS, outcomes expected by the Sri Lankan Medical Council and Sri Lankan Qualifications Framework. The course content of the Public Health curriculum complied with standards of Subject Bench Mark Statements. The planned curriculum in Public health was more teacher-centric, community-oriented and systematic. The alignment between planned, taught and assessed curricula was adequate. The students and graduates (72%) showed less interest to choose Public Health as a future career although it was perceived as an important field (57%). Participants perceived that working in the community as a team was a pleasurable experience. They expected proper guidance from teachers to conduct research projects. There was a need to replace traditional lectures by suitable student-centric, effective teaching-learning method. Assessment should be integrated with relevant disciplines and field-based practice.

Teachers' feedback emphasised the importance of integrating the knowledge, skills and attitudes in teaching-learning and assessment. Furthermore, they suggested to adequately incorporate the community and family attachments marks in summative assessment to attain the students' motivation towards the Public Health appointments. Moreover, teachers highlighted that the adequacy of supervision and ethical consideration should be improved in the students' research projects.

Conclusion

The Public Health curriculum of EUSL is adequately aligned with educational standards in Sri Lanka. There are, however, some mismatches between curriculum goals and long-term student aspirations. The findings of the study would be helpful in improving the undergraduate Public Health medical curriculum to provide more effective education and better learning experience for students.

WHAT WORKED FOR US: USING EVIDENCE-BASED LEARNING STRATEGIES TO ENHANCE LEARNING AND PERFORMANCE

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Background and Aims

We conducted the workshop "Using Evidence-Based Learning Strategies to Enhance Learning and Performance" for 50 medical professionals at the SingHealth DukeNUS EduCon 2019. In line with SkillsFuture Singapore, a national movement to provide Singaporeans with the opportunities to develop their fullest potential throughout life, we also recognize many adult learners may be hesitant or felt the challenge in learning new skills. By providing the enabling tools that will facilitate the mindset of continually striving towards excellence, learners can apply these learning strategies to learn better.

Methods

We team-taught (4 persons: medical educator, general educator, administrator, programme lead) the 180-minute workshop. The workshop is interactive, hands-on and participative that allow participants to develop their skills.

Learning Objective:

By the end of the workshop, participants will be able to:

1. Identify ineffective learning strategies
2. Recognise the evidence-based effective learning strategies
3. Identify how the various effective strategies can be incorporated into their own learning
4. Incorporate effective strategies into their own educational programme

Evaluation of workshop

Post-workshop survey: We administer survey handouts to capture their learning during the workshop. The survey primarily asks questions to get participants to:

1. Reflect on their own learning strategies after attending the workshop,
2. Generate one key point which they have learned from the workshop
3. Document their perceptions in using these strategies

Follow-up survey: We follow-up two months later with a survey gathering self-reported use of the effective strategies either for their own learning or educational programme.

Results

The workshop feedback was terrific. Participants ask if the same workshop can be conducted for their colleagues who missed it. Some comments we received from the participants includes "One of the main highlights for me was learning and networking with various professionals from numerous industries" and "The course provided a common platform to share experiences in dealing with different situations."

Conclusion

Our workshop on "Using Evidence-Based Learning Strategies to Enhance Learning and Performance" provided essential knowledge and practical strategies to help working adults learn in the most efficient, productive, and enjoyable manner possible. This cultivates the skills to remain competitive in a rapidly changing job market and an increasingly complex world.

These outcomes are in line with the broader workforce goals of the Singapore government and the National University of Singapore (NUS), which both launched initiatives to encourage lifelong learning in recent years. These initiatives seek to ensure that Singaporeans are constantly learning, innovating, and growing at all stages of life.

WHO ARE READY TO COLLABORATE? DIFFERENTIAL STUDENTS' READINESS FOR INTERPROFESSIONAL LEARNING IN THE PHILIPPINES

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Background and Aims

Learning with, from and about other health professions is touted as a means to become collaborative practice-ready. The integration of interprofessional education in healthcare curriculum in the Philippines becomes the chance to examine students' readiness to engage in interprofessional learning. This study aims to examine the differential attitude of a sample 423 Filipino students involved in interprofessional learning. Using multiple analysis of variance, we found gender, program, year level differences among students from medical technology, pharmacy, occupational therapy, and radiologic technology in terms of teamwork and collaboration, negative professional identity, positive professional identity, and roles and responsibilities. These differences can inform the development of an intervention program to elicit a favourable attitude towards interprofessional collaboration. Theoretical, methodological, and practical implications are discussed.

Methods

The participants consisted of 423 Filipino students in the prelicensure curriculum who were enrolled in allied health care programs in a private University in the Philippines. They were composed of 102 males (24.1%) and 320 females (75.9%) from five allied health care programs: Medical Technology (n=234), Pharmacy (n=129), Physical Therapy (n=31), and Occupational Therapy (n=29) and were distributed from first year, third year, and fourth year. They responded to RIPLS at the beginning of the planned interprofessional education and collaboration program of the University they were enrolled. Multiple analysis of variance (MANOVA) was used to test if there were significant mean differences among students from five programs in the following RIPLS subscales: teamwork and collaboration, negative professional identity, positive professional identity, roles and responsibilities, and the total readiness. Follow-up one-way analysis of variance (ANOVA) with Bonferroni post-hoc test was used to examine between group differences. T-test was used to examine gender differences.

Results

A significant effect of program emerged [$F = 5.36$, $p < 0.001$). Follow-up separate analysis of variance (ANOVA) for each readiness outcome indicated that there were significant between-group differences in teamwork and collaboration [$F(4, 411) = 7.35$, $p = 0.001$; partial $\eta 2 = .040$], negative professional identity [$F(4, 411) = 3.828$, $p = 0.023$; partial $\eta 2 = .018$], and roles in responsibilities [$F(4, 411) = 9.844$, $p = 0.000$; partial $\eta 2 = .045$]. Post-hoc mean comparison on teamwork and collaboration using Bonferroni showed that medical technology students (M=3.37, SD=.53) were significantly lower than pharmacy (M=3.55, SD=.34) and combined occupational therapy and physical therapy students (M=3.51, SD=.30). In terms of negative professional identity, medical technology (M=1.94, SD=.73) was significantly higher than pharmacy students (M=1.72, SD=.71). There was no between-group difference in terms of positive professional identity. In terms of roles and responsibilities, the combined occupational therapy and physical therapy students (M=2.29, SD=.63) were significantly lower than medical technology (M=2.78, SD=.75) and pharmacy students (M=2.59, SD=.78)

Conclusion

Our findings indicated that there were significant differences in students' baseline data when compared according to program, gender, and year level. Given these important findings, program implementers are therefore encouraged take these into considerations both in designing intervention which emphasises baseline comparability (e.g., randomisation of participants into control and experimental groups) and in interpreting future IPE intervention results.

SHORT COMMUNICATIONS 3

The 20-Hour BFHI Course Training Enhances Supportive Breastfeeding Practices, Knowledge and Attitude of Nurses
Yvonne Peng Mei Ng, Singapore

The Growth and Sustenance of Empathy in Healthcare Professionals: The Role of Beliefs and Values in an Asian Context
Mai Khanh Le, Singapore

Medical Students' Utilisation of Online Information Sources for Academic Information Searching
Yen-Lin Chiu, Taiwan

Perceptions of Dental Residents Toward Their Clinical Education Learning Environment in National Dental Centre Singapore (NDCS)
Marianne Ong, Singapore

Increasing the Capacity of the NUHS Family Medicine Residency Programme and Revamping the Programme Curriculum
David Hsien Yung Tan, Singapore

Impact of University Examination Stress on Diet, Sleep and Perceived Body Weight Among Undergraduate Medical Students in Trichy, India: A Cross-Sectional Study
Prethi Rajendran, India

THE 20-HOUR BFHI COURSE TRAINING ENHANCES SUPPORTIVE BREASTFEEDING PRACTICES, KNOWLEDGE AND ATTITUDE OF NURSES

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Background and Aims

The WHO-UNICEF Baby-Friendly Hospital Initiative (BFHI) enables maternity units to be centres of breastfeeding support by implementing the "Ten Steps to Successful Breastfeeding." National University Hospital (NUH) prepared for BFHI certification by training staff in skills to support and manage breastfeeding mother-baby dyads (Step 2). Training workshops for nurses based on WHO-UNICEF 20-hour BFHI course for maternity staff started in April 2010 and were completed by mid-2013. NUH was designated a Baby Friendly Hospital in August 2013. This study aimed to assess the effectiveness of our training programme by comparing nurses' breastfeeding practices, knowledge and attitude before and after training.

Methods

A cross-sectional, self-reported survey was conducted for nurses in the maternity and neonatal departments in 2009 before formal training began. Survey forms were distributed by nurse managers, forms were self-administered and returned anonymously within a 2-week period. This survey was repeated 5 years later in 2014. Data included demographics, experiences, confidence, and specific knowledge on breastfeeding. Statistical analyses were performed using Stata 15.0 (Stata Corp LP, College Station, Texas, USA). Descriptive statistics were reported as frequency and percentages. Pearson's chi-squared tests compared categorical data- over two time points. A p-value of <0.05 was considered statistically significant.

Results

Response rates were 87% (2009) and 73% (2014) with 140 and 148 respondents respectively. In 2014, participating nurses work areas were: 12% in antenatal ward, 15% in delivery suite, 43% in postnatal wards and 28% in Neonatal ICU; majority (71%) were registered nurses; 54% had over 5 years of experience working with mothers and babies. In 2014, nurses reported a significant increase in breastfeeding education in the past 2 years (81% versus 64%). Likewise, they reported providing more breastfeeding education (95% versus 85%). Over 5 years, nurses' confidence in providing advice on hand expression, increasing lactation and attachment to breast improved significantly by 10%. The 2014 group also reported more confidence in assisting breastfeeding (88% versus 77%, $p= 0.019$). The adequacy of breastfeeding training to staff had increased substantially from 47% to 81%, $p= <0.001$ over 5 years. Nurses knowledge on breastfeeding also improved. A two-fold increase in nurses correctly determined 7ml as stomach capacity of a baby in the first day of life (50% versus 25%, $p=<0.001$). More nurses in 2014 identified medical contraindication for breastfeeding (85% versus 45%, $p=<0.001$) and were aware of healthcare facility responsibilities on the International Code of Marketing of Breastmilk Substitutes (89% versus 64%, $p<0.001$).

Conclusion

We have achieved our aim in providing breastfeeding education to nursing staff, which also increased nurses' confidence and breastfeeding support provided to mothers in our hospital. We can use this survey as a tool to monitor effectiveness of continual breastfeeding education and training of staff in our Baby-Friendly Hospital.

Acknowledgement: Pearly Son, Valerie Ho Jiahui, Wong Lai Ying, Lim Peng Im, Tan Peiting, Annette Wright (NICU Liverpool Hospital, NSW, Australia)

THE GROWTH AND SUSTENANCE OF EMPATHY IN HEALTHCARE PROFESSIONALS: THE ROLE OF BELIEFS AND VALUES IN AN ASIAN CONTEXT

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Background and Aims

Empathy, defined as the ability to understand and share the feelings of others, plays an important role in healthcare interactions. Evidence indicates that empathetic behaviours by healthcare workers can improve care outcomes. However, empathy has been known in some instances to decrease through medical training and professional practice over time. Research that serves to increase the understanding of the development of empathy in the healthcare context is therefore important. Proponents of the specificity approach focus on the study of a particular component of empathy whereas the multi-dimensionality approach does not limit itself to a particular component although it recognises that cognitive, affective, and behavioural components are all integral to empathy. This study aims to expand on the multi-dimensionality approach by examining how in an Asian context, the underlying beliefs and values of the healthcare professionals are possibly important to the development of empathy.

Methods

Focus group discussions were carried out with 14 homogeneous groups of healthcare professionals, healthcare students, and patients (n=69) from two healthcare institutions, a medical school, and a nursing school in Singapore. The study adopted a grounded theory approach that engages in simultaneous data collection and analysis, coding, and memo-writing.

Results

Findings showed how beliefs and values are important to the growth and sustenance of empathy for healthcare professionals. In addition, previously described components of empathy such as affective, cognitive, and behavioural, empathy was found to be both multi-dimensional and highly integrated.

Conclusion

This study adds to the understanding of empathy using the multi-dimensionality approach and point to the role of beliefs and values in the development of empathy. Findings from this study may serve to inform the design of interventional efforts aimed at promoting empathetic behaviours in healthcare workers.

MEDICAL STUDENTS' UTILISATION OF ONLINE INFORMATION SOURCES FOR ACADEMIC INFORMATION SEARCHING

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Background and Aims

The increasing adoption of online information has affected medical students' information searching behaviours for task-related medical queries. The main purposes of this study were to explore medical students' utilisation of online information sources for academic information searching for study tasks and examine the predictors of such behaviours.

Methods

The online academic help seeking questionnaire was used to examine medical students' academic searching behaviours that is sources of gathering medical information for academic tasks. In addition, an investigation on their motivational beliefs relating to learning medicine was conducted. A total of 108 medical students from a medical university in Taiwan were surveyed.

Results

The average age of the participants was 25.79 ranging from 20 to 43. Among them, 59 were males while 49 were females. The results of exploratory factor analysis (EFA) showed that academic information searching behaviours can be grouped into three factors and labelled as scholarly information search, formal query and informal query (KMO = 0.73, chi-square = 551.51, $p < 0.001$), with reliability coefficients of 0.86, 0.86 and 0.68, respectively. The results of EFA for motivational beliefs indicated two factors namely intrinsic motivation and test anxiety (KMO = 0.77, chi-square = 526.43, $p < 0.001$), with reliability coefficients of 0.85 and 0.92, respectively. Finally, the linear regression analyses were conducted to examine the predictors of academic information searching behaviours regarding informal query, formal query and scholar information search. The regression analyses results showed that test anxiety can be correlated to informal query ($ß = 0.25$, $p < 0.05$). On the other hand, the intrinsic motivation can be linked to formal query ($ß = 0.31$, $p < 0.01$). However, both test anxiety ($ß = 0.21$, $p < 0.05$) and intrinsic motivation ($ß = 0.57$, $p < 0.001$) can be related to scholar information search. In addition, the medical students' grade was associated with scholar information search ($ß = 0.29$, $p < 0.01$).

Conclusion

The medical students with higher test anxiety were more likely to get medical information from informal query that is gathering information from online forum, and informal knowledge sharing platform. Otherwise, the more the intrinsic motivation of them the more possibility that they gather medical information from teachers and teaching assistants. However, the medical students possessing higher test anxiety and more intrinsic motivation for learning medicine intended to search medical information through scholar sources such as Medline, websites of medical association, websites of officially medical institution, and so on. In addition, the medical students in senior grade were more likely to search information from such sources. In conclusion, the motivational beliefs regarding learning medicine can be considered as important factors which may affect their academic information searching behaviours.

PERCEPTIONS OF DENTAL RESIDENTS TOWARD THEIR CLINICAL EDUCATION LEARNING ENVIRONMENT IN NATIONAL DENTAL CENTRE SINGAPORE (NDCS)

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Background and Aims

NDCS in collaboration with the Division of Graduate Dental Studies, National University of Singapore Faculty of Dentistry has been running 3-year Master of Dental Surgery (MDS) Residency Training Programmes (RTPs) in five dental specialities (Orthodontics, Oral Maxillofacial Surgery, Prosthodontics, Endodontics and Periodontics) since the 1990s. Clinical teaching in NDCS is primarily done in a busy outpatient setting. Until 2015, no specific evaluation of the learning environment in which the RTPs are run in NDCS had been obtained. The aim of this descriptive study was thus to obtain dental residents' qualitative and quantitative perspectives on their NDCS clinical education learning environment. The protocol was reviewed and given exempt status by the SingHealth CIRB (Ref: 2015/2396).

Methods

Between May to June 2015, forty-nine residents were asked to complete a 50-item survey (47 rating items and 3 open-ended questions) during the last 2 weeks of academic term 4. The survey was adapted from the Clinical Education Instructional Quality Questionnaire (ClinEd IQ) which consists of 43 Likert-type items (1-6 rating with 6 being highest) and 2 free text items. After reviewing the ClinED IQ, we dropped 7 items due to lack of relevance in our context and added 11 items and an additional free text item. The survey had 3 subscales, Clinical Learning Opportunities (CLO); Involvement in Specific Learning Activities (ISP), and Interactions with Clinical Instructors (ICI). To maintain confidentiality, the questionnaire obtained only basic demographic data (gender, age range and year of residency). The questionnaires were administered and collected by an administrative staff from the Oral Health Academic Clinical Programme Office who subsequently entered the de-identified data into an Excel spreadsheet in a password-protected computer. All de-identified data was collated and reported as group data.

Results

Forty-six (94%) residents (19M, 27F) completed the modified survey. Subscale mean scores were 4.42 (SD:0.17) for CLO, 4.69 (SD:0.17) for ISP and 4.54 (SD:0.14) for ICI. The mean scores of the 3 subscales are taken as surrogates to reflect the residents' perspectives of their clinical education learning environment and a mean score >/=4 viewed as a positive perspective. Residents commented on strengths, weaknesses and problems they encountered during RTPs. By having a large patient pool, wide range of cases and approachable faculty, RTPs served to provide comprehensive training for the residents. Some common problems residents encountered were wastage of time waiting for clinical supervisors and lack of dental assistance. Improvements for programmes include providing adequate resources and equipment, increasing number of dental assistants and giving sufficient clinical time to residents. The comments suggested CLO was rated lower due to concerns with efficiency of the dental clinic environment (dental assisting support, waiting for consults, administrative work, lack of materials).

Conclusion

This cohort of residents viewed their clinical education learning environment in NDCS positively. The modified ClinED IQ survey will continue to be used as a tool to monitor the learning environment of dental residents in NDCS. We will work on identified areas of weaknesses as well as strengthen and build upon the positive aspects of clinical education in NDCS.

INCREASING THE CAPACITY OF THE NUHS FAMILY MEDICINE RESIDENCY PROGRAMME AND REVAMPING THE PROGRAMME CURRICULUM

Tan DHY

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Background and Aims

NUHS Family Medicine Residency has been asked to increase the number of residents trained per year from a previously approved number of 6 per year to 30 per year. The programme previously did not have a primary care/community arm, but with the creation of the National University Polyclinics as an entity and with it coming under the NUHS cluster, there is an opportunity for more residents to be trained. However, the sudden increase in numbers will lead to a need to revamp the way the curriculum is currently being delivered, as well as to have more physician/core faculty come on board to deliver the education. The current format of Centralised Large group teaching sessions will need to be relooked to optimise better teacher-student interaction and to ensure learning outcomes are achieved, as well as to prevent burnout of Residents, Faculty and Programme staff.

Methods

A Curriculum Review Committee was set up with existing and new faculty to identify the following teaching issues:

- Exploration of centralised vs decentralised teaching
- Teaching by the programme vs host postings

New faculty were recruited to look at how the Clinical Competency Committee (CCC) sessions could be efficiently carried out with the larger number of residents and faculty.

Results

For delivery of teaching topics, 20 topics were identified to be taught in the continuity clinics, potentially freeing up Friday evening sessions for residents and faculty. Online and electronic forms were created to allow better tracking of residents' attendance at teaching sessions and to reduce paperwork for both residents and programme coordinators.

Use of platforms such as Wizlearn are being explored to allow CCC sessions to be carried out more effectively.

Feedback will be obtained to monitor the impact of the curriculum change.

Conclusion

As residency programmes increase in size and number, new ways will need to be created to ensure learning continues to be effective for residents, and paperwork is not burdensome for the programme.

IMPACT OF UNIVERSITY EXAMINATION STRESS ON DIET, SLEEP AND PERCEIVED BODY WEIGHT AMONG UNDERGRADUATE MEDICAL STUDENTS IN TRICHY, INDIA: A CROSS-SECTIONAL STUDY

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Background and Aims

In recent days, university examination stress is playing a major role in variations of eating and sleep behaviour among young adults. There is a paucity of literature and very few supportive evidence. In view of this, the present study to explore the possible effect of university examination stress on dietary habits, sleep pattern and perceived body weight among undergraduate medical students.

Objectives:

1. To estimate the proportion of medical students with change in dietary habits, sleeping patterns and perceived body weight one month before and during the university examination.
2. To find out the association between perceived stress and the above factors

Methods

A retrospective type of cross sectional study was conducted among 146 (M=71, F=75) medical students of age between 22-24 years of both genders. The study was conducted over a period of 3 months from June-August 2019. They were selected randomly and explained about the study protocol with informed written consent were taken from the subjects. A pre validated (validity-0.8) structured questionnaire was used in the study. The questionnaire includes topics about change in dietary habits, sleeping patterns and perceived body weight during and one month before the university examinations. The data was analysed using IBM SPSS statistics 21.

Results

Most of the students (38-40%) have reported that one month before and during university examination the frequency, quantity and hunger sensation were decreased and satiety feeling increased. More than 50 % of the students were stressed which leads to changing of sleeping pattern, especially increased daytime sleepiness due to late night exam preparation. Highest number of students (>68%) were staying in a hostel and most of them preferred for any one of the relaxation technique during examination stress. Our students (>50%) have recommended early introduction of a stress management programme in medical school.

Conclusion

Our study results show that, the proportion of medical students are influenced by negative impact of academic university examination stress especially, the normal rhythm of sleep, eating habits and behavioural pattern. Due to the high susceptibility of young medical students to developing eating, sleeping and behavioural disorders which warrants further investigation. Early and proper introducing stress management programme as part of the medical curriculum which helps to prevent the negative impact of examination stress on a normal diet, sleep and behavioural pattern.

Saturday 11 January 2020, 9.00am

Aquarius 3, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 4

How Practising Empathy Impacts a Physician's Professional Identity Formation: A Scoping Review
Laura Tan, Singapore

Course Development Combining Team-Based Learning, Virtual Software and Laboratory Demonstration to Deepen the Teaching and Learning of Electrophysiology
Ke-Li Tsai, Taiwan

Team-Based Learning Workshop on the New Classification of Periodontal Diseases 2017
Lean Heong Foo, Singapore

An Experiential Outcome-Based Education Model to Train Nurses for Triage Nebulisation in the Emergency Department
Annur Ain Faraliza Binte Razali, Singapore

Redesign Case-Based Discussion in Coaching Clinical Skill for the Novice and in-Difficult Medical Students
Saowapha Srisai, Thailand

What is Learned Through Teaching? - Qualitative Study About Learning of the Second Year Residents Who Teach the First Year Residents
Takeshi Kondo, Japan

HOW PRACTISING EMPATHY IMPACTS A PHYSICIAN'S PROFESSIONAL IDENTITY FORMATION: A SCOPING REVIEW

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Background and Aims

Literature is replete with how empathy is fundamental to the humanistic care of patients, but there has been little consolidated understanding of the impact of practicing empathy on the physician. This scoping review aims to provide a framework to understand the effects of empathy on a physician's professional identity formation.

Methods

A search of seven databases (PubMed, Cochrane, ERIC, Embase, PsycINFO, CINHAL and Google Scholar) was conducted till 17 November 2018. The papers were screened using a set of inclusion and exclusion criteria, and the corresponding data was extracted and analysed using a coding framework.

Results

In total, 7663 titles and abstracts were retrieved, of which 109 articles were analysed.

Thematic analysis revealed that practicing empathy influences various aspects of a physician's professional identity: 1) values, ethics and morals, 2) clinical competency, 3) physical and emotional well-being (with implications for burnout, compassion fatigue and compassion satisfaction), 4) familial relationships, 5) relationships with colleagues, 6) the physician's role as a teacher, 7) the physician-patient relationship, 8) the physician as a professional member of society and his resulting obligations, and 9) the physician's role as a judicious guardian of societal resources.

We discuss how practicing empathy facilitates the socialisation process of professional identity formation and is a vehicle for moving a physician from legitimate peripheral participation to full participation in the medical community. It has implications for personal growth and the acquisition of values and characteristics cardinal to the eventual practice of an effective physician.

Conclusion

Practising empathy has far-reaching impact on a physician's professional identity formation and clinical practice. Our research provides evidence for nurturing empathy in the practice of medicine, and hints towards a novel approach for medical schools and residency programmes to grow and develop their budding physicians.

COURSE DEVELOPMENT COMBINING TEAM-BASED LEARNING, VIRTUAL SOFTWARE AND LABORATORY DEMONSTRATION TO DEEPEN THE TEACHING AND LEARNING OF ELECTROPHYSIOLOGY

***Tsai K*, Chen T**

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Background and Aims

Electrophysiology is an essential part of medical physiology, as many diseases are related to abnormalities in electrophysiological response. However, it is observed that many medical students still have misconceptions and misunderstandings after attending lectures in electrophysiology. Due to the significance of electrophysiology in medical practice and diseases, it is clear that the teaching of electrophysiology should be innovated in order to strengthen the learning outcome of students. Team-based learning and virtual software have never been used simultaneously in the teaching of electrophysiology. The aim of present study is to combine team-based learning, virtual software and laboratory demonstration to deepen the teaching and learning of electrophysiology.

Methods

The study is an action research in which quantitative and qualitative approaches was used to analyse the data of test score, questionnaire, interview and participant observation taken from teacher and students.

Results

We found that the students' learning outcome in electrophysiology was promoted by our curriculum development. Comparing quiz in classroom before and after the course, individual test and group test of team-based learning plus summative assessment, it is determined that the understanding of electrophysiology significantly improved and most misconceptions have been corrected among students. In addition, virtual software and laboratory demonstration further enhanced self-reflection and critical thinking.

Conclusion

It is shown that the innovative course deepens the reaching and learning of electrophysiology. Hopefully, our study will also induce similar innovative curriculum development in other subjects among teachers' community.

TEAM-BASED LEARNING WORKSHOP ON THE NEW CLASSIFICATION OF PERIODONTAL DISEASES 2017

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Background and Aims

Team-based learning (TBL) pedagogy is derived from the constructivist learning theory that promotes active learning among learners. We designed a TBL workshop to introduce and enhance knowledge related to periodontal diagnosis in the context of the 2017 classification system of periodontal diseases to the National Dental Centre and SingHealth Polyclinic Dental Officers.

Methods

Two articles related to the 2017 classification system were sent to 48 learners two weeks prior to the workshop. We organised two workshops on two consecutive evenings with a total of 22 learners and 26 learners respectively. Learners were assigned to 6 groups randomly. They participated in individual and group readiness assurance tests. Subsequently, they had intergroup and intragroup facilitated discussions on three simulated clinical cases. Lastly, the learners provided their feedback using a pen-to-paper survey. Based on a 5-point Likert scale, they indicated their level of agreement on 4 items related to the programme content, 4 items on programme learning and 5 items related to their learning experience (1-strongly disagree to 5-strongly agree).

Results

64.6% (31/48) of learners strongly agreed the programme content was relevant to their work. The average score for individual learning experience was 4.65 suggestive of their agreement the TBL workshop had a positive contribution to their knowledge level of the topic and relative ease of application of the classification after the TBL workshop. They found the group discussions and the simulated clinical cases useful.

Conclusion

A TBL workshop is suitable for clinical teaching as its structure promotes interaction among learners with the opportunity to provide feedback and reflection during the group discussions.

AN EXPERIENTIAL OUTCOME-BASED EDUCATION MODEL TO TRAIN NURSES FOR TRIAGE NEBULISATION IN THE EMERGENCY DEPARTMENT

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Background and Aims

Acute exacerbation of asthma is a common presentation in the Acute and Emergency Care Centre at Khoo Teck Puat Hospital. The door to nebulisation time (DTN, from registration time to receiving nebulisation) for walk-in patients with symptomatic non-life-threatening asthmatic exacerbation was long at 44 minutes.

An experiential outcome-based education model was developed to train triage nurses, who have no prior prescription rights, to diagnose acute asthmatic exacerbation and prescribe nebulisation on a per-protocol basis.

The aim is to evaluate the impact of this training model on the confidence level and competency of triage nurses in executing the protocol, empathy with patients and DTN time.

Methods

The model was designed using the ADDIE instructional system design process, incorporating the flipped classroom methodology and Gagne's 9 events of instruction model. Authentic whole-task training with audio-integrated clinical scenarios and training of auscultation on mannequin directed at level 2 and 3 of the Miller's pyramid respectively were used. Empathy was elicited by asking nurses to breathe through straws of varying calibre.

An online feedback form was created to measure the pre-post training confidence level on a scale of 1-10 and analysed using the 2 tailed Wilcoxon sign-ranked test. Empathy level after the training was reported on a 5-point Likert scale. The impact on competency was measured using scenario based MCQs, and the average DTN time was calculated post implementation of the protocol.

Results

21 out of 48 nurses trained responded to the survey (43.8%). There is a statistical increase in confidence level (4.43 to 7.71, $p<0.0001$) and all nurses reported that they could empathize better with patients better after the training. The pre-post MCQ test score improved from 7.27 to 8.65 ($p<0.0001$) out of maximum of 10. Following implementation, the protocol reduced by the mean DTN time by 23% (10 minutes).

Conclusion

The experiential outcome-based training model improves the triage nurses' ability and attitude when caring for symptomatic asthmatic patients and reduces delay in administration of nebulisation.

REDESIGN CASE-BASED DISCUSSION IN COACHING CLINICAL SKILL FOR THE NOVICE AND IN-DIFFICULT MEDICAL STUDENTS

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Background and Aims

Case-based discussions is an essential skill in clinical practice, usually use in workplace base assessment for assessing competency in clinical reasoning, clinical decisions and patient management for the experience-trainee. Another usage for the trainee is to provide learning through structured feedback, an opportunity to discuss their approach the case, identify strategies to improve their practice and enable the assessor to share professional knowledge and experience. The purpose of this educational activity was to evaluate the effectiveness of coaching by using case-based discussion for the novices, during their first months of the clinical training, who have difficulty in developing their clinical skills.

Methods

The sample population was the 4th year medical students at the Medical Education Centre, Songkhla hospital. After attaining the 5 weeks of introduction to medicine course, they were assessed their performance by OSCE and short case approached. Those who failed to pass the minimum desired level were included in the programme. In this study, 8 out of 25 medical novices were included. They were asked to practice their clinical skill during their ward-worked and presented one case each week to the facilitator-coach. Their performances were evaluated in comparison after the 2-month coaching programme.

Results

After the coaching programme, the average score of the students who were included in the programme was almost equal to the average score of the other medical students, showing an overall increase of 60 % from the first evaluation. The overall satisfaction of the students toward the facilitator-coach was also high.

Conclusion

Coaching under case-based discussion as formative evaluation can improve the clinical ability of novice medical students. It can provoke all the clinical experiences; knowledge, attitudes and professional behaviours.

WHAT IS LEARNED THROUGH TEACHING? QUALITATIVE STUDY ABOUT LEARNING OF THE SECOND YEAR RESIDENTS WHO TEACH THE FIRST YEAR RESIDENTS

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Background and Aims

Residents play an important role in teaching. There is a lot of research about how they should teach in clinical settings and how to instruct them in the way of teaching. Some researchers study about their medical skill or knowledge improves through teaching others in classrooms. But there are no studies about what is learned through teaching experience in a clinical setting. Our purpose is to explore what is learned through a teaching experience.

Methods

We conducted a qualitative study to explore the theme. Post graduate year (PGY) 2 doctors were recruited as interview participants. We recruited participants using a judgmental sampling. The first interview was conducted with a resident who was dedicated to teach PGY 1 doctors. We analysed data, and then looked for the next interviewee. We used the Step for Coding and Theorization (SCAT) for analysis, because SCAT has an explicit analytic process, and a validation of theory by assuring opportunity to show critiques and falsifiability. We used six core competencies by the Accreditation Council for Graduate Medical Education (ACGME), because our country doesn't have a consensus on doctors' competencies and six core competencies are well known to our country. The Ethical Committee of Nagoya University Graduate School of Medicine approved the study (approval number 2015-0451 6983).

Results

Five PGY2 doctors were interviewed in this study. The fear of upcoming PGY 1 stimulate new PGY 2 doctors to get more knowledge. The fear quickly disappeared after PGY 2 doctors met PGY 1 doctors, because PGY 2 doctors realise their dominance by experience. At the same time, a stimulated motivation to get knowledge disappeared. Through watching PGY 1 doctors practice, PGY 2 doctors got a more comprehensive view, on the other hand they declined some competencies that they were not good at. To show a good role model for PGY 1, they changed some behaviours. They tried to act politely, on the other hand they pretend to behave like a senior doctor. Conducting small lectures helped PGY 2 doctors organise their knowledge and experiences, but some doctors feel it much of a burden.

Conclusion

The teaching role motivates to improve competencies. The competencies motivated is varied by timing. Teaching role can have both positive and negative effects. These findings may help supporting senior doctors.

SHORT COMMUNICATIONS 5

Strategies Employed to Evaluate Training Programmes for Communications Among Healthcare Professionals in the Intensive Care Unit: A Systematic Review
Sherill Goh, Singapore

Exploring Year 2 Nursing Students' Perceptions Towards Critical Thinking and Clinical Reasoning: A Qualitative Study
Valynn Wong, Singapore

Correlation Between Cumulative GPA Score With National Board Examination in Faculty of Medicine, Pelita Harapan University
Andree Kurniawan, Indonesia

The PGY1 Monthly Performance Review Meeting: An Effective Platform for Supervision and Evaluation of PGY1 Within the Department of Internal Medicine in Singapore General Hospital
Shaikh Abdul Matin Mattar, Singapore

Examining the Knowledge and Attitude of Undergraduate Nursing Students Regarding Acute Pain Management
May Leng Kong, Singapore

Introducing Antibiotic Stewardship to Medical Undergraduates Using Scenario Based Interactive Teaching Method
Thilanka Seneviratne, Sri Lanka

STRATEGIES EMPLOYED TO EVALUATE TRAINING PROGRAMMES FOR COMMUNICATIONS AMONG HEALTHCARE PROFESSIONALS IN THE INTENSIVE CARE UNIT: A SYSTEMATIC REVIEW

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Background and Aims

The growing recognition of the importance of good communication among healthcare professionals (HCPs) in the Intensive Care Unit (ICU) setting has brought about the implementation of various communication skills training programmes for HCPs. Yet, little is known about the existing assessment strategies to assess the effectiveness of these programmes, and the gaps therein. To address this issue, a systematic review of assessment strategies was carried out.

Methods

Arksey and O'Malley's (2005) methodological framework for conducting scoping reviews was used to guide study of the potential size, gaps and scope of available literature on assessment of communication training programmes for HCPs in the ICU. Using identical search strategies, 6 reviewers performed independent literature reviews of articles published in PubMed, ERIC, JSTOR, Embase, CINAHL, Scopus, PsycINFO and Google Scholar databases.

Results

8820 abstracts were identified, 238 full-text articles were reviewed, and 31 full-text articles were thematically analysed to reveal 3 themes- evaluation methods of communication training programmes, evaluation criteria of communication training programmes, and factors affecting the strength of assessments.

Conclusion

The effective implementation of communication training programmes is imperative for the successful development of good communication skills among HCPs in ICUs. Good communication skills should manifest in the form of translation to actual clinical practice and benefits to patient care in the long run. However, the challenge in optimising the effectiveness of such training programmes comes from various limitations in existing evaluation strategies.

Despite the use of a range of evaluation methods such as pre- and post-intervention surveys, direct or indirect observations, interviews, and seminars, there is a paucity of data and knowledge about the components of a good evaluation strategy. Evaluation of existing programmes also does not adequately cover the levels of criteria required, beginning with learners' satisfaction and eventually leading to benefits to patient care. Moreover, existing assessment strategies most commonly involve self-evaluation by learners, which may be biased and poorly correlated with actual performance outcomes. This may

be due to the simple and less resource-intensive nature of self-evaluation, which points to resource constraints being a potential barrier to implementing effective assessment strategies. Furthermore, considering the interactional nature of communication, there is a lack of holistic evaluation which should take into account the perspectives of different stakeholders involved beyond just a single viewpoint.

It is hoped that the review of assessment strategies and their limitations may guide future research on the design of a holistic and longitudinal evaluation tool with objective measures.

EXPLORING YEAR 2 NURSING STUDENTS' PERCEPTIONS TOWARDS CRITICAL THINKING AND CLINICAL REASONING: A QUALITATIVE STUDY

***Wong V*, Kowitlawakul Y**

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Background and Aims

Critical thinking and clinical reasoning are core competencies emphasised in nursing practice. Nursing students are required to develop and practice these skills throughout their education to graduate and enter the workforce as a competent nurse. However, recent studies still report the lack of critical thinking and clinical reasoning in nursing students and fresh graduates. There is a need to understand the perceptions and difficulties in developing critical thinking and clinical reasoning in order to improve nursing education and produce registered nurses of higher competency. Hence, this study aims to explore year 2 nursing students' perceptions towards critical thinking and clinical reasoning, and the barriers faced in developing critical thinking and clinical reasoning.

Methods

A descriptive qualitative design was adopted. 20 nursing students were recruited from a University in Singapore using convenience sampling. Individual face-to-face interviews were conducted using a semi-structured interview guide. The interviews were audio-recorded and transcribed verbatim. Thematic analysis was used to analyse the transcriptions and generate themes according to the research questions.

Results

Seven themes emerged: essentials for nursing practice, linking theory to practice, individual thought process, stimulating strategies, classroom environment, clinical environment and student's attributes. Nursing students perceived critical thinking and clinical reasoning as essential for nursing practice, and described these skills as linking theory to practice. The strategies used to stimulate critical thinking and clinical reasoning were simulations, case studies, clinical experience and the clinical instructor. Barriers to developing critical thinking include tutor to student ratio, ward culture, and student's attitudes towards learning.

Conclusion

This study has explored nursing students' perceptions towards critical thinking and clinical reasoning, as well as the barriers to developing these skills. These findings have provided areas to improve current nursing education and practice to better support nursing students in developing critical thinking and clinical reasoning skills.

CORRELATION BETWEEN CUMULATIVE GPA SCORE WITH NATIONAL BOARD EXAMINATION IN FACULTY OF MEDICINE, PELITA HARAPAN UNIVERSITY

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Background and Aims

The National board of medical examination (UKMPPD) has been implemented since 2014 and has emerged as a new challenge for medicine faculty in Indonesia in which there are thousands "UKMPPD" re-takers. There are several re-takers in our institution. The "UKMPPD" exam consist of computer based test (CBT) and OSCE exam. The "UKMPPD" as a determinant of graduation should represent the process of conducting competency-based curriculum during pre-clinical and clinical programme. Thus, the GPA as a measure of student performance in conducting the curriculum is expected to correlate in achieving the "UKMPPD". The aim is to determine the correlation between cumulative GPA score of students with achieving the "UKMPPD".

Methods

This cross sectional study consisting subject of students who joined "UKMPPD CBT" as first taker and re-taker in 2016. Data obtained were cumulative GPA and the results of "UKMPPD CBT and OSCE". GPA data was grouped into three categories with satisfying, very satisfying, and cum laude predicate. The results of "UKMPPD CBT and OSCE" were grouped by achieving and not achieving. Furthermore, the data was analysed using Pearson and Spearmen correlation test.

Results

There were 181 first taker students and 35 re-taker students. The mean of GPA first taker was 3.39+0.09. The mean of CBT first taker score was 77+5.31. The mean of OSCE first taker score was 76.95+4.59. The CBT first taker was correlated with GPA score ($r=0.257$ $p<0.001$). The OSCE score was correlated with GPA score ($r=0.361$ $p<0.000$). The mean of GPA re-takers was 3.12+0.22. The mean of CBT re-takers was 70.18+2.15. The CBT re-taker was not correlated with GPA score ($r=0.125$ p 0.713)

Conclusion

There is a mild correlation between GPA and UKMPPD CBT and OSCE score in first taker. There is no correlation between GPA and UKMPPD CBT score in re-taker students. This result can provide feedback to institutional managers regarding the process of implementing the curriculum-based competency.

THE PGY1 MONTHLY PERFORMANCE REVIEW MEETING: AN EFFECTIVE PLATFORM FOR SUPERVISION AND EVALUATION OF PGY1 WITHIN THE DEPARTMENT OF INTERNAL MEDICINE IN SINGAPORE GENERAL HOSPITAL

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Background and Aims

The Singapore Medical Council (SMC) sets the criteria for the accreditation of PGY1 training posts with the ultimate aim to maintain educational outcomes and provide a safe environment for PGY1 and patients alike. Supervision and continual review is therefore pivotal to the progress of the trainee. In a large department such as the Department of Internal Medicine in Singapore General Hospital where 60 PGY1 rotate through on the average at any given time, meeting the SMC requirement for a bimonthly meeting between the Clinical Supervisors and Educational Supervisors is challenging. In view of this, it was imperative that a different approach to PGY1 evaluation was adopted in the department.

Methods

We proposed a monthly performance review every third Tuesday of the month to facilitate early identification and counselling of PGY1s who require improvements in their performance. PGY1 feedback from Team Consultants and Senior Residents are collated via email in advance to the meeting and presented in an organised and viewer friendly manner. The clinical supervisors are required to state if the PGY1 falls below, meets or exceeds expectations for which specific examples are cited if they fall in the extreme ends of the spectrum. During the meeting, feedback is shared among the ward consultants, clinical supervisors and educational supervisors alike and PGY1s that do not meet expectations are highlighted. PGY1 who do not meet expectations are required to meet their supervisor to formulate a remediation plan. The progress of underperforming PGY1 is followed up in the subsequent meetings to track for any significant improvements observed in their performance. Outstanding PGY1 are also highlighted for recognition and awarding purposes.

Results

The implementation of the performance review meeting has allowed the department to identify early in the four month posting the PGY1s who fall below expectations. In the year of 2019 between the months of January to July, we identified 11 PGY1s who fell below expectations over the 6 meetings, some of which were inevitably recurrent. They were then followed up in subsequent meetings for any improvements in their performance and appropriate measures were further taken if they continue to fall below expectations. In the annual rotation report where PGY1 were surveyed on whether they felt that the current department's faculty and staff provide an appropriate level of supervision for them as they care for patients, 97% of 119 PGY1s surveyed felt that this occurred frequently to most of the time which reflects the positive amount of perceived adequacy of supervision they receive.

Conclusion

We conclude that the implementation of a monthly performance review meeting for PGY1 not only facilitates meeting SMC supervisory requirements for training, but has since been effective at identifying PGY1 individuals who fall below expectations and require closer supervision throughout their posting. In a large department where PGY1s rotate between teams with multiple senior staff, such a platform encourages an open, multi-weighted and fair discussion among senior staff who have worked with the PGY1 to come a consensus regarding an appropriate follow up and remediation plan for the affected trainee.

EXAMINING THE KNOWLEDGE AND ATTITUDE OF UNDERGRADUATE NURSING STUDENTS REGARDING ACUTE PAIN MANAGEMENT

Kong ML

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Background and Aims

The aim of this study is to examine the knowledge and attitude of the nursing students in an undergraduate programme towards acute pain management. Nurses play an instrumental role in acute pain management. When nurses have knowledge deficit and negative attitude, it can result in poor pain management for patients, and negatively impacts on both the physical and psychological well-being of patients. The foundation of knowledge and attitude towards acute pain management is built in nursing schools, hence it is important to know the nursing students' knowledge and attitude. Limited studies have examined on the nursing students' knowledge and attitude towards acute pain management in Singapore, hence it warrants the need for this study.

Methods

A cross-sectional design was adopted. Convenience sampling was used, and 279 nursing students were recruited from a University in Singapore. A validated instrument, Knowledge and Attitude Survey Regarding Pain (KASRP), was utilised to measure the knowledge and attitude of the nursing students towards acute pain management. Descriptive statistics, independent t-test, one-way ANOVA, and Pearson's correlation test were used for data analysis.

Results

The overall mean KASRP score was 59.5%, indicating that the nursing students have demonstrated inadequate knowledge and negative attitude towards acute pain management. Majority of the participants answered incorrectly for questions that were primarily related to opioids and its pharmacology. The mean KASRP scores were found to have no significant differences across the demographic factors (level of nursing education, age, gender, ethnicity and prior nursing experience).

Conclusion

More emphasis on acute pain management in the nursing curriculum is necessary to improve the nursing students' knowledge and attitude. A longitudinal study is recommended to further observe the nursing students' translation of knowledge into actual pain management practices. Future studies are also recommended to investigate the knowledge and attitude of other nursing populations.

INTRODUCING ANTIBIOTIC STEWARDSHIP TO MEDICAL UNDERGRADUATES USING SCENARIO BASED INTERACTIVE TEACHING METHOD

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[1]Department of Pharmacology, Faculty of Medicine, University of Peradeniya, Sri Lanka, [2]Department of Surgery, Base Hospital, Rikillagaskada, Sri Lanka

Background and Aims

Antibiotic stewardship is defined as the systematic effort to educate and persuade prescribers of antimicrobials to follow evidence based prescribing in order to stem antibiotic overuse and thus antimicrobial resistance. Medical Students need to be taught rational use of antibiotics timely, early in the medical course to nurture good values in future medical practice.

We assessed the student learning and their perception on scenario based interactive teaching method to teach antibiotic stewardship.

Methods

Third year medical students (N=40) of faculty of medicine, Peradeniya, were involved in this study during the period of June to July 2019. Students were grouped, each having 4-5 students. They were given a pre-test to assess their knowledge on rational antibiotic use and reducing antimicrobial resistance. After which, four scenarios were given, on rational antibiotic use, emphasising antibiotic stewardship. Students were encouraged to get the answers discussing within the group members. Then an interactive teaching session was conducted which was facilitated by the teacher, encouraging reflective learning by the students. Following the session, a post-test was given and the teaching feedback was obtained using an anonymised questionnaire in 5 point Likert scale (1= strongly disagree and 5= strongly agree).

Results

40 students participated in the study. Mean marks obtained for the pre-test was 77.7. Whereas for the post-test it was 94.4. The difference was statistically significant. ($p=<0.001$). Students mentioned that scenario based interactive teaching method is an effective way of learning antibiotic use, and pre and post questionnaires were helpful in learning antibiotic stewardship (median = 5 strongly agree).

Also, they opined that the group size was adequate and encourage learning.

Conclusion

Pre and post questionnaires and scenario based interactive teaching in small groups were helpful in improving student's knowledge in antibiotic stewardship, and it was well received by the students.

Saturday 11 January 2020, 9.00am

Aquarius 4, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 6

Systematic Scoping Review of Tools That Measure the Quality of Communication Skills Training for Healthcare Professionals
Yun Ting Ong, Singapore

"Tag-On-Call" - A Tool to Prepare and Assess House Officers Going for the First Night Call
Lourdes Galang, Singapore

Developing Standardised Patients (SP) to Shape Healthcare Professionals
Kia Ying Sandy Tan, Singapore

Using Interactive E-Teaching System in the Post-Graduate Training in Laboratory Medicine
Shiao-Ni Yan, Taiwan

Australian General Practice Training Workplace-Based Assessment Framework
Emily Kirkpatrick, Australia

Primary Health Care in the Age of Advanced Technology and Modern Medicine
Ramon Jason Javier, Philippines

SYSTEMATIC SCOPING REVIEW OF TOOLS THAT MEASURE THE QUALITY OF COMMUNICATION SKILLS TRAINING FOR HEALTHCARE PROFESSIONALS

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Background and Aims

Effective communication is crucial for good clinical care. Yet variability in the manner that communication skills training is assessed has compromised the efforts to evaluate the impact of these interventions. A systematic scoping review was conducted to guide the design of an evidence-based assessment tool for communication skills training.

Methods

Using Arksey and O'Malley's (2005) methodological framework for conducting scoping reviews and identical search strategies, 9 reviewers performed independent literature reviews of prevailing accounts of assessment tools of communication skills training published in 8 databases. Braun and Clarke's (2006) thematic analysis approach was adopted to evaluate across different healthcare and educational settings.

Results

19458 abstracts were identified, 318 full-text articles were reviewed, and 125 articles were thematically analysed to reveal 2 themes: domains of assessment and assessment methods. Domains of assessment include Participant Satisfaction, Communication Competencies, and Broader Outcome Measures. Assessment methods include the use of checklists, scales, transcripts of interviews. Assessors were the trainees, simulated patients, tutors, or patients.

Conclusion

In sketching the landscape of prevailing assessment methods of communications skills to meet its primary research question, this systematic scoping review reveals significant gaps in assessment approaches such as a lack of longitudinal studies, an inconsistency in assessment methods and domains or incomplete forms of assessment. Existing tools also focus on levels one and two of the Kirkpatrick's Training Evaluation Model and rarely consider the impact of communication training holistically. These gaps demand the design of a multidimensional longitudinal tool to evaluate the impact of communication training that will better inform users of the appropriate methods to employ in particular settings and promote better use of communication training. A Delphi process has also begun to determine the most appropriate domains and methods to assess training.

"TAG-ON-CALL" - A TOOL TO PREPARE AND ASSESS HOUSE OFFICERS GOING FOR THE FIRST NIGHT CALL

Galang, Lourdes GL, Han YT, Seto YWD

Department of Internal Medicine, Singapore General Hospital, Singapore

Background and Aims

The first night call for the Post Graduate Year 1 (PGY1) house officer (HO) at the start of his clinical year is daunting. Frequently, HOs feel unprepared for this task. Currently in our Department, there are no existing means of assessing the house officer's preparedness for the first night call. The "tag-on-call" has been set up by medical schools as a means to expose medical students to their eventual role as a house officer on night calls. For majority of schools, this step is compulsory before they enter their PGY1 clinical year. However not all HOs are known to have done "tag on calls". Some HOs have done so but not in the local setting. We have initiated a "tag-on-call" to all HOs before doing their first night call in the Department of Internal Medicine (DIM). Our aim is to prepare new HOs for the night call and get feedback from night call HOs and medical officers (MOs)/residents as to the new HOs safety and preparedness for doing subsequent night calls.

Methods

All HOs rotating in DIM who have not done any night call are rostered to have a "tag-on-call". This starts from 5pm to 10pm on 2 separate nights. This is compulsory before HOs go on night call. Feedback was gathered from the night call HO and MO/resident on call with them. The following areas are assessed: Medical Knowledge, Ability to arrive at a diagnosis and differential diagnosis, Management plans, Ability to handle emergencies, Communications and Professionalism. The feedback gathered will state whether the "tag-on-call HO" is below expectations, meets expectation or exceeds expectation. Comments were also encouraged.

Results

From July 2018 to July 2019, a total of 111 HOs went on tag on call. A total of 237 tag on calls were done. Feedback was gathered from all the HOs/MOs doing the night call. At least 1 feedback per "tag-on-call" (total of 2) were collected and 284 feedbacks were received.

All feedbacks show that "tag on call HOs" meet expectations or above expectations on all the domains detailed above. This can be interpreted that the new HOs are generally prepared for their first night call. This feedback is used in conjunction with Ward Supervisor Evaluation to assess safety for calls. On 2 separate occasions, 2 HOs were deemed not safe by their ward supervisors but this was not reflected on "tag on call" feedback. This may be interpreted as: 1. the duration of "tag-on-call" too short to do a proper assessment and 2. Junior doctors tend to give more leeway to their new colleagues.

Conclusion

The "tag-on-call" is generally regarded as helpful by new HOs going for the first night call. As a tool for assessment, it is used in conjunction with evaluations done by ward doctors (a Consultant or Registrar/Senior Resident of the team) who assess new HOs for a longer period of time during ward rounds.

DEVELOPING STANDARDISED PATIENTS (SP) TO SHAPE HEALTHCARE PROFESSIONALS

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Background and Aims

Tan Tock Seng Hospital (TTSH) has been using SPs for teaching and training our staff and students since 2010. With Pre-Professional Education Office (PPEO) taking over the management of a team of 120 SPs in 2016, there has been an increasing involvement of SP in our teaching programmes. Just 2018 alone, PPEO had recruited 638 SPs for our internal (107) and external (22) educational activities such as examinations, workshops, communication courses and simulated rounds. There is a need to continuously train and develop the SPs to meet the growing demand.

Methods

Recognising that SPs play a pivotal role to help shape our future healthcare professionals, PPEO held our inaugural SP Fiesta in 2018 and a second run in 2019. The event not only served as a platform for SPs to network and socialise, but also with the intent to provide a structured professional development for them. The SP Fiesta was themed "SPs - Shaping Professionals for tomorrow's healthcare". Advanced Practice Nurses (APN) were invited to improve SPs' general knowledge of the various case scenarios in the script. In 2018, SPs were taught self-care such as how they could withdraw from their roles through possible relaxation techniques after acting in a high emotional scenario. They also brainstormed on how they would like to grow and develop themselves in this role. In 2019, the APNs educated the SPs on chronic illnesses and gout. Long Service Awards were also given to the SPs who have stayed with us for 5 years and longer, in recognition of their value and importance that they have brought to our teaching activities.

Results

In 2018, on a 4-point Likert scale, all 64 attendees (100%) rated Strongly Agree or Agree that the topics of the speakers were applicable to their role as SP. 62/64 (96.9%) rated Strongly Agree or Agree that the activities were useful and 62/64 (96.9%) felt that the objectives of the session were met.

In 2019, 46/51 attendees (90.2%) rated Strongly Agree or Agree that the topics of the speakers were applicable to their role as SP. 50/51 (98%) rated Strongly Agree or Agree that the activities were useful and 49/51 (96.1%) felt that the objectives of the session were met.

Conclusion

SP Fiesta has met its objective of addressing SP's personal welfare and developmental needs. Series of workshops covering different scenarios will also be planned to equip the SPs with the skills and knowledge, so that they would be able to portray each scenario more realistically. The intended outcome is for them to help shape our learners to be competent and empathetic future healthcare workers.

USING INTERACTIVE E-TEACHING SYSTEM IN THE POST-GRADUATE TRAINING IN LABORATORY MEDICINE

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Background and Aims

Young generations are familiar with electronic devices and E-learning. We aimed to analyse the learning effectiveness after using interactive E-teaching system in the post-graduate year (PGY) training in Laboratory Medicine.

Methods

Traditional lecturing and paper assessments were used for conventional course before 2016. Interactive E-teaching system, set-up since 2016 using E-curricula for unrestricted learning, Line groups for connection and discussion, and Google Forms for assessment of learning/teaching effectiveness and student feedback, was added into PGY training and defined as interventional course. Hands-on tutoring, which is important for clinical training, remains in both course. Comparison of variables in this historical controlled study were analysed by statistics.

Results

There were 19 students in the conventional course (PGY training in 2012-2015) and 12 students in the interventional course (PGY training in 2016-2017). The median pre-course assessment scores on common laboratory knowledge/skills, basic clinical haematology and basic clinical microscopy had no significant difference in conventional versus interventional group (p=0.45; p=0.87; p=0.76). Students in both groups got score improvements in 3 categories without significant differences (30.98 vs 37.86, p=0.20; 52.40 vs 54.75, p=0.82; 25.0 vs 22.73, p=0.63). However, student feedback rates increased from 24.3% to 92.1% after Google Forms being paralleled to assessment. Average conference or journal article published by PGY trainees increased from 0.89/trainee in 2012-2015 to 1.52/trainee in 2012-2017 after interactive E-teaching system being integrated into PGY training.

Conclusion

Interactive E-teaching system complements the shortcomings of traditional course in immediacy. Google Forms make student feedback more convenient thus increase the response rate. Interactive E-teaching system motivates students to explore and discuss problems in an unrestricted environment thus is associated with learning benefits and even active learning after training.

AUSTRALIAN GENERAL PRACTICE TRAINING WORKPLACE-BASED ASSESSMENT FRAMEWORK

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Background and Aims

Workplace-based Assessments (WBAs) have unique advantages over other assessment types as they permit the direct assessment of a registrar's actual performance. There is no current WBA Framework for Australian General Practice (GP) Training. This comprehensive project was funded by an RACGP Education Research Grant aiming to develop a WBA Framework for Australian GP Training.

Methods

Six simultaneous research projects and an environmental scan, completed over a 7-month period, involved nine GP training organisations (RTOs) representing every state in Australia. A national Steering Group governed the project with guidance from international experts.

Results

The streams of research were: a hermeneutic literature review; an audit of WBAs in the 9 RTOs; a qualitative investigation into direct observation of registrar consultations; focus groups and interviews of 127 registrars, supervisors and medical educators across Australia; quantitative and qualitative analysis of Entrustable Professional Activities as assessment and self-reflection tools in three RTOs; WBAs as predictors for exam performance and remediation. Recommendations are made concerning the WBA tools, the RTO context, the assessors (supervisors, medical educators and external clinical teachers), and the registrars. WBAs are used for low-stakes (formative), high-stakes (summative) and programmatic purposes; medical educators and administrative training coordinators have specific roles in assessment and training; assessors should be trained and supported; and registrars should have a clear, structured but flexible, training programme that is tailored to their need to become safe, independent self-reflective life-long learners.

Conclusion

The resulting WBA Framework is evidence-based, practical, and contextualised to Australian general practice.

PRIMARY HEALTH CARE IN THE AGE OF ADVANCED TECHNOLOGY AND MODERN MEDICINE

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Background and Aims

With the recent passage and signing of Republic Act 11223 or the Universal Health Care (UHC) Act of 2019 during the first quarter of this year, primary health care in the Philippines was once again re-affirmed as the main strategy to attain "health for all," that would lead to better health outcomes through a more efficient utilisation of existing resources. In a healthcare system that had been accustomed for decades to be specialty-centric, the UHC Act would try to refocus on primary care in the grassroots levels and to better navigate the entire healthcare delivery system of the country. This paper determined the perception of clinical clerks (i.e., fourth year medical students) as to the relevance of UHC during their four-week Community Medicine rotation in impacting on the practice of the medical profession in the Philippines, whether directly or indirectly.

Methods

A total of 381 clinical clerks were surveyed, and focus group discussions (i.e., using semi-structured questionnaires) were conducted to elicit the viewpoints of the clinical clerks who completed their required Community Medicine engagement in a semi-rural poor locality in Taytay, Rizal. With prior approval from the institutional ethics review committee, thematic analysis of the responses of the study subjects was subsequently performed.

Results

Though majority of the student-respondents viewed UHC and primary care as relevant, especially in resource-limited settings such as the adopted communities in Taytay, Rizal, some still did not fully comprehend the need to shift the focus of care from a specialty-centric orientation to that of primary health care approach. Medical students were noted to be still very much fixated to become clinical specialists, and the idea of general medicine practice (e.g., Preventive, Family, and Community Medicine; Public Health and Social Medicine) was evidently not very popular among the study subjects. There were still negative perceptions on essential healthcare at the community setting, given the inadequacy of medical facilities and technology, medications, and healthcare services in the locality. Some even opined that socio-political factors remained important determinants of health, which often resulted in inequities in healthcare delivery services, making access to health a bit more difficult for the marginalised and indigent in the community.

The Philippine Academy of Family Physicians had been campaigning for patient-centred, family-focused, community-oriented healthcare to medical students and trainees. This advocated the biopsychosocial approach to medicine, recognising that health and disease had always been influenced a myriad of factors, including social determinants, and could not be easily compartmentalised into only one domain.

Conclusion

In this age of advanced technology and modern medicine, primary health care in the grassroots and resource-limited community levels will need to overcome a lot of socio-political and cultural barriers in the entire Philippine healthcare system, if indeed UHC is to be achieved for every Filipino family in the coming years. Champions of patient-centred, family-focused, community-oriented healthcare ought to be born among the roster of medical students and future Filipino primary care providers, in order to truly realise UHC.

Saturday 11 January 2020, 8.15am

Gemini 1, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 7

Integration of Virtual Patient Simulations to Effectively Nurture and Prepare Medical Professionals
Juanita, Shu Min Kong, Singapore

The Perceived Educational Value of Digital Model Treatment Simulation in Undergraduate Orthodontics Teaching
Shean Han Soh, Singapore

DICED: A Framework for Managing Residents in Difficulty
Faith Chia, Singapore

Technology Associated Communication Education for Physicians: A Scoping Systematic Review
Haziratul Zakirah Ghazali, Singapore

Using Films to Improve Students' Understanding of Psychosocial Aspects of Medicine
Mahboobeh Khabaz Mafinejad, Iran

Quality of Applying Entrustable Professional Activities (EPAs) in Ad-Hoc Assessment in Radiation Therapist Training
Chih-Wei Yang, Taiwan

INTEGRATION OF VIRTUAL PATIENT SIMULATIONS TO EFFECTIVELY NURTURE AND PREPARE MEDICAL PROFESSIONALS

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Background and Aims

Application of virtual patient (VPs) systems in medical education has been increasing in recent years. These systems development increased rapidly to keep up with technology advancement. As an advancing institution, providing medical students with a cutting edge, holistic and well nurtured education is encouraged. VP simulations allows students to practise their skills in communicating with patients independently in a safe environment. These practical scenarios enhance learning in the same way a pilot learns in a flight simulator. Even though interactions are not physically real, students can learn to diagnose a VP emulating a real patient's responses on the webpage chatbot before clerking real patients. The aim of this scoping review is to look at what others in the medical education industry have developed in their VPs, who these VPs impacted, improve on deficits as well as increase the users' benefits from this programme.

Methods

The keywords used for this study's search are 'virtual patient', 'virtual simulator' and 'medical education'. Streamlining it to virtual patients used in educating doctors of tomorrow. Studies selected to review are ensured to be unique and relevant to today's context, they also have to be done after the year 2000, and that their outcomes have to be different from each other. The fulfilment of these criteria ensures a broader perspective and grasp of what has been looked at. Also what has to be further developed to allow people draw a firmer conclusion of previously looked at characteristics of VPs.

Results

Studies in this review had generated positive results from their participants. Participants accessibility to VPs had significantly improved skills that they apply in their practice, resulting to positive reviews about the system. Although some results are inconclusive due to the large range it provided, it has raised the importance to test for users' cognitive abilities ensuring that the VP systems achieves its goals. It was also found that the type of system modelling used by different VP systems gives a different benefit to the seniority of the students in their medical education. Moreover, the main missing measurement was that these studies were not able to look at the participants' benefit in terms of their cognitive abilities. Also, smaller sample sizes were observed, increased sample sizes were recommended to increase the statistical power of future research.

Conclusion

Advancing medical education through developing projects involving VPs to nurture confidence in medical students at different points of their medical training. With more in-depth research, and valid measurements, improvements can be made to the pre-existing designs and additional goals can be introduced to measure in future research. Adding to the field of VPs, the robust experiments would advance the students' benefit from the VP by enhancing their clinical skills. Beginning with a pilot study that a VP chatbot will be exposed to training medical students as they learn to take history from their patients. With easy accessibility, VPs can be used as a form of dynamic practice in a safe environment to assist students in remembering, transferring, and applying skills into their assessment.

THE PERCEIVED EDUCATIONAL VALUE OF DIGITAL MODEL TREATMENT SIMULATION IN UNDERGRADUATE ORTHODONTICS TEACHING

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Background and Aims

Orthodontic treatment planning is a challenging skill set for undergraduate dental students to develop. It involves the cognitive skill of decision-making that is based on the ability to mentally visualise a future outcome from an existing condition. Simulating a future clinical outcome with digital dental model set-ups is hypothesised to help students develop orthodontic treatment planning skills. This study aims to investigate undergraduate dental students' perception of the value of digital dental model treatment simulation on their understanding of treatment principles and the development of orthodontic treatment planning skills.

Methods

Digital model treatment simulation was incorporated into the undergraduate orthodontic curriculum in 2018 at the Faculty of Dentistry, National University of Singapore. Fifty-one Year 3 students were randomly allocated into Intervention (n=25) and Control (n=26) groups. Both groups participated in a treatment planning module; only the Intervention group viewed the digital treatment simulation. The digital model set-ups for the simulations were created by Align Technology, Inc. using the Invisalign Clincheck® software prior to the module. These were based on treatment options determined by two orthodontic clinicians with ≥5 years of experience. The module was conducted over two 2-hour sessions over 2 weeks (one session per week), and comprised ten Incisor Class II Division 1 cases. The pre-treatment records for each case were first provided to the students. Next, up to 3 treatment options were presented (with digital simulations for the Intervention group), and students were asked to indicate their preferred treatment option. The ideal treatment plan for each case was subsequently revealed and justification for the choice was given with the post-treatment photographs. A commentary evaluating the basis of each treatment option was also provided. To gain a qualitative perspective on the undergraduate dental students' attitudes towards the training modules, a user satisfaction questionnaire was administered after module completion.

Results

More than 75% of students in the Intervention group felt that the digital model treatment simulation was easy to use and enhanced the learning value of the training module. It helped in visualising the outcome of the respective treatment options, and enabled them in deciding between the given treatment options.

When compared to the control group, the intervention group had a larger percentage of students who 1) felt they understood the reasons behind the ideal treatment plan, 2) felt the treatment planning module helped them in deciding between treatment options during a subsequent competency assessment, 3) felt the module was useful in developing their orthodontic treatment planning skills, and 4) felt the duration of the training module and number of cases were adequate to develop basic orthodontic treatment planning skills (although the module duration and number of cases were standardised across both groups).

Conclusion

Digital model treatment simulation was perceived by undergraduate dental students as a useful adjunct in understanding orthodontic treatment principles and developing their orthodontic treatment planning skills. Since this study was qualitative in nature, future studies to quantify the effectiveness of digital model treatment simulation in developing orthodontic treatment planning skills are needed.

DICED: A FRAMEWORK FOR MANAGING RESIDENTS IN DIFFICULTY

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Background and Aims

Supporting residents through the stressful period of training is of utmost importance, yet faculty often find managing residents in difficulty one of the most challenging aspects of their work. Our residency received feedback from faculty that they felt ill-equipped to approach cases they may encounter, and sought to develop a framework and workshop to develop skills of our faculty in this area.

Methods

A 3-hour workshop was designed to introduce a framework to approach a resident in difficulty and apply the knowledge subsequently with group discussion and role-play using 4 case scenarios that covered the following topics 1) knowledge and skills deficiency 2) behaviour issues 3) psychological distress 4) professionalism issues. The "DICED" framework is an acronym for Identify Early, Clarify facts and corroborate history, Explore causes (taking into consideration the performance triangle of health, behaviour/attitude and work and home environment), Diagnose and remediate in a bespoke fashion, with an overarching requirement to document everything appropriately being the first D. Recognition that poor performance is usually a symptom and not a diagnosis was emphasised, and differentiation was made between academic and non-academic issues.

Results

There have been two runs of the workshop so far attended by programme directors and core faculty of various residency programmes. Both runs were well received with unanimously positive feedback and 78% of participants strongly agreed that it was applicable to their work. The top learning points highlighted included the use of the DICED framework and the importance of appropriate documentation. Participants also felt that being brought through remediation policies in a step-by-step manner and the discussion of the work processes when managing a crisis situation was useful.

Conclusion

Faculty development for managing residents in difficulty is necessary and having a framework such as "DICED" allows for a more systematic approach.

TECHNOLOGY ASSOCIATED COMMUNICATION EDUCATION FOR PHYSICIANS: A SCOPING SYSTEMATIC REVIEW

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Background and Aims

Effective multidisciplinary communication is crucial in ensuring positive patient outcomes. With the shift in perception on the use of technology in hospital and clinical settings, many hospitals have utilised technological interventions in their studies. This study explores the educational methods of technological interventions.

Methods

A systematic scoping review was conducted. This involved an all-inclusive search on databases such as Embase, CINAHL, PsycINFO, Scopus, PubMed, ERIC, Google Scholar and JStor. The initial search uncovered 17,493 articles. Upon using the inclusion criteria, which were unanimously decided by the authors, and systematic sieving, 10 papers were selected. The papers were then double-coded and thematically analysed. The quality of the 10 full-text papers that have been thematically analysed were then graded using COREQ and MERSQI.

Results

The multidisciplinary communication interventions were classified into synchronous and asynchronous. Synchronous communication tools include mobile communication tools, web-based communication tools and electronic messaging. In contrast to that, asynchronous tools include paging and e-mails. Most of the educational approaches for these interventions are through the use of structured educational programmes and clinical experience. The structured educational programmes mostly comprised of face-to-face orientation sessions and the dissemination of set instructions or guidelines. As for clinical experience as an approach to teach the interventions, most of the studies that used this educational method mandated that participants must be familiar with the intervention for a standard duration prior to inclusion to the study. This means that the participant should be experienced with workflow processes such as conducting ward rounds or paging using the intervention system. Besides outlining the interventions and training methods, we also identified key challenges faced by the researchers. These challenges mostly consist of difficulties in clustering messages based on relevance and importance as well as insufficient time provided for education. Most of the studies discovered that due to the failure to properly cluster messages, it has resulted in interruptions of physicians' workflow. Additionally, insufficient duration of education has resulted in many participants using the interventions inappropriately. Thus, garnering results that may not appropriately reflect the true effectiveness of the intervention.

Conclusion

This systematic scoping review features a comprehensive list of common interventions and training methods which underscores the importance and complexity of improving multidisciplinary communication. In future, studies should focus on improving multidisciplinary communication through the use of more common technology such as mobile devices or tablets. This is an area of interest since not many studies have intervened with that technology. Also, more healthcare professionals are familiar with that type of technology and if a way is found to utilise it to improve communication effectively, it would be extremely convenient and easier to implement. All in all, it is a universal understanding that the direction of multidisciplinary communication improvement is set towards technological interventions. With more studies done to test a variety of such interventions, it is the hope of the scientific community that optimising communication in healthcare will ensure more positive patient outcomes and improved job satisfaction for healthcare professionals.

USING FILMS TO IMPROVE STUDENTS' UNDERSTANDING OF PSYCHOSOCIAL ASPECTS OF MEDICINE

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Background and Aims

Along with the shift toward reforming medical curricula, there are rising concerns about maintaining professional values of future physicians and how humanistic and psychosocial aspects of medicine can be taught and improved during their education. It is obvious that reaching out for all aspects of humanity and psychosocial subjects cannot be achieved with the formal curriculum as a certain module and in a limited time frame. The aim of the study was the use of "cinemedicine" as a tool and technique in teaching psychosocial aspects of medicine to students at Tehran University of Medical Sciences.

Methods

This was an educational study with quantitative and qualitative data analysis. This study is an extracurricular experience that has been held by Art and Media in Medical Education Office (AMMEO) of Tehran University of Medical Sciences for 3 years. The taskforce conducted a survey to identify a series of films related to ethical, social, and psychological issues related to medicine. The film was chosen by the following criteria: (1) The main theme of each film was medicine (2) All of the films contained several aspects of professional behaviours (3) The content of each film pertained to knowledge that students learned in their formal course (4) It stimulated discussion and reflection. Nine sessions were held to teach psychosocial subjects in medicine using films. The duration of each session varied from 3 to 4 hours. Each session began with an initial explanation of the programme objectives. After the show, medicine related points of the film were discussed and analysed by experts and students. In the end, questionnaires were distributed to assess the students' perceptions.

Results

Two hundred seventy medical students participated in this study. Sixty-one percent of participants returned the questionnaire. The results of our study show that most of the students (84%) stated that teaching these subjects through films was a nice event comparing to usual lectures. 56.5 percent of the students agreed with the application of points learned in the events in professional performance. The majority of the students (72.8%) agreed that participating in those events was useful for them as a physician and they would advise other students to attend to later sessions. Content analysis of the students' notes uncovered three categories of cinemedicine: "learning by observation", "creation of a supportive and tangible learning" and "motivation for learning".

Conclusion

Cinemedicine provides the opportunity for medical students to learn psychosocial subjects related to medicine through observing and reflecting on films.

QUALITY OF APPLYING ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPAS) IN AD-HOC ASSESSMENT IN RADIATION THERAPIST TRAINING

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Background and Aims

Entrustable Professional Activities (EPAs) and Observable Practice Activities (OPAs) were currently implemented in our training programme of radiation therapists. This study was to explore the reliability of applying EPAs and OPAs in daily ad-hoc assessment of trainees' performance.

Methods

We constructed and implemented an EPA "simulation for radiotherapy" and its OPAs. An ad-hoc assessment tool was developed based on this EPA and its OPAs. Three trainees' performances of this task were video-taped and then trained clinical faculty were invited to apply this ad-hoc assessment tool to assess these trainees' performance. All entrustability scales were translated into numeric scales for statistics. Cronbach's was calculated to explore the internal consistency. Intra-class correlation coefficient (ICC) was used to evaluate the inter-rater reliability.

Results

Totally 19 clinical faculty members were invited to assess the three video-taped trainees' performance. Cronbach's α were 0.821, 0.855, and 0.915 for each video's assessment respectively. ICCs were 0.919, 0.876, and 0.908 for each video's assessment respectively.

Conclusion

With proper faculty training, EPAs and OPAs can be applied in ad-hoc assessment to provide reliable results.

SHORT COMMUNICATIONS 8

Insights into Communication Deficiencies in Medical Oncology Training Via a Simulated Patient-Family Workshop
Guan Wei Samuel Ow, Singapore

Identifying the Ideal Features of the Gifted Programme for the Undergraduate Medical Education: A Student Perspective
Siwat Techavoranant, Thailand

Improving Rheumatologists' Confidence and Knowledge of Musculoskeletal Anatomy Through Combined Ultrasound and Cadaveric Dissection
Mona Manghani, Singapore

Inter-Professional Education on National Institute Health Stroke Scale (NIHSS) Training Using Off-Site Simulation Approach
Il Fan Tan, Singapore

Senior Residents Orientation Workshop: An Opening Eye to the New Seniority Life in an ACGME– I Paediatric Residency Programme, Qatar
Manasik Hassan, Qatar

MRI-Based Reconstruction Models of Human Brain Intrigue Learning
Chien Nguyen Le, Vietnam

INSIGHTS INTO COMMUNICATION DEFICIENCIES IN MEDICAL ONCOLOGY TRAINING VIA A SIMULATED PATIENT-FAMILY WORKSHOP

[1]Ow GWS, [1]Chee CE, [2]Ng B

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Background and Aims

Effective communication between oncologists and cancer patients is integral but development of communication skills is lacking in Medical Oncology training. We designed a workshop to understand the adequacy of Communication Skills amongst Senior Residents.

Methods

The workshop comprised of 2 scenarios: Discussion of palliative care in a patient with terminal pancreatic cancer; Exploring clinical trials in a patient with metastatic breast cancer. Each scenario was led by a Simulated Patient and Family Member to reflect real-world conditions. 6 Medical Oncology Senior Residents from National University Cancer Institute, Singapore (NCIS) participated, with a Senior Resident playing the role of a medical oncologist in each scenario. Surveys using a 5-point Likert scale were conducted.

Results

Of the 6 participants, 4/6 had attended prior Communication Skills workshops (median 2.5), with only 1 undergoing formal training during senior residency. 100% opined that a Communication Skills workshop would be useful for their training as a medical oncologist, with majority stating this should be conducted at the start of junior (4/6) or senior residency (4/6). 100% felt role-play was more useful compared to didactic lectures/reading materials. 100% were Comfortable (C) / Very Comfortable (VC) in communicating diagnosis of cancer, discussing standard therapies and risks, and introducing palliative care. However, <80% were C/VC in handling challenging situations of collusion (0%), discussing options of traditional medicine (33%), and benefits of clinical trials (67%). Participation revealed critical deficiencies particularly in managing family members' demand for collusion (0% C/VC), managing the hostile or overbearing family member (33% C/VC) and addressing incorrect perceptions of clinical trials (33% C/VC). Topics highlighted for future workshops include managing collusion, breaking bad news and counselling on clinical trials.

Conclusion

A Simulated Patient-Family workshop tailored for Medical Oncology Senior Residents was able to reveal critical deficiencies which can impact on future patient care. Structured Communication Skills training should be integrated into the Medical Oncology Senior Residency program.

IDENTIFYING THE IDEAL FEATURES OF THE GIFTED PROGRAMME FOR THE UNDERGRADUATE MEDICAL EDUCATION: A STUDENT PERSPECTIVE

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Background and Aims

An adaptive curriculum is one of the ten key features of the future medical school proposed by Harden (2018). Talented students should be encouraged and supported to reach the more ambitious goal according to their personal interests. In this study, we identified the ideal features of the gifted programme from the perspective of undergraduate medical students.

Methods

The target population was Year 3-5 Chulalongkorn medical students in 2018 who were competent English user with high GPAX (N=307). By using purposive sampling, semi-structured interviews were conducted until data was saturated. Audio recordings were transcribed verbatim and subsequently coded using Dovetail web application. The project was IRB-approved.

Results

Data was saturated after forty-seven participants were interviewed. Twenty-seven features were identified and then categorised into five themes: mentors, outcomes, time, learning experiences, and programme management & support.

The gifted programme should arrange adequate approachable and inspiring mentors who are supportive and willing to dedicate their time guiding, monitoring and providing feedback. Their experience should match each student's interest and ability. Participants should be engaged in the journey of self-discovery. They should also be informed of the expected output.

The programme's activities should be held in the specifically allocated time especially during the clinical clerkship with a flexible schedule. They should provide some basis before authentic track-specific experience. The learning climate should be collaborative; multi-institutional collaboration is expected. Research funding, scholarship, and support from senior student fellows are always appreciated.

Conclusion

A programme for gifted medical students can be perceived as a supplementary curriculum in addition to the core curriculum. It requires a thorough design of each curricular component: outcomes, learning experiences, time allocation, and programme management & support. Mentorship is, undoubtedly, a crucial part of this curriculum.

IMPROVING RHEUMATOLOGIST'S CONFIDENCE AND KNOWLEDGE OF MUSCULOSKELETAL ANATOMY THROUGH COMBINED ULTRASOUND AND CADAVERIC DISSECTION

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Background and Aims

There is substantial evidence suggesting that musculoskeletal (MSK) examination is taught superficially, and that MSK anatomy is relatively neglected in postgraduate rheumatology training. There has been widespread use of MSK ultrasound (US) amongst rheumatologists, of which a key component is the integration of an accurate knowledge of anatomy with the images obtained. The goal of incorporating MSKUS in practice is to complement physical examination and improve the overall proficiency of rheumatologists. This study aimed to evaluate the benefits of an innovative course combining ultrasound with cadaveric dissection, targeting rheumatologists practising MSKUS.

Methods

A course was developed for rheumatologists practicing MSKUS with the principle focus on first scanning and then dissecting relevant MSK structures. Outcomes measured included confidence levels (rated through visual analogue scales), and objective knowledge (using pre and post course assessments). A mixed methods approach of evaluation and descriptive statistical data analysis was performed.

Results

The mean confidence rating improved in identifying surface anatomy, performing intra-articular injections and recognising sonoanatomical structures following the teaching event.

The change in delegates' confidence ratings after the teaching event as represented by the mean difference ± SD (SEM) for identifying surface anatomy was 1.846 ± 1.281 (0.355), with paired t = 5.196 and p value = 0.000223. The mean difference ± SD (SEM) for performing intra -articular injections was 1.538 ± 1.266 (0.351), with paired t = 4.382, p value = 0.001, and for recognising sonoanatomical structures it was 1.769 ± 1.235 (0.343), with paired t =5.165 and p value = 0.000235.

There was a significant increase in correct identification of anatomical and sonoanatomical knowledge in the pre and post course assessments, especially in areas generally unfamiliar to rheumatologists. Rotator cuff tendon region improved from 13 to 73%; p = 0.004, knee tendons insertion sites from 47 to 93%; p = 0.016 and muscles not adjacent to joints from 27 to 93%; p=0.002. As MSK soft tissue complaints in these areas are common, a greater understanding is likely to improve clinical practice.

Qualitative data themes: Incorporating human cadavers in the US training course was felt to be immensely useful for the visualisation of anatomic structures, learning sonoanatomy, and practicing skills such as probe -needle alignment in relation to anatomical structures with realistic feeling of needle progression. Subsequent dissection of joints and related structures by experienced faculty enabled a three-dimensional relational mind map of the relevant regions of the human body, producing clarity in understanding regional relational topographic anatomy (joints, ligaments and nerves) and relating it to sonoanatomy. This was felt to be the most useful component of the course.

Conclusion

Combining ultrasound and cadaveric dissection demonstrated positive outcomes in learners' satisfaction, confidence and knowledge. There is a continued need for face-to-face and hands on anatomy teaching using dissection in both an ever-advancing digital world and postgraduate setting. Every rheumatologist, especially those practicing MSKUS, needs to have a good grounding of musculoskeletal anatomy. This leads to accurate early diagnosis and cost conscious, effective and better overall care.

INTER-PROFESSIONAL EDUCATION ON NATIONAL INSTITUTE HEALTH STROKE SCALE (NIHSS) TRAINING USING OFF-SITE SIMULATION APPROACH

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Background

National Institute of Health Stroke Scale (NIHSS) is a neurological assessment tool to determine stroke severity and its use is an important skill set for inter-professional team members involved in stroke care. However, NIHSS has many caveats causing discrepancies in scoring. This may affect accurate assessment and treatment decision during urgent or routine assessment. Inter-professional Education (IPE) and off-site simulation are pedagogical methods which are particularly relevant for NIHSS training. It has shown to promote positive learning in a safe environment, without compromising on patient's care.

Aims

The primary objective of this study was to determine if a NIHSS off-site simulation workshop in an IPE setting improves perception of knowledge and skills of participants. Secondarily, we aimed to study if this teaching method promoted inter-professional learning and to get subjective feedback on the programme.

Methods

This simulation workshop was based on four case scenarios which incorporated common issues and errors with NIHSS assessments. To promote inter-professional learning, participants from different professional backgrounds were evenly distributed into 2 groups. The simulation case scenarios used standardised patients with neurological deficits, and participants were given the opportunity to discuss the NIHSS scores and their reasoning. Participants were assessed based on NIHSS assessment accuracy. In addition, the assessors observed the interactions and communications within the inter-professional teams. Learners participated in a survey done immediately following the programme to rate perceptions of their skills and knowledge before and after the course.

Results

There were 5 doctors and 12 nurses who participated in the teaching session. All learners rated their knowledge and skills as "good" to "very good" on a 5-point Likert scale after the workshop compared to before the workshop (41%) (p=0.03). The normality test revealed normal distribution. Overall, there was a significant improvement in knowledge pre workshop (mean=3.53; SD=1.13) and post workshop (mean=4.53; SD=0.51); t=-5.22, p< 0.001.

All participants indicated that the workshop promoted inter-professional learning. Examples of qualitative feedback on the workshop included “the role play assists better understanding”, “seeing different perspective when learning with the doctors” and “practising on simulation patients help to improve learning”.

Conclusion

Off-site simulation workshop with inter-professional approach for NIHSS training was effective in improving participants’ perception of their knowledge and skills. Feedback from participants showed that the IPE and off-site simulation were suitable learning methods for this teaching programme.

SENIOR RESIDENTS ORIENTATION WORKSHOP: AN OPENING EYE TO THE NEW SENIORITY LIFE IN AN ACGME - I PAEDIATRIC RESIDENCY PROGRAMME, QATAR

[1]Hassan M, [2]Eltayeb A, [2]Al Ansari A, [2]Al Hajajji M, [2]Alhammadi A

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Background and Aims

Transitioning into a senior resident represents a challenge in any residency programme. Prior to undertaking their new responsibilities, residents need an organised skilled preparation to overcome struggles that may appear. Formal training session for the new senior residents is an excellent method to enhance their skills and ease into their new senior resident life.

Aim:

1 - To explore important themes needed in the new senior residents

2 - To identify the topics that covered in the orientation workshop

Methods

Cross-sectional prospective study conducted among paediatric senior residents at Sidra medicine in Qatar in July 2019. The evaluation survey was paper-based and was conducted pre and post senior workshop orientation. It included all new senior residents in the paediatric program with details of demographics, their perception about training before starting seniority, and the important topics covered in the orientation according to ACGME core competency and their benefits.

Results

Total 12/15 (80%) of the new senior paediatric residents attended the workshop. In pre workshop evaluation none of them had formal teaching before starting their seniority, important topics listed by them were; senior on call rules and duty, handover, how to approach senior staff (PEC/PICU), teaching skills, recognising sick patient, effective presentations, stress related to leadership and communication and consultations.

A new orientation workshop based on ACGME core competency organised by the residency programme in which 12(100%) of the resident stated that 6 out 8 topics covered fully in the orientation workshop except how to approach senior staff (PEC/PICU) communication and consultations were covered on another date. Upon analysis, the feedback of the topics were given: 12(100%) stated that handover, senior on call rules and duties, recognising sick patients and stress related to leader ship were beneficial and 8/12 (66%) mentioned that teaching skills and effective presentation were beneficial.

All the seniors mentioned that the new senior orientation workshop day was very organised and the overall rating for the day was ranging between 4 (very good) out of 5 and 5 (excellent) out of 5.

Conclusion

The study showed none of the seniors had formal training before seniority, and that new additional workshop by the programme in preparation for seniority is important. Topics covered in the orientation were valuable however; teaching skills and effective presentation were less in the perspective of the seniors.

Transition to a new senior resident’s period require proper training. Residency training programme will help in facilitating the safe transition of that. Multiple approaches such as; orientation workshop, lectures and courses: stress management course can be used to enhance the performance of the new senior residents and smoothen their journey to seniority.

Our study showed that multiple approaches of orientation can be delivered to the new senior and mostly will lead to open their eyes into the new senior resident’s life.

MRI-BASED RECONSTRUCTION MODELS OF HUMAN BRAIN INTRIGUE LEARNING

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Background and Aims

Structural and functional models of human brain are indispensable media that accompany with teaching/learning in anatomy and physiology, especially for the central nervous system. Seldom traditional models, however, could illustrate deep and small cerebral structures. This study evaluated the retention and interests from learners with a lecture on important brain structures using MRI-based human brain reconstruction models in comparison with similar learning activities in learners who experienced the lecture using traditional models.

Methods

60 medical sophomores, who would attend a lecture on limbic and ventricular systems, had been recruited into the study. Subjects were randomly bisected into two groups: the control group received the lecture with traditional media, including drawings and 2D images, and the test group had the lecture with MRI-based human brain reconstruction 3D models and 3D images. Both groups share the same conditions as lecturer and learning ambiences. Retention and understandings of learners about structures and functions of limbic and ventricular systems had been scored. The degree of interesting with the lecture had been themselves-estimated.

Results

The test group went through the lecture with 3D brain models showed more interest to the past lecture ($p < 0.05$), getting higher scores on knowledge retention understanding ($p < 0.05$) with the lecture in comparison with those of the control group.

Conclusion

The findings suggested that applying intuitive and visual descriptive models for teaching could trigger interest in learners via visual effect and encourage their working memory.

SHORT COMMUNICATIONS 9

EQUIPping an Academic Medical Centre With a Sustainable Clinician QI Capability. Developed for the Clinicians. By the Clinicians
Keah How Poon, Singapore

How Does Mongolian Traditional Medicine Bachelor Degree Curriculum Fare With Standards of National Certification Commission for Acupuncture and Oriental Medicine Requirements in the United States of America: A Comparative Study
Regzedmaa Dalanbayar, Mongolia

Effects of Transplant Awareness Talk on Knowledge and Attitude of SingHealth's Staffs on Organ Donation
Shuan Yong Teo, Singapore

Effectiveness of the 3 Good Things Exercise in Reducing Stress and Burnout Among Speech Therapists
Sarah Ying Min Ko, Singapore

The Faculty Development Programme of Ethical Sensitivity Teaching in Medical School
Hou-Chang Chiu, Taiwan

Enhancing Students' Soft-Skills Through Community and Family Health Care- Interprofessional Education (CFHC-IPE)
Lastdes Cristiany Friday Sihombing, Indonesia

EQUIPPING AN ACADEMIC MEDICAL CENTRE WITH A SUSTAINABLE CLINICIAN QI CAPABILITY. DEVELOPED FOR THE CLINICIANS. BY THE CLINICIANS

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Background and Aims

National University Hospital (NUH) had integrated QI project completion in clinical career milestones. EQUIP (Enabling Quality Improvement in Clinical Practice) was developed to teach NUH doctors as well as to develop QI faculty, with the view to support the National University Health System (NUHS) cluster's QI training needs in the future.

Methods

EQUIP's goal was to identify, plan and execute improvement projects throughout the organisation through experiential learning. Training materials and concepts were sourced from centres of excellence (e.g. AHRQ, IHI) aligning topics with the Ministry of Health - National Curriculum. Cost savings/avoidance was a new component added to ingrain value-based care in the minds of our clinicians and the emphasis of adding a 'patient's voice' in the project. The EQUIP framework was designed to ensure that maximal support is given to the clinician leaders. Leadership support is evident with strict nomination and project approval by the Head of Department. Face-to-face engagement between mentor and mentee is emphasised. We pair a doctor with a faculty who is not necessarily from their own department, to offer a fresh perspective while encouraging a peer and collegial relationship. Project aim statements were crafted with ambitious but reasonable goals. The project has a 6 months' completion timeline, a generous timeline to see the effects of the PDSA cycles.

Results

Five workshops were conducted with a total of 67 clinicians trained, comprising 51% Consultant, 32% Associate Consultants, 12% Residents, 5% Senior Consultants. Majority are from Anaesthesia (21%), Medicine (16.4%) and ENT (7%) departments.

The top three project themes were: reducing harm (e.g. reducing needlestick injuries, unnecessary prolonged fasting before surgery, reducing radiation exposure), compliance to best practices (e.g. standardising anaesthesia care, increase vaccination uptake, improving clinical documentation); and prompt discharge/right sighting of patients. Overall, content grading showed an average of 94% good to excellent rate with very favourable verbatims. The project completion rate was 92% as compared to the previous 70%. 72% of the project leaders said that they are likely to take-up another QI project. Six facilitators were added to the faculty pool totalling 15. Cost savings of $227,800 was achieved if external course fee/pax is calculated. However, the most important benefit is laying down the platform for the development of clinician-QI leaders in NUH/NUHS.

Conclusion

The EQUIP facilitators have exhibited ownership and pride for a home-grown programme as compared to the external course. We have seen increased clinician leaders' confidence that they can bring about the necessary change. We are assured that in the infinite number of opportunities in the future, our clinicians can apply what they have learned to patient care. MOH recently completed a mapping exercise of all PSQI courses in Singapore against the National Curriculum, and EQUIP was found to have fully fulfilled the personal and team learning objectives with the potential to organise quality professional teaching.

The EQUIP programme has been extended to revamp the Residents' QI training framework to ensure that a common language and approach to QI are taught to the different clinician ranks.

HOW DOES MONGOLIAN TRADITIONAL MEDICINE BACHELOR DEGREE CURRICULUM FARE WITH STANDARDS OF NATIONAL CERTIFICATION COMMISSION FOR ACUPUNCTURE AND ORIENTAL MEDICINE REQUIREMENTS IN THE UNITED STATES OF AMERICA: A COMPARATIVE STUDY

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Background and Aims

Acupuncture and Oriental Medicine (AOM) has become increasingly popular in the United States and throughout the world over the past decades. The National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) was established in 1982 in U.S. with the purpose of validating entry-level competency in the practice of AOM through professional certification.

Since 2017, The Mongolian Traditional Medicine Bachelor's degree curriculum of International School of Mongolian Medicine (ISMM), Mongolian National University of Medical Sciences (MNUMS) has become eligible for NCCAOM certification. Therefore, the authors aimed to asses and compare of ISMM graduates to become full-fledged NCCAOM certified practitioners and whether there are any room for improvements in ISMM, curriculum.

Methods

Momentary descriptive analytic method was used to compare eligibility requirements of the NCCAOM to Mongolian Traditional Medicine degree curriculum of ISMM, MNUMS of Mongolia.

Results

Doctor of Mongolian Traditional Medicine curriculum of ISMM, MNUMS, is a 6 year Bachelor's degree programme with following structure: Oriental Medicine and Acupuncture Theory 47 credits (1128 hours), Oriental Herbal Studies 7 credits (168 hours), Acupuncture clinical training 10 credits (480 hours), Biomedicine 119 credits (2856 hours), Communications Ethics Practice Management 5 credits (240 hours), Independent Studies 10 credits (240 hours), in total 198 credits (5112 hours). NCCAOM requirements for aspiring practitioners with 4 years AOM degree as follows: Oriental Medicine and Acupuncture Theory 47 credits (705 hours), Oriental Herbal Studies 30 credits (450 hours), Acupuncture clinical training 29 credits (870 hours), Biomedicine 34 credits (510 hours), Communications Ethics Practice Management 9 credits (432 hours), Independent Studies 6 credits (90 hours) in total 146 credits (2625 hours).

While ISMM curriculum adequately fulfils overall NCCAOM requirements, there are several areas where ISMM programme can be further aligned with NCCAOM standards. Percentage share of Mongolian Traditional Medicine coursework at ISMM is 39.8% (79 credits) compared to 76.7% (112 credits) in NCCAOM standards. Percentage share of Biomedicine (Western Medical Sciences) at ISMM is 60.1% (119 credits) compared to 23.2% (34 credits). Heavy skew to Biomedicine is observed in ISMM coursework: 11 times more hours than NCCAOM requirements. What ISMM curriculum lacks is in the area of Herbology and Acupuncture clinical training: almost as twice as less hours are dedicated to Herbology.

Conclusion

Mongolian Traditional Medicine curriculum of ISMM of Mongolia is heavily skewed to Biomedicine compared to NCCAOM standards. The percentage share of Biomedicine so large that significant reduction (80-90%) will not impact ISMM graduates' chances of obtaining NCCAOM certification. While doubling the hours for Herbology and Acupuncture clinical training will bring current ISMM curriculum in the line with standards of NCCAOM. It should be noted that Herbology coursework is not necessary to obtain NCCAOM Acupuncture certification. However, sufficient credit hours in Herbology and Acupuncture clinical training is necessary to obtain the highest NCCAOM certification: The Diplomate of Oriental Medicine.

EFFECTS OF TRANSPLANT AWARENESS TALK ON KNOWLEDGE AND ATTITUDE OF SINGHEALTH'S STAFFS ON ORGAN DONATION

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Background and Aims

Education on organ donation improves not only the knowledge but also the attitude towards organ donation. The SingHealth Duke-NUS Transplant Centre proactively conducts transplant awareness talks to internal staffs, which aimed to increase knowledge on organ donation and correct misconceptions related to it. However, the outcome of such talks has not been evaluated.

Methods

In this retrospective cross-sectional study, voluntary completion of a quantitative and anonymous survey was promoted to assess the knowledge and attitude of internal staffs i.e. doctors, nurses, allied healthcare professionals, administrators, and ancillary towards organ donation. Results of 2356 participants who did not any attend the awareness talk were compared with 2440 participants who attended such talk. Quantitative analysis was performed using chi-square test.

Results

Participants who attended the talk were found to significantly associate with better knowledge in regards to the organs/tissue that can be donated under the Human Organ Transplant Act (HOTA), organ donation legislations, concept of brain death, and funeral arrangement after donation ($p<0.05$). Improvement in attitude towards organ donation was also significantly associated with the attendees ($p<0.001$). Poor knowledge on the organs/tissues donated under HOTA, organ donation legislations, and misconception about organ donation were observed among those who did not attend the talk. Of note, nurses were found to have the poorest knowledge on the HOTA and have the greatest misconception about organ donation among the healthcare professionals. They were also least supportive of organ donation albeit that improved significantly from 68.0% who were supportive among those who did not attend the talk to 77.5% among the attendees ($p<0.001$).

Conclusion

Transplant awareness talk is a useful way to improve the knowledge and attitude of SingHealth's staffs on organ donation. Greater attention in education effort is needed to enhance the knowledge and attitude of nurses on organ donation.

EFFECTIVENESS OF THE 3 GOOD THINGS EXERCISE IN REDUCING STRESS AND BURNOUT AMONG SPEECH THERAPISTS

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Background and Aims

World Health Organisation recently included burn-out as an occupational syndrome in their International Classification of Diseases (ICD). While it is new in the ICD, burnout and stress are not unfamiliar with speech therapists working in the acute hospital.

While the stressors in the hospital are inevitable, more can be done to boost the resilience and happiness of speech therapists. The 3 Good Things exercise has been shown to increase happiness while reducing depression, which may in turn strengthen one's resilience.

This study aims to evaluate the levels of stress and burnout in speech therapists before and after participating in the 3 Good Things exercise for 14 days.

Methods

All speech therapists in the department were invited to participate in this study. Recruitment was done via departmental roll call. Participation was voluntary and participants could opt out of the study at any time.

Participants were asked to complete the following surveys, prior to commencing the 3 Good Things exercise:
Brief Resilience Scale (BRS)
Steen's Happiness Index (SHI)

At the commencement of the exercise, text messages to complete the exercise were sent to each participant daily, before their bedtime. Participants were asked to reflect and log three good parts of their day for 14 days, taking less than 5 minutes each day.

Participants completed the BRS and SHI surveys again at the end of 14 days.

Results

34 speech therapists in the department participated in this study. The baseline BRS mean score was 3.16, which is indicative of normal resilience. The baseline SHI mean score of 54.3 was lower than the mean score (60.6) in another study on a larger group of young adults (close to the age demographics of the department). Interestingly, in another study, the mean SHI score of 55 was found in a group of people with clinically significant levels of depressive symptoms.

Despite daily reminders to complete the exercise, drop-out rates were high. By Day 8, almost half of the participants had stopped the exercise. At the end of 14 days, only 8 participants had completed the entire exercise. The baseline mean scores of those who dropped out (BRS - 3.08, SHI - 52.7) were lower than those who completed the full exercise (BRS - 3.6, SHI - 61).

Interestingly, there was no significant difference in BRS (p value=0.21) or SHI scores (p value=0.18) of the 8 participants pre and post intervention.

Conclusion

Speech Therapists working in an acute hospital experience high levels of stress which in turn can result in lower happiness scores as shown in our study. Fortunately having adequate resilience may act as a defence mechanism against burnout. However this alone may not suffice in the long term.

The 3 Good Things exercise is simple to administer however it appears challenging to comply with the prescribed 14 days of exercise. Future studies could investigate if 7 days of exercise would be equally effective and perhaps be able to encourage participants with lower BRS or SHI scores to participate in the exercise as well.

THE FACULTY DEVELOPMENT PROGRAMME OF ETHICAL SENSITIVITY TEACHING IN MEDICAL SCHOOL

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Background and Aims

Ethical sensitivity is currently highly valued in medical ethics education. During the academic years 2014-2016, our research developed the skills and strategies of the ethical sensitivity teaching. Based on the above results, we expect to develop a three-year teacher educational programme for inheriting the teaching methods and performance assessment tools for exploring students' learning performance and change factors. The ethical sensitivity teaching is expected to have a solid development with the support of teaching methods, expert teachers and assessment tools.

Methods

The programme carries out the module design and teacher training; allowing teachers and experts to participate in the curriculum module design, so that teachers can understand the design principles and purposes of each activity from the process, and promote their capability. With the instruction of experts, teachers conduct practical teaching to learn the skills, thus solving the questions for the novice teachers. The instrument development was divided into three stages. Stage I: case vignettes and item design. The case vignettes included: 1. High reliable and valid cases in the Ethical Sensitivity Instrument for Physicians (designed by the first author) for text adaptation, and 2. 108 selected Clinic Cases in Teaching Hospitals. Ten cases were chosen to design the questionnaire according to 5 principles. The second stage was to implement the expert validity. First, 3 experts were invited to screen out 6 cases and correct the words for the items. Then 10 experts carried out the validity analysis. The final edition consisted of 6 cases, each case with 6 true-false items, to scale "patient needs awareness" and "behaviour consequences imagination". In Stage III, 7 classes of Departments of Medicine and Nursing, Fu-Jen Catholic University, were recruited for the test. Course teachers took an active role to lead the ethical sensitivity education modules, while the experts acted as observers. Each assessment tool had 177 responses. Confirmatory factor analysis was used to verify the composite reliability and construct validity, and the course effectiveness was evaluated then.

Results

(1) The ethical sensitivity learning modules and evaluation tools were well developed; (2) the ethical sensitivity learning modules improved students' ethical sensitivity, especially sensitivity in awareness of the others' needs; (3) the connection between learning modules and students' experience had significant influence on learning effectiveness.

Conclusion

This programme developed a curriculum module suitable for various course conditions, including time limit (single activity, 1~3 weeks course), case type (single case, multiple cases, personal experience as a case), suitable for kinds of teaching purposes, letting the novice teachers easily use experiential learning modules and making it easier to promote and use. The development of assessment tools helped to improve the lack of measurement. On the other hand, a wider application through easy-to-understand measurement method is expected to lay the foundation for teaching, research and practice.

ENHANCING STUDENTS' SOFT-SKILLS THROUGH COMMUNITY AND FAMILY HEALTH CARE-INTERPROFESSIONAL EDUCATION (CFHC-IPE)

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Background and Aims

Acceleration of knowledge, technologies, financing as well as people migration are creating our interconnected world. As future health workers, current students are required to provide evidence-based medicine in the era when the knowledge is easily accessible including to their future patients. Since 2013, we have implemented CFHC-IPE programme at Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada for our undergraduate students. We set up a seven semesters' field programme attaching our students to three families in a group of five. As the intra competencies increases, we set objective of each programme year, i.e. (1) understanding foundation of family and community health, and interprofessional education concept; (2) family health problems discovery; (3) community health problems discovery; and (4) advocating family and community awareness to disaster.

Objective: We are aiming at creating passionate health professionals those embracing not only their core-competencies but also soft-skills i.e. ethics/values, sharing role responsibilities, effective communication and managing team works.

Method

This was an implementation study of the CFHC-IPE programme. The programme was campus based i.e. group dynamics; online lectures; tutorials; seminars and feedbacks; and field based i.e. family and community visits and students' mini-projects. Each supervisor was set to be responsible for three student groups. There were two types of supervisors i.e. a campus lecturer and a health practitioner of primary health center with physicians, nurse and nutritionist backgrounds. We conducted FGDs to students' supervisors evaluating the learning experience and the practiced soft skills. We also assessed the students' reports in particular on how they describe the learning experiences and take the lesson learnt.

Result

Over our five years' experience, we have been implemented the programme for 1588 medical students, 635 nursing students and 439 nutrition students conducted in 774 families in Sleman Regency. Students learned to implement their core knowledge and skills that never been similar with the theories or in skills laboratory. People were dynamics and the students learned to try dealing with their peer groups, families, communities and supervisors. Arranging meeting schedules, setting up conversation topics and achieving learning objectives required soft-skills i.e. ethics/values, sharing role responsibilities, effective communication and managing team works.

Conclusion

As expected, the students are growing and taking lesson learnt through the programme. Thus, we are expecting their future will be contributing to increase patients' experience and population health status, as well as to decrease burnt out among health professionals due to efficient and effective working wherever their future work settings as health professionals with enhanced soft-skills.

SHORT COMMUNICATIONS 10

Exploring the Use of Robotic Process Automation in Deanery Audit Procedures
Canny Chow, Singapore

Medical Students Encountering Death and Dying – A Scoping Review
Joshua Chin Howe Chia, Singapore

Ties That Bind-Communities of Learning in Family Medicine Residency
Chooi Peng Ong, Singapore

A Novel Educational Tool for Teaching Person-Centred Care
Lalit Krishna, Singapore

Comparing Residents of Internal and External Employment With Multi-Source Feedback (MSF): The Experience from Cathay General Hospital
Shu Chen Chen, Taiwan

Adventures in Portfolioland: A Filipino Medical School's Experience With Reflective Learning
Maria Lilia Reyes, Philippines

EXPLORING THE USE OF ROBOTIC PROCESS AUTOMATION IN DEANERY AUDIT PROCEDURES

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Background and Aims

Established in 1905, the NUS Yong Loo Lin School of Medicine is the first institution of higher learning in Singapore and the genesis of the National University of Singapore. The Tim es World University Subject Rankings 2018-2019 and Quacquarelli Symonds (QS) World University Rankings by Subject 2019 list NUS Medicine as Asia's leading medical school.

Despite being one of its most critical processes, the NUS Medicine's Exam Audit team was overwhelmed with back-end testing that involved a labor-intensive process of manual marks compilation. The downloading of assessment raw marks and consolidation of student results limited the capacity of staff to contribute towards value-added aspects of the marks management process.

With assessment being one of the core functions in the School, the NUS Medicine's Exam Audit team was tasked with finding a solution that both reduced duplication and delays and enabled the audit team manage a high-volume of marks compilation while improving the quality and ease of the marks auditing process.

Methods

The NUS Medicine deployed Robotic Process Automation (RPA) technology to reduce manual work and automate a range of administrative processes across marks management, marks validation and auditing. The deployed software bots now automate the entry of assessment marks, validate and audit marks before uploading into NUS Medicine Integrated Marks Management System.

Results

Today, the exam audit team can process student results with less staff managing the process. This translates into increased capacity for teams to conduct more complex components of assessing student matters.

Departments across the School have also been able to manage disparate systems and bridge gaps in student results. By leveraging RPA, staff are no longer required to navigate numerous excel spreadsheets when consolidating results, and validating and checking marks to provide compliance and auditing outputs. Tasks that once took days now take a couple of hours.

For Educators, managing students' results was time-consuming and distracting from creating meaningful learning experiences and driving leading research. By automating core back-end processes, faculty members have been able to dedicate more time to developing their unique areas of expertise and keeping the NUS Medicine, and its students, to inspire health for all.

Conclusion

RPA has allowed the NUS Medicine to increase the efficiency of critical key processes, boost staff engagement, and improve student experience.

MEDICAL STUDENTS ENCOUNTERING DEATH AND DYING - A SCOPING REVIEW

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Background and Aims

Doctoring calls for physicians to cure, comfort and relief suffering, as such medical students are often thrown into emotionally and psychologically intense situations and need to develop resilience in such circumstances. Existing evidence describes death anxiety, compassion fatigue as merely some of the many possible negative impacts that health professionals are faced with. While many studies have reported on the effect of caring for dying patients on physicians, few papers have studied the impact of a dying patient on medical students. Hence, we conducted this scoping review to understand how students can be better equipped and supported to when encountering death and dying.

Methods

We searched for relevant papers published after the year 2000 from seven databases (PubMed, Embase, Psycinfo, ERIC, Cochrane, EBSCO, Web of Science). Two authors independently reviewed the results and selected articles based on the agreed inclusion and exclusion criteria. After reaching consensus on the final list of papers, the two authors independently coded the data using a common coding framework and arrived at our themes through multiple rounds of 'negotiated consensual validation'.

Results

Our search yielded a total of 4924 different papers. 131 articles were selected for full review based on the title and abstract, of which 44 papers were eventually selected for this review. Themes identified in our analysis were classified into three categories: reactions and coping strategies, attitudes about death, and impact on personal and professional relations.

Under reactions and coping strategies, we found that students encountered different emotions, from anger, sadness and guilt, to relief, satisfaction and feeling inspired.

Some students coped negatively through emotional detachment and avoidance, while others coped positively through self-reflection and talking to others.

Students had varied attitudes about death- many came to terms with the normalcy of death as a natural progression of life that is inherent in the practice of medicine, while some were confronted with their own mortality and associated death with failure.

Students related the experience to similar personal experiences with their family. Some students developed an attachment to their patients and their relatives and learnt to understand their needs and provide emotional support. Others found it emotionally challenging to interact with the patients and their loved ones. Students who were well supported by clinicians and healthcare staff found the support comforting and felt that they had a good experience.

Conclusion

Death is inevitable in the practice of medicine. Our data showed that caring for a dying patient is an impactful experience for medical students. Yet, for the relatively inexperienced medical student, the experience of caring for a dying patient can overwhelming. Anticipating these challenges and establishing formal and informal support networks within the medical fraternity will go a long way in helping medical students cope and grow from these experiences. Further attention needs to be paid to empowering students with skills to handle emotionally circumstances to develop psychological and emotional resilience.

TIES THAT BIND-COMMUNITIES OF LEARNING IN FAMILY MEDICINE RESIDENCY

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Background and Aims

Family medicine training encompasses the need to develop a diverse skill-set and the ability to practice in different settings. During training, residents rapidly transit through many hospital rotations with varying specialty-specific competency requirements. They need to contextualize what they learn in hospital to primary care, and effectively integrate knowledge across disciplines. The NUHS family medicine residency has relied upon virtual communities of learners to bring together faculty and residents of varying seniorities and locations for discussion, reflection, and support.

Methods

Over the past few years, communities of learners have been created by residency faculty or residents on a voluntary basis, using an internet-based group messaging platform. A group is often defined by a common supervising faculty member, or a common academic interest, and is administered over the course of the academic year. The group message board is a virtual centre for clinical learning and clarification. Topics discussed usually arise from residents' clinical encounters, with emphasis on contextualising book and hospital knowledge to real-life practice. Additionally, the group platform allows discussions to evolve on current issues relating to professionalism and ethics.

Results

Potential pitfalls include the tendency for discussions to become textbook-type knowledge updates, and for participation to wane as the year progresses. Openness of discussion can be affected by traditional medical hierarchies; richness of discourse is dependent on quality of moderation and participant engagement. As topics for discussion are identified opportunistically, the same topics may be repeatedly identified. Some prerequisites are important. Supervising faculty needs to encourage active participation with provocative questioning, and ensure relevant topics are identified. Senior members need to set the tone of egalitarian discussion; participants need to contribute willingly. The length of contributions should not exceed the attention span of those reading. Faculty should have an idea of what broad topics ought to be discussed over the lifespan of the group, in order to guide discussion beyond the strictly opportunistic. An academic focus is important to ensure the group does not devolve into a social support group.

With care, over time, the message board becomes a useful depository of contextualised, opportunistic, experiential learning for the group.

Conclusion

Virtual communities of learning may be effective enhancements to traditional teaching methods. They are useful in family medicine training where contextualisation of a broad knowledge base needs to be constant and relentless, and opportunities for face-to-face meetings are limited by logistics. The extended virtual discussion is also a useful platform by which to teach affective domain skills, such as attitudes and values. Finally, by bringing together learners of varying seniorities, role modelling, mentoring, camaraderie, and a certain emotional support are happy by-products.

A NOVEL EDUCATIONAL TOOL FOR TEACHING PERSON-CENTRED CARE

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Background and Aims

Developing a person-centred approach to caring for patients is important for nurturing professionalism and humanistic attitudes in medical students and trainees. Personhood or "what makes you, you" is key to person-centred care in end of life care and is informed by societal and individual conceptions of personhood. Understanding how individuals conceive their personhood impacts how clinicians craft their discussions with patients. The Ring Theory of Personhood (RToP) suggests that personhood can be represented by 4 concentric rings. The innate ring that respects the worth and dignity of each individual, the individual ring represents the individual's experience and agency in establishing and maintaining personal identity. Relational personhood refers to the relationships which individuals that the individual considers important. The societal ring, the outermost ring is determined by the manner that personhood is conceived in their society and the individual's role in the society. We propose the use of the RToP as an educational tool for training students to gain a holistic understanding of their patients, to contextualise medical decision-making in a person-centred manner and to individualise their approaches for effective communication in their interactions with their patients.

Methods

A mixed methods study was carried out to develop a local understanding of what personhood means in the Singaporean context. 162 geriatric and non-geriatric Oncology patients in Singapore were recruited and participated in the locally adapted and validated version of Bishop Merrill's 26 element Personhood questionnaire. This was followed by semi-structured interviews to explore patient's understanding of their own personhood. Ground theory approach was adopted and coding and thematic analysis was carried out.

Results

Patients were able to employ the RToP to determine their personhood. An interesting finding has been that perceptions of personhood shift with age and life experiences with increasing age shifting primacy in personhood from prioritizing individual personhood to a mix of individual and relational aspects of their personhood. The RToP has been adapted into an educational tool with various forms of implementation, e.g. clerking framework to facilitate student's reflections on their patient's journey. This tool allowed students to view their patients as persons and shift towards a more humanistic paradigm, and was piloted during reflective sessions carried out during their clinical year.

Conclusion

Whilst the RToP was developed to facilitated best interest decision making and help patients and facilitate decision making in the palliative and oncology setting, it can be adapted as an educational tool to develop humanistic person-centred attitudes, ethics training and also facilitate communication training in medical students and trainees. The potential impact of this education tool is vast and provide a timely solution to empathy training, person-centred communications skills training and also professionalism.

COMPARING RESIDENTS OF INTERNAL AND EXTERNAL EMPLOYMENT WITH MULTI-SOURCE FEEDBACK (MSF): THE EXPERIENCE FROM CATHAY GENERAL HOSPITAL

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Background and Aims

The recruits of post graduated year (PGY) students are very competitive in Taiwan. All hospitals will try their best to attract PGY students; in addition to better salary, PGY students of each hospital have higher chances to become internally employed residents in the future. Cathay General Hospital uses to recruit internally employed residents, and only the vacant positions are left for externally employed residents. The current study is going to compare internally and externally employed residents, their performance during resident and PGY periods.

Methods

During May and July 2019, 122 residents of our hospital were evaluated with multi-source feedback (MSF) from their teachers, nurses, and colleagues. The completion rate was 100%. The MSF evaluation was based on the six core competencies from the ACGME, and was rated between 1-10.

Results

There was no difference in scores among the six ACGME core competencies, including patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism. There was no difference between different grades of internally and externally employed residents either. Internally employed residents displayed better ability in system-based practice of the six ACGME core competencies during their PGY periods. In addition, the highest rated MSF scores were five by nurses, followed by their colleagues, then attending physicians.

Conclusion

Through MSF evaluation, the overall performance was comparable between residents of internal and external employment. Better system-based practice scores observed from internally employed residents may result from their familiarity with practice pattern of the corresponding hospital.

ADVENTURES IN PORTFOLIOLAND: A FILIPINO MEDICAL SCHOOL'S EXPERIENCE WITH REFLECTIVE LEARNING

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Background and Aims

Student portfolios as an alternative learning strategy have been utilised by medical institutions in different ways for more than a decade. The challenge to educators is how to seamlessly integrate this form of learning into a traditionally "graded" curriculum to which Filipino students and teachers are more accustomed to; that is, how to make such changes in the curriculum acceptable and comprehensible to both teachers and students alike. The initial answer to this challenge was the construction of grading rubrics, a format which would be revisited and revised periodically as the students' feedback of the curriculum were evaluated every year. The Department of Biochemistry has been conducting student portfolio surveys for the past seven years, with the primary aim of continuous improvement of its teaching strategies to facilitate student appreciation for lifelong reflective learning. It was expected that exploring the student responses to the survey would reveal trends or patterns that would be useful in making the portfolios more relevant. It may also serve to enhance understanding of important medical biochemistry concepts that are encountered in sample clinical cases.

Methods

Student portfolio survey responses were analysed and examined in the light of the narrative reflections or responses of students who gave additional comments in the questionnaires. Several items in the questionnaire also included student attitude towards learning, and if the portfolio making was contributory or detrimental to their learning process. Frequent responses or terms that figured in the narrative comments were also evaluated.

Results

Several areas of concern were noted, such as: time allotment for making the portfolio and meeting with the individual portfolio advisers, difficulty in understanding the learning objectives, difficulty in understanding the grading rubrics, subjective manner in which grades were given (i.e., the perception that some students have lenient professors, while others are stricter in grading, despite using a common rubric). There appeared to be no significant differences between those who thought that the portfolios were helpful and those who thought that the portfolios were not helpful at all. Overall, the tone of the narrative comments was positive.

Conclusion

The implementation of student portfolios as a learning strategy appears to have met with mixed success in our institutional setting. Its inclusion into a traditionally graded curriculum still has its strengths, however, in that as the years go by, student reactions have become more positive and receptive to such an exercise. Even students who admit to less than creative inclinations or talents have found meaning and relevance in applying themselves to simple portfolios. Just like any other learning strategy, the use of pen and paper portfolios has profound impact on learning and teaching in an increasingly AI-dependent world. Belated as our entry might be into e-portfolios, we hope the experience has further strengthened our resolve to cultivate new generations of healers and teachers.

SHORT COMMUNICATIONS 11

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Yen Tze Liu, Taiwan

Project Hope – Simulation-Based Workshop for House Officers On-Call to Improve Confidence and Competence
Joel Xianguang Yee, Singapore

RIPLE Effects: Reverberating Educational Outcomes from an Overseas Community Involvement Programme
Jamie Lim, Singapore

Training Students to be Near-Peer Mentors
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Mei Li Khong, Hong Kong S.A.R.

Reducing Duration of In-House Calls for Junior Residents to Improve Mental Well-Being – A Pilot Study in the Haematology – Oncology Department of a Teaching Hospital
Winnie Teo, Singapore

THE LEARNING FROM BALINT GROUP IN FAMILY MEDICINE RESIDENTS

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Background and Aims

Balint group (BG), developed by Michael Balint in 1964, was originally a supportive discussion group for general practitioners to improve the doctor-patient relationship, and provides an effective setting for health professionals to reflect on their practice. BG has been applied in medical education because of the effect of establishing self-awareness and self-reflection, fostering empathy and resilience, and improving communication skills. BG activity (BGA) was implemented in the Department of Family Medicine (FM) in Changhua Christian Hospital (CCH) for 5 years. The BGA guided by a trained facilitator was held once a month as a regular activity for all FM residents. BG was conducted as a form of case-based discussion. Participants usually described a difficulty or any clinical context to initiate the discussion, and all participants were allowed discussion of any topic that occupies a physician's mind outside of his or her usual clinical encounters. Our aim of this study is to evaluate the learning achievements and course satisfaction of BG in all participants.

Methods

We conducted a questionnaire survey using Likert 5-point scale to evaluate the learning achievements (category A) and course satisfaction (category B) of BG. The poll was applied to 20 residents in the Department of FM. The questionnaire consisted of 13 items including 8 items in category A, and 5 items in category B. We also collected feedback and comments on BGA from the participating residents.

Results

Regarding to the category A learning achievements, the data shows high scores (4.40~4.65) in all 8 items. Among of them, A1 (I can take into account the needs of all participants) and A6 (Participating can help me understand the doctor-patient relationship) are the highest (4.65). On the category of course satisfaction, the data also shows high score (4.5~4.65) in all 5 items. Furthermore, all participants responded positively on BGA and enjoyed the learning experiences; e.g., one resident feedback "Participants shared experiences and used different coping strategies in clinical practice, therefore we can think critically and learn from each other instead of judgement of treating patient good or bad". Our results demonstrated BG is helpful to improve physicians' abilities to actively process and deliver patient-centred care through a deeper understanding of how they are touched by the emotional content of caring for certain patients.

Conclusion

Our study support that BGA is beneficial to improve the quality of self-reflection, and to foster empathy and resilience of a physician in FM residency training. We suggest that BG can be adapted to other kind of teaching or clinical setting in undergraduate, postgraduate or CME professional development.

PROJECT HOPE - SIMULATION-BASED WORKSHOP FOR HOUSE OFFICERS ON CALL TO IMPROVE CONFIDENCE AND COMPETENCE

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Background and Aims

Housemanship is a challenging experience for many in view of the shift from medical school to real practice, with first-year doctors lacking experience and confidence. To address this, many institutions have introduced training courses to better prepare junior doctors, including the pre-intern (PrInt) education package by McKenzie and UMUST (Unexpected Medical Undergraduate Simulation Training) programme by Watmough, both resulting in increased confidence and knowledge. This study examines the impact of an intervention in the form of an interactive workshop to better prepare and improve the confidence of house officers (HOs) prior to their first call in the Department of Internal Medicine (DIM), Singapore General Hospital (SGH).

Methods

Pre-intervention analysis was conducted in Nov 2018 by surveying 29 house officers and 94 medical officers (MOs) within DIM, SGH. Significantly, 86.2% of HOs had encountered situations on call that they were not confident of managing. 55% felt that they were not well prepared to go on call. Furthermore, 24% of the MOs felt that their HOs had compromised patient safety. An intervention targeting HOs was conceived and implemented. Project HOPE (House Officer Preparation Exercise) was conducted in May 2019, and this workshop comprised of multiple OSCE-style stations that simulated acutely deteriorating patients, difficult communication tasks, and common bedside procedures. Scenarios were chosen based on what HOs and MOs identified as common errors and gaps in on-call management. Immediate feedback by near-peer seniors was provided and all participants were subject to a post-workshop survey for evaluation feedback.

Results

32 out of 54 HOs attended the workshop, of which 23 responded to the post-workshop questionnaire. 95.8% of respondents felt more or extremely confident to deal with on-call situations. All would recommend the workshop to future HOs. All felt that the workshop content was relevant or extremely relevant. 34.8% of respondents had attended a similar workshop during medical school, but all of them felt that this workshop was helpful.

Conclusion

The workshop helped to improve HOs' confidence in dealing with on-call situations. This workshop also demonstrated the benefits of a near-peer led course, having the tutors being people with practical on-the-ground knowledge rather than a far-removed faculty. Some challenges we faced include labour intensiveness in conducting the course, difficulty in finding a common date for the workshop and difficulty in differentiating baseline knowledge and skill levels of the HOs. With this workshop as our starting point, we plan to include pre-and-post workshop knowledge-based questionnaires in our next workshop during the later part of 2019 to see if there is objective improvement. In DIM SGH, there are also several further initiatives including active feedback from MOs to HOs, HO peer learning sessions, as well as setting in place longitudinal mentorship between HOs and DIM resident mentors. Through these interventions, it is hoped that the transition from medical student to HO can become smoother.

RIPLE EFFECTS: REVERBERATING EDUCATIONAL OUTCOMES FROM AN OVERSEAS COMMUNITY INVOLVEMENT PROGRAMME

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Background and Aims

Since 2015, a team of doctors, nurses and pharmacist have been volunteering yearly at Mae Tao Clinic (MTC), a community-based organization that provides inpatient and outpatient healthcare for displaced people living in the Thai-Burma border area. Every year medical students from Lee Kong Chian School of Medicine accompany the team as part of an Overseas Community Involvement Programme (OCIP). In 2017 and 2019, Advanced Practice Nurse Interns (APNIs) from Tan Tock Seng Hospital (TTSH) joined in as well. The main objective for the learners was to learn how healthcare is delivered in a rural, resource-limited setting. The hidden curriculum was to foster rural-interprofessional-learning-and-education (RIPLE).

Methods

The visiting healthcare team consists of physicians from various disciplines, senior nurses with both clinical and administrative experience, and a pharmacist. During each one-week stay in MTC, the physicians and nurses worked with the MTC healthcare team who is made up of healthcare workers known as medics to provide patient care. The medical students and APNIs joined different healthcare teams in the inpatient (medical, surgical, paediatric and maternity) and outpatient settings.

The learners practiced history taking and conducting physical examination on patients, many of whom had clinical conditions and signs that they would not have encountered in clinical practice in urban Singapore. The learners had to practice medicine using basic clinical skills and acumen, without access to advance diagnostic tests.

At the end of each day, the learners would discuss the cases and key learning points, facilitated by a physician or nurse. Clinical case logs and interesting radiological images were compiled and shared. Learning was documented through personal reflections.

Results

Nine medical students and 3 APNIs participated in the 2017 and 2019 trips. Upon their return to Singapore, the learners continued to stay in contact through social media and mobile apps. There were unplanned interprofessional education that persisted over the subsequent months. While preparing for their national high-stake examination, the APNIs requested and received additional teaching from the medical students. The APNIs who had many years of working experience, provided advice regarding institutional work processes and other hospital-related matters to their future medical colleagues during their clinical postings.

The RIPLE effects were highlighted in the learners' reflections. Quoting Student G, "I'm ever grateful to Prof T, Dr V, Sister J, Sister F and Sister GS for demonstrating Osler's golden axiom when they taught and inspired us on how to transcend above merely learning about diseases ....". Another quote from Student F, "... the importance of good interprofessional team work was amplified when faced with scarce resources."

Conclusion

Many medical students have had OCIP experiences where the participants and faculty are predominantly uniprofessional. Our RIPLE OCIP model provided additional outcomes such as building friendships and bonds between the medical students and the APNIs and also between the faculty and learners. The benefits were not limited to gaining explicit clinical knowledge but also tacit knowledge as our learners have built bonds and are supporting each other in their learning journeys.

TRAINING STUDENTS TO BE NEAR-PEER MENTORS

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Background and Aims

Near-peer mentoring (NP mentoring) "involves a more experienced medical student mentoring an inexperienced medical student". Near-peer mentoring has gained in popularity in recent years and has proven to benefit near-peer mentors and mentees alike. Near-peer mentors undergo training for leadership and teamwork skills whilst their mentees benefit uniquely from working with a near-peer mentor who might be able to better empathise with them and understand their needs. With this in mind the Palliative Medicine Initiative (PMI) developed an initiative to train near-peer mentors, in addition to mentoring of students by faculty mentors for research

Methods

Near-peer mentors are closely supported and supervised by a primary faculty mentor and a secondary faculty mentor depending on the projects to which they and their teams were assigned. Informal interviews were conducted with the near-peer mentors to obtain feedback about how mentors were coping, challenges they have faced, such that support and training from the faculty mentors could be tailored to adapt to the individual needs of the near peer mentors. Responses given by mentors was recorded and data analysed.

Results

Near-peer mentors' motivations include the desire to for receive training for mentoring and leadership skills and to process from mentee to the role of a near-peer mentor. Near-peer mentoring was viewed as a form of paying-it-forward and associated with a sense of belonging to the mentoring group. Challenges faced by near-peer mentors include stress caused by juggling competing commitments and also managing the group dynamics of the teams they mentor. Support of the faculty mentors and coaching for leadership and communication with their teams enabled them to overcome these challenges. Most of the near-peer mentors felt that this allowed them to grow and were keen to continue being mentors.

Conclusion

Near-peer mentoring has clear benefits for mentors and mentees alike. Training students to be near-peer mentors allowed a platform for them to work on their leadership, teamwork and communication skills with other colleagues under the close supervision of the assigned faculty mentor. Near-peer mentors felt empowered to grow in a safe space where they were coached and supported through problems that arose. Future iterations of the PMI is currently looking at how the support and training for near-peer mentors could be more structured and formalised to allow this program to benefit more students.

BRIDGING TEACHING AND RESEARCH THROUGH A BIOMEDICAL TRANSDISCIPLINARY TEAM PROJECT COMMON CORE COURSE

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Background and Aims

It is pedagogically challenging to achieve deeper biomedical undergraduate curricula aims of 'tackling novel situations and ill-defined problems' and 'leadership and advocacy for the improvement of the human condition' through traditional lecture-based models. There needs to be an alternative teaching model that is inquiry-based, collaborative, and relevant to real-world challenges to achieve the aforementioned aims. As an alternative model, we consider bridging teaching and research through a biomedical transdisciplinary team project (TTP) course in Common Core curriculum - a transdisciplinary-organised undergraduate curriculum in The University of Hong Kong. Here, we designed, delivered, and evaluated a student-led TTP which connects students across disciplines to collaborate on a biomedical project with potential for impact.

Methods

TTP consisted of a team of students from varying disciplines collaborating to identify global issues and develop projects through critical questioning of how biomedical science could make a positive impact to the society. Throughout the students' project, course teachers assumed a supervisory role while the project was completely student-led. Within the student team, some students were engaged in direct research, others in knowledge exchange with community whilst building local and international collaborations to strengthen their study. TTP was evaluated by triangulation of data from a mixed-methods approach to allow a holistic view of student learning by interpretation from multiple perspectives. Quantitative evaluation was done by a 5-point Likert scale questionnaire with constructs of experience, student development, preparation, assessment and outcomes in order to analyse student learning from an objective manner. Qualitative evaluation was performed with written open-ended questions survey to allow deeper understanding of certain subject matter from constructs in quantitative study. Impact on student learning was also evaluated through fulfilment of student project deliverables and its alignment with course learning outcomes.

Results

Quantitative student evaluation indicated positive impact of TTP with average 5-point Likert scores of more or equal to 3.8 over 5 in constructs related to promoting student learning; development of skills and knowledge; interest and curiosity; social skills and attitudes; and higher order thinking skills. In the qualitative evaluation, TTP was evidently rewarding in common themes such as enhancing research skills, sharing expertise, and providing a larger pool for knowledge exchange and division of labour; all of which enabled the following achievements. In the first offering of this course, students investigated the awareness of the local and international community towards the understudied global epidemic, Hepatitis C infection. Students also developed cost-effective 3D-printed diagnostics for Hepatitis C diagnosis. All in all, students excelled in creating solutions to the challenges of early Hepatitis C diagnosis through transdisciplinary collaboration. Students subsequently communicated research findings to the general community through academic publication, educational workshops in local and global institutions, and website. These observations were consistent with quantitative and qualitative data indicating that TTP was able to achieve the deeper aims of undergraduate curricula, in addition to, promoting meaningful communication and collaboration within students and the general public.

Conclusion

A student-led TTP course encompassing effective teaching-research nexus would allow for student learning in the highest cognitive domain - creating solutions to global health issues.

REDUCING DURATION OF IN-HOUSE CALLS FOR JUNIOR RESIDENTS TO IMPROVE MENTAL WELL-BEING - A PILOT STUDY IN THE HEMATOLOGY - ONCOLOGY DEPARTMENT OF A TEACHING HOSPITAL

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Background and Aims

Junior residents rotating through haematology-oncology (HO) posting are regularly scheduled to do half calls (5-8pm) after having worked from 8am-5pm. Residents on half calls are expected to clerk newly admitted patients, as well as review problems existing patients have. They are often not able to complete their tasks before 8pm and would end work much later. This results in residents exceeding recommended duty hours, causing stress and immense dissatisfaction.

Methods

A two-part study was carried out - residents who rotated through HO from June 2016 - May 2017 were surveyed on their experiences on half calls (5-8pm), with suggestions for changes. A pilot study was then carried out from May - July 2017, with residents initially spending 1 month doing calls with the existing structure, followed by 2 months of the new call schedule.

Results

25 residents participated in the first part of the study. Majority (52%) felt extremely dissatisfied with the call timings and an overwhelming proportion (76%) expressed frustration at only being able to leave 2-3 hours after end of call due to both ward duties and new admissions (72%). 64% dealt with 5-7 new admissions on average per call, with 100% seeing 1-3 new admissions from 7.30-8pm. 98% wanted a change in the half call timings or redistribution of work.

In response to the feedback, call duration was reduced to 2.5 hours with earlier handover to the night team at 7.30pm. 9 new residents underwent the pilot study - they followed the existing half-call schedule (5-8pm) for 1 month before the new schedule (5 – 7.30pm) for 2 months from May-July 2017. 100% managed to leave on time or earlier and 89% were satisfied with the change. Most of them felt that this increased their productivity and improved their mental well-being.

Conclusion

Restructuring call schedules in response to residents' feedback can bring about increased satisfaction and improved mental health.

Implementing changes to busy call schedules can be a challenge in tertiary hospitals with increasing workload, but it should nonetheless be a priority to optimise mental well-being and productivity of residents.

SHORT COMMUNICATIONS 12

Comparisons of Educational Factors and Stress Level Between Students who Changed and Did Not Change Their Vark Learning Style from the First to the Second Preclinical Year
Vasu Lertsiripatarajit, Thailand

Lessons on Resilience - Learning from Paediatric Critical Care Nurses
Michelle Khoo, Singapore

Residents as Educators in the Basic Suturing Skills Training: Impact and Challenges
Zaw Lwin, Singapore

Application of the Mini-CEX in Clerkship Formative Assessment At 5 UMPs in Vietnam
Van Tran Thong, Vietnam

How Students Experience Integration and Perceive Development of the Ability to Integrate Learning
Shalote Rudo Chipamaunga, Zimbabwe

Empowering Blended Learning by Real-Time Data Visualisation and Timely Feedback
Eugenie Phyu Aye Thwin, Singapore

COMPARISONS OF EDUCATIONAL FACTORS AND STRESS LEVEL BETWEEN STUDENTS WHO CHANGED AND DID NOT CHANGE THEIR VARK LEARNING STYLE FROM THE FIRST TO THE SECOND PRECLINICAL YEAR

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Background and Aims

VARK learning style, which are visual (V), auditory (A), reading/writing (R), and kinaesthetic (K), is one of the most used learning style models. This learning style proposes that students use different sensory modalities for processing knowledge and information. The students' learning environment is one of the influencing factors that causes different learning preference and response of each individual. This study aimed to 1) determine the change of VARK learning style according to the change of the learning environment from the 1st preclinical year (Preclinic1) to the 2nd preclinical year (Preclinic2) and 2) compare GPA, percentile of GPA, percentage of achievement of study target, and stress level between students who changed and did not change their learning style from Preclinic1 to Preclinic2.

Methods

Questionnaires were sent to students at the end of Preclinic1 and Preclinic2 with 87.20% (286/328) and 92.99% (305/328) being returned, respectively. The English language VARK Questionnaire version 7.8 was used in this study. Students were allocated into 2 groups which were the "no-change" and "change" groups. The no-change group refers to students who had the same learning preference in Preclinic1 and Preclinic2 while the change group refers to students who had different learning preference between Preclinic1 and Preclinic2.

Results

For distribution of VARK learning style in Preclinic1 and Preclinic2, most of the students were multimodal learners (65.03% and 69.51%, respectively), while the rest of them were unimodal learners (34.97% and 30.49%, respectively). For the mean VARK score, K score was highest followed by V, A, and R, respectively, in Preclinic1 while V was highest followed by K, A, and R, respectively in Preclinic2. When these students changed from Preclinic1 to Preclinic2, two-third of them (69.3%) changed their learning preference while the rest of them (30.7%) did not. In Preclinic1 and Preclinic2, GPA and percentile of GPA of the no-change group were significantly higher than the change group ($p<0.01$ all). Interestingly, GPA of the change group in Preclinic2 was significantly lower than their GPA in Preclinic1 ($p<0.01$). Achievement of study targets and stress level of the no-change group were comparable to those of the change group in Preclinic1 but these factors were significantly higher in the no-change group compared to the change group in Preclinic2 ($p<0.05$ all). Furthermore, the change group had significantly lower achievement of study targets and stress level in Preclinic2 compared to theirs in Preclinic1 ($p<0.01$ all).

Conclusion

Most students changed their learning style which might be probably due to the change of the learning environment from Preclinic1 to Preclinic2. Students who did not change their learning preference had a better academic performance including academic outcomes and achievement of study target than students who did. Furthermore, students who changed their learning preference had lower stress level compared to theirs in the previous year.

LESSONS ON RESILIENCE - LEARNING FROM PAEDIATRIC CRITICAL CARE NURSES

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Background

Caring for dying children and their families in neonatal and paediatric intensive care units (NICU and PICU) can take an immense emotional toll on staff. This is especially so for nurses who provide round-the-clock care, spending the hours with critically ill children and building a professional relationship with their families. Despite the challenges of a clinically demanding setting compounded by the emotional toll of caring for children with life threatening illnesses, nurses have demonstrated resilience which allows them to both survive in their work setting and find satisfaction in their work.

Aims

The purpose of this scoping review is first to determine how caring for dying children in the NICU and PICU has affected nurses in terms of their affective response and behaviour; and to identify key factors accounting for resilience, and secondly to derive lessons from their experiences.

Methods

The initial search, focusing on the impact of dying children on nurses in critical care units, was conducted on databases PubMed, Embase, ERIC, CINAHL, PsychINFO and Cochrane Library which retrieved 9148 titles. 105 papers were subsequently evaluated for inclusion via a full-text sieve. After using the agreed-upon inclusion criteria, 49 papers were independently analysed by two authors. The texts were coded, and the data was analysed using Braun and Clarke's approach to thematic analysis. The research team achieved consensus at each step.

Results

Both qualitative and quantitative data were reviewed, and the evidence suggests that due to their unique relationships with the patients and their families, nurses developed coping strategies to deal with stress, grief, burnout, moral distress and compassion fatigue and hence achieve resilience. As part of their coping strategies, nurses found closure through attending funerals, having team debriefings after a patient passes on and by organising memorial services. Relationships that nurses had in the ICUs, such as with the patient's family and with their co-workers, were also instrumental in ameliorating or exacerbating emotional outcomes. However, emotional hardship, especially grief, affected their sense of self, making it more likely that nurses would avoid caring for dying children, which ultimately led to job attrition.

Principal lessons identified include:

1. Peer support is the most crucial influence when coping with emotional hardship
2. Grief must be embraced as part of the human experience in order to overcome it and build a meaningful practice.
3. Professional boundaries between the nurse and the patient's family need to be identified early on.
4. Adverse patient outcomes can result when nurses are either facing distress, or when they are not involved in decisions about patient care.

Conclusion

In the face of emotional adversity, nurses have developed numerous coping strategies when a child passes away. Resilient nurses have been shown to contribute to patient care and their participation improves outcomes. Contributory factors to their resilience include developing protective strategies such as acceptance of their grief and maintaining professional boundaries without sacrificing empathy as well as strong peer support. These findings may serve to inform the development of an effective resilience building programme for not only medical students, but all healthcare professionals.

RESIDENTS AS EDUCATORS IN THE BASIC SUTURING SKILLS TRAINING: IMPACT AND CHALLENGES

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Background and Aims

The four-component instructional design (4C/ID) by van Merriënboer has recently been adopted in the basic suturing skills training for medical officers in the Children's Emergency. The role of the facilitators in the practice session of the skills training is crucial to provide just-in-time (JIT) information, which is the third component of the 4C/ID. The demonstration and corrective feedback by the facilitators are essential to scaffold the learning of the trainees. In our setting, the senior residents play the role of educators in facilitating the practice session of the skills training for the medical officers. The effectiveness and challenges involved with the residents as educators (RAE) have not been evaluated since the introduction of 4C/ID in the skills training for the medical officers. The study aims to explore the impact and challenges of RAE in basic suturing skills training.

Methods

The survey was conducted after a 2-hour practice session facilitated by the senior residents. The perception of the trainees on the RAE model was evaluated by using questionnaires with five points Likert scale. The perception of the senior residents on their roles as the educators in the practice session was also assessed by using the other questionnaires with five points Likert scale. Both the trainees and educators were encouraged to express their perception of RAE models in free text in the survey. The reflection of the trainees and that of the educators were also evaluated.

Results

Majority of the trainees (82%) and educators (71%) responded to the questionnaires. The majority (72%) of the trainees responded that they were more comfortable to learn from the residents, and received a clear explanation and specific feedback from the residents. Two third of the trainees considered the residents as knowledgeable and skilful educators who were approachable and gave more attention.

However, only 40% of the senior residents felt comfortable to their role as the educators and held the opinion that they could give clear explanation and support in the practice session. The majority (80%) of residents believed that they could provide specific and constructive feedback. Although only 40% of residents felt confident in teaching, most of them (80%) enjoyed their role as educators and believed that RAE model is useful for their learning and improvement in pedagogy.

Being a good role model and ensuring a clear explanation in the procedural skills were among the challenges for the RAE.

Conclusion

There were significant positive pedagogical impacts to the trainees when the RAE teaching model was integrated into the 4C/ID in the basic suturing skills training for the medical officers, although further training in the RAE is essential to overcome the challenges.

APPLICATION OF THE MINI-CEX IN CLERKSHIP FORMATIVE ASSESSMENT AT 5 UMPS IN VIETNAM

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Background and Aims

Mini Clinical Evaluation Exercise (mini-CEX) is a widely-used instrument that allows faculty to observe and assess the performance of learners in specific clinical domains. There is little medical literature on its use with medical students in Vietnam. This study examined the process of introducing and applying the mini-CEX in 5 Vietnamese (VN) universities of medicine and pharmacy (UMPs) as one element of a comprehensive redesign of undergraduate medical education, assessment and feedback.

Methods

The implementation of the mini-CEX occurred in three phases. In phase one, Harvard Medical School (HMS) faculty trained 52 core clinical faculty of 5 UMPs to use the mini-CEX and related tools at a 3-day clinical education reform workshop. In phase two, these trained faculty members disseminated this approach to 240 faculty members to test the application of the mini-CEX using the plan-do-study-act (PDSA) cycle. In phase three, 4 UMPs presented their mini-projects on mini-CEX implementation to each other. This structured feedback session allowed faculty to share ideas and solicit feedback and comments from each other and HMS experts to revise and improve their implementation plans at their own institutions.

Results

In post-course surveys among the 52 core clinical faculty, 99.4% agreed or completely agreed that training for mini-CEX was useful. 4 UMPs have implemented their mini-projects on mini-CEX application since September 2018. They presented their results on mini-CEX studies at the 2nd National Medical Education Conference in Vietnam in Dec 2018. 50 clinical faculty members and 201 students of Year 3, Year 4 and Year 6 cohorts participated in the studies. Despite different research methods applied by 4 UMPs, the data analysis showed consistent results including student (89%, 99%) and faculty (93%,100%) satisfaction from two UMPs in TN and HP; appropriate tool in clinical evaluation responded by students and faculties (92%, 100% in HUMP) and high feasibility agreed by 4UMPs. The studies also showed consistent challenges in applying this approach including time constraints and high student-to-faculty ratio.

Conclusion

To the best of our knowledge, this is the first application of mini-CEX in Vietnam. Although the use of mini-CEX for formative clinical assessment is feasible in the Vietnamese medical education setting, all four UMPs identified challenges such as time limitations and high student-to-faculty ratios. However, the application of mini-CEX will help improve assessment and feedback leading to improved learning outcomes. It is recommended to combine the modified mini-CEX with timely feedback, to orient the students and train the instructors in this method before the clinical course, and to advocate for ongoing UMP's commitment and systemisation of the application of mini-CEX.

HOW STUDENTS EXPERIENCE INTEGRATION AND PERCEIVE DEVELOPMENT OF THE ABILITY TO INTEGRATE LEARNING

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Background and Aims

The merits of integrative learning in promoting better educational outcomes are not questionable. However, there are contentious views on how to implement it. Authorities and teachers in medical education may hold polarised views with some in favour of and others against integration; in addition, integration requires correlation of knowledge from various disciplines and adjusting lesson plans and course schedules. Changes promoting integration may be largely dependent on individual preferences about what is important and what is not. In addition, there is scanty evidence on how students experience it and how they develop the ability to integrate learning. In this paper, students' experiences of integration are explored.

Methods

Using a phenomenographic approach, 16 in-depth interviews and 3 focus group discussions were conducted with 25 students and 10 teachers in an undergraduate medical programme. Students were interviewed to reveal their experiences on how they integrate learning. Teachers were interviewed to determine their perceptions on how students integrate learning and also on how they perceive their role in integrative learning. The findings do not represent how much or how correctly the students and teachers understand integration of learning but how they experience it.

Using the "Anatomy of Awareness" framework, the experiences were structured according to how students experience the meaning of integration of learning; the abilities that they perceive are needed to carry it out; the acts of learning that for them are associated with these abilities; and internal and external factors which they perceive to facilitate or hinder it. This analysis revealed the "outcome space" - a collective of students' experiences. The respondents give their own meanings which may be different from those of other respondents. In phenomenography, the aim of the analysis is to reveal these different meanings as a collective.

Results

Three categories of description represent the qualitatively different and prominent patterns of students' experiences. The categories relate to: 1. Conceptions of the meaning and processes of integration of learning. 2. Conceptions of how to integrate learning and development of integration ability. These are students' experiences on what defines ability to integrate learning and the actions they need to take in order to be able to integrate. 3. Conceptions of the links between integration ability and educational experiences. The researcher interpreted these students' experiences as intrinsic and extrinsic motivation factors that either facilitate or impede development of integrative ability. Analysis of the Categories 1 and 2 revealed five hierarchical "conceptions" with increasing sophistication of integration and the abilities to achieve it.

Conclusion

This study presents further understanding on how students integrate learning. The findings focus on learning to integrate, focussed on medical students and their teachers. Several implications for educational practice can be drawn from the study. To facilitate integrative learning, starting earlier in the programme, intentional contextually directed interventions are needed. It is envisaged that if these recommendations inform curricula design, students' journey through their programmes will ease.

EMPOWERING BLENDED LEARNING BY REAL-TIME DATA VISUALISATION AND TIMELY FEEDBACK

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Background and Aims

It is a challenge for educators in tracking students' progress on an assigned task in a class. Bold students call out teachers for help, but shy students struggle silently until the class ends. A team of educators from Nanyang Polytechnic, Singapore, had a concern with this issue and explored a solution to tackle it. They created a responsive e-learning lesson in a blended learning environment and monitored students' progress in real-time.

Methods

Practice review questions for anatomy lab practical were created by responsive web design and integrated with the Blackboard. It was connected to a free online database, and students' real-time activities were captured. These data were transferred to the lecturers' mobile app and were visualised in real-time by colour codes. The green colour meant that students were doing well, and red or orange colour denoted they were struggling with that question. Two groups of year two nursing students were randomly assigned as a control and an experimental group to pilot real-time data capturing and visualisation. After a face-to-face lab class, the groups were instructed to answer the review questions using their laptops/ mobile phones/iPad/tablets. The lecturer (the main author) tracked students' activities in the experimental group while one of the co-authors tracked in the control group. The number of students identified by the codes between the control and experimental group was compared, and the Fisher exact test was used to analyse an association between real-time data capturing and the number of struggling students identified. An online survey was carried out to explore students' perceptions of real-time data visualisation and instant feedback.

Results

In the experimental group, 13 students needed support and the red/ orange colour code identified all of them. However, in the control group, 16 students needed support, and coded colours identified 11 of them. The proportion of struggling students identified by the colour codes in the experimental group was significantly higher than that in the control group (P-value was 0.0476). Therefore, there was an association between real-time data capturing and the number of struggling students identified. Most of the students from the control group (87.5%) and experimental group (90%) agreed/strongly agreed that support and feedback from the lecturer were timely and constructive, but there was no statistically significant difference (P value was 0.495). Students' comments confirmed their positive perceptions as they remarked "this practice review with real-time feedback keeps me in check with my learning" and "it is a good platform to supplement what we have learned during lessons". However, rooms for improvements in the content and design of the lesson were also identified. For example, students suggested giving clear instructions for each question, to include explanations for both right and wrong answers, and to use 3D pictures. Students also identified some navigation errors, and the team rectified these accordingly.

Conclusion

As real-time data capturing and visualisation using responsive web design assist educators in tracking students' progress and giving constructive feedback, it can be a promising platform for empowering the blended learning lessons.

SHORT COMMUNICATIONS 13

Teaching Ethics in Medical Schools: A Systematic Review from 2000 to 2018
Jiaxuan Wu, Singapore

First Year Medical Student Nutrition Forum and its Impact on the Hidden Curriculum
Maria Lilia Reyes, Philippines

Teaching for Multilevel Learners: The Introduction of Small Group Interactive Sessions to Junior Residents and Medical Officers
Lourdes Galang, Singapore

Does Gender Play a Role in Residency Attrition?
Win Nie Seek, Singapore

An Overview of Stress Domain Using Medical Student Stressor Questionnaire (MSSQ) as a Preliminary Study in Faculty of Medicine Pelita Harapan University
Mona Marlina, Indonesia

Development of Statistical Literacy and Scientific Reasoning & Argumentation Skills in Medical Doctors
Markus Berndt, Germany

TEACHING ETHICS IN MEDICAL SCHOOLS: A SYSTEMATIC REVIEW FROM 2000 TO 2018

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Background and Aims

Teaching ethics to medical students is essential: it teaches medical ethics knowledge, develops students' ethical reasoning skills, and prepares them to face ethical dilemmas which inevitably arise in clinical practice. However, with the wide variation in ethics teaching approaches between medical schools and no standardised measure of the ethical competencies students possess, as well as the increasing problems of professionalism in the medical field, there is concern over the effectiveness of current medical ethics curriculum in nurturing ethical students. A systematic review is undertaken to study the prevailing methods of teaching ethics in undergraduate and postgraduate medical schools.

Methods

Braun and Clarke (2006)'s methodological framework for conducting systematic reviews and PRISMA guidelines were employed in this study. Databases PubMed, ERIC, Embase and PsycINFO were searched for articles published between 1st January 2000 and 31st December 2018. These articles concerned teaching practices in medical ethics in medical schools. Articles obtained were sieved according to internal selection criteria. Open coding and thematic analysis were then done for the articles selected.

5368 abstracts were identified, 559 full text articles were retrieved, 97 articles were included and thematically analysed. Themes on the structure of medical ethics programs include the approach, modalities used, process, curriculum content, objectives, and motivations for establishing the program. Themes on the implementation of medical ethics programs include challenges, enabling factors, outcomes on the learner and school, and recommendations for future medical ethics programs.

Results

An effective medical ethics curriculum should have strong administrative support from the school, defined learning objectives, and integration with the medical science curriculum. The teaching platforms need to be updated to remain relevant to the different learning environments in the preclinical and clinical years. It is important to note that the informal "hidden" curriculum may at times contradict formal ethics teaching, and have a significant impact on students and trainees. Constraints in curriculum time, faculty and resources also form obstacles in teaching ethics.

Conclusion

There is increasing concern as to whether the current manner in which ethics is taught translates into increasing ethical behaviour and a change in the attitudes and actions of students and trainees. This study highlights the need for evidence based and effective methods of ethics training that moves beyond informing the cognition but translates to influence behaviour and actions.

FIRST YEAR MEDICAL STUDENT NUTRITION FORUM AND ITS IMPACT ON THE HIDDEN CURRICULUM

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The concept of the hidden curriculum has been studied in various medical institutions, with much of the studies focused on the clinical training and exposure of undergraduates and residents. A widely held view popularised by Hafferty (1998) posits the hidden curriculum as the unintended, non-explicit lessons imparted by the school's organizational structure & internal learning culture. While discussion of the hidden curriculum has mostly focused on the negative aspects, it is certainly noted that teaching learning strategies that are heavily student-directed and enabled by a supportive faculty contributes to an improvement in perception of "what is not directly taught, but learned". This paper describes the experience of our institution (UERMMMCI) in the inclusion of the student nutrition forum in the first year medical curriculum in Biochemistry, and how the students' involvement in the preparation, documentation and learning of clinical nutrition cases became a process of discovery for faculty understanding of its impact on some aspects of the hidden curriculum.

Methods

The Nutrition Forum has been held every year during the Gastrointestinal System Module. Students were given case studies with guide questions emphasising different nutritional needs and solutions for different types of patient conditions. They were given time to prepare a whole day's menu consisting of breakfast, lunch and dinner, and even snacks. Aside from the conventional grading criteria that included expected correct answers to study guide questions, e.g., molecular basis for oral rehydration solutions in case of diarrhoea, the student meals were also graded according to palatability, sustainability, eco-friendliness and affordability of local food sources. A plenary is given during the last hour of the forum to consolidate the concepts learned in the group presentations. Students who were board-certified clinical nutritionists were involved in the judging of the meals and were also invited to share their knowledge about food chemistry. Narrative feedbacks were requested of the students to be submitted within the week of the completion of the forum.

Results

There was overwhelming positive feedback response from the students. What was also interesting were common thematic elements in their narratives, such as the welcome opportunity to bond with their classmates, the realisation that food or nutrition was just as essential to wellness and for management of disease, or expressing that they did not realise that Biochemistry was also a "fun" and "interesting" subject. There was also positive appreciation of the professors because the judging of the cases involved tasting the meals they have prepared and the giving of important feedback regarding how their meals could be improved.

Conclusion

While student-directed nutrition forums are not a novel concept, the positive impact these could have on the hidden curriculum could not be discounted. When students find these teaching-learning strategies as a way to develop closer personal and professional relationships with their professors and their peers, it is possible to cultivate a learning environment in which professors can be good role models and at the same time empower students to take charge of their learning.

TEACHING FOR MULTILEVEL LEARNERS: THE INTRODUCTION OF SMALL GROUP INTERACTIVE SESSIONS TO JUNIOR RESIDENTS AND MEDICAL OFFICERS

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Background and Aims

The Department of Internal Medicine (DIM) caters to a variety of multilevel learners. These includes Medical Students for Clinical Posting, Post Graduate Year 1 House Officers (PGY1 HO), Medical Officers (MO), both Junior Residency and Advanced Internal Medicine Senior Residency (AIM SR) trainees and other Residency trainees. Teachings are clustered into two categories: 1. Bedside and Clinical teachings and 2. DIM Didactic or interactive teachings twice per week. Attendance have been tracked for our DIM teachings and we noted that attendance rates are usually lower for the MO/Junior Resident group. Targeted Teachings to cater the learning needs of our multilevel learners is one of the teaching strategies in place. DIM caters to the learning needs of PGY1 HOs via Foundation courses (twice per month) and AIM SR training have its own teaching curriculum. Both teaching sessions for these learners are well attended. Although we noted that the Specialties have teachings for their junior residents, DIM has no teaching session catered to this particular group. Our aim is to introduce Small Group Interactive Sessions for Junior Residents Year 1-3 and MOs during their clinical posting in DIM.

Methods

Small Group Interactive Sessions titled MOST (Medical Officer Specialty Teachings) which occur twice a month from 1-2pm every Thursday was introduced from November 2018 to present. Topics are: 1. Evidence based Medicine and Critically Appraised Topics 2. Journal Watch 3. MO Core Knowledge Review 4. Initiation of Palliation and terminal discharge 5. Approach to Critically Ill patient admitted to DIM 6. Review of new and landmark guidelines 7. Complex case discussion 8. MKSAP Question Bank 9. Teaching the Teacher: Effective presentation skills and Strategies for teaching. A smaller venue was requested to invite more interaction. Only 1-2 facilitator from the faculty of DIM (Mostly Consultants and Senior Residents) are there to conduct the session. Discussions are encouraged with few didactic slides.

Results

Before starting the MOST teachings, a questionnaire was sent to DIM faculty and residents/MOs (n=46) and it showed that topic number 3, 4 and 5 are most important. These may be because majority of junior doctors are working on expanding their Core knowledge and scope of their clinical care. During MOST sessions, attendance is better with the junior residents and MOs interacting more. They ask questions and share experiences regarding their difficulties especially in the wards. General feedback from MOs and junior residents seem positive. MOST sessions also help junior doctors feel more engaged and part of the DIM team rather than just working for a big department with a heavy workload. The Faculty also get to know more of the junior residents/ MOs and their learning needs. Subsequently future sessions will be tailored according to it. Online feedback questionnaire is underway.

Conclusion

Department Teachings often combines all learners at different levels. Generally, the lessons learned from it is individualised to the learner. Small Group Interactive Sessions focuses on a particular group of learners mostly to determine their learning needs, to engage them more and to encourage an environment of mutual learning for both teacher and student.

DOES GENDER PLAY A ROLE IN RESIDENCY ATTRITION?

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Background and Aims

Resident positions are a precious resource, and doing our best to select and retain residents who will complete their training is important to ensure that there are sufficient trained specialists for national needs, and to minimise unnecessary stress for the residents in training. Many published studies suggest that being female is a risk factor for attrition, and that female residents tended to leave residency programmes for family reasons more so than their male counterparts; this included having to care for young children or elderly parents, or to follow their spouse to a different geographical location. We sought to see if this was also true in a single sponsoring institution in Singapore, where restrictions on time away from training and strict maximum candidature rules are in place.

Methods

Resident attrition data of the National Healthcare Group (NHG) Residency since the inception of residency in 2010 to academic year 2018/19 was examined.

Results

NHG Residency has enrolled over 4000 residents, out of which 43.1% are female and 56.9% are male. The average attrition rate of residents is 2.6% per year, with a majority of them being male (64.8%). This works out to an attrition rate of 3.4% for male residents and 2.4% for female residents. The top ranked reason for voluntary separation is a change in career interest, with family reasons coming in a far second. However, of the female residents who have separated voluntarily, 39.5% cited family reasons, versus 21.5% of the male residents. In the last academic year, all the female residents who cited family reasons had infants or young children, and felt that the demands of parenting and residency could not be balanced adequately. Accounts of residents having to stop breastfeeding once they returned from work as there was no time to express breastmilk, or feeling that they were not performing up to expectations due to frequent childcare leave were not uncommon. There also appears to be a rise over the recent years in male residents citing family reasons for leaving, which can be expected as societal norms change and fathers in Singapore take on more active roles in childcare.

Conclusion

While female residents did not have higher attrition rates, leaving for family reasons was more common, with a significant challenge in bearing and raising children during rigorous residency training. With the decrease of multi-generational families but the still-traditional expectations of the role of women in Singapore, more can be done to support our residents through this period, including thoughtful planning of postings, the consideration of allowing part-time training or an extended maximum candidature for young parents to return to training, so that we do not lose them as valuable resources.

AN OVERVIEW OF STRESS DOMAIN USING MEDICAL STUDENT STRESSOR QUESTIONNAIRE (MSSQ) AS A PRELIMINARY STUDY IN FACULTY OF MEDICINE PELITA HARAPAN UNIVERSITY

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Background and Aims

Providing the best teaching for students is certainly the main focus of every lecture. However, it is necessary to consider the stressors that may be faced by the students, especially in the Faculty of Medicine. The Medical Student Stressor Questionnaire (MSSQ) is a validated tools used for identifying a group of stressors. This research is a preliminary study to get an overview of stressor among medical student in Faculty of Medicine Pelita Harapan University.

Methods

Cross-sectional univariate measurement using MSSQ. The study was conducted on 30 medical students from the 2016 batch (8 males and 21 females), aged around 16-18 years old.

Results

The highest stressor faced by the student was interpersonal related stressors (IRS) mean 2.547, followed by teaching and learning-related stressors (TLRS) 2.485, academic related stressors (ARS) 2.304, group activities related stressors (GARS) 2.259, drive and desire related stressors (DRS) 2.195, and social related stressors (SRS) 2.173. Scoring based on the interpretation of the MSSQ result which are 0-1.00 cause mild stress, 1.01-2.00 cause moderate stress, 2.01-3.00 cause high stress, and 3.01-4.00 cause severe stress.

Conclusion

All stressors domains were in a concern level. Subsequent research should be conducted in larger population and batch.

DEVELOPMENT OF STATISTICAL LITERACY AND SCIENTIFIC REASONING & ARGUMENTATION SKILLS IN MEDICAL DOCTORS

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Background and Aims

In a doctor-patient relationship on equal footing, transparent information about risk is key. Statistical literacy of medical doctors, i.e. the ability to use and understand statistical numbers, is an essential prerequisite for risk estimation and risk communication. Together with scientific reasoning and argumentation skills (SRA), statistical literacy provides the basis for evidence-based practice. Several studies suggest that both skills are underdeveloped in medical students, but better developed in medical doctors. To investigate the extent of development of these skills in medical doctors and get insights on how, when, and where these skills were developed in their professional life, was the aim of the present study.

Methods

Data were gathered on statistical literacy and SRA skills from N = 71 medical doctors in Germany (34/37 female/male, mean age M = 40.00, SD = 9.59), together with biographical information to illuminate the development of these skills. The study was conducted with a mobile-optimized online survey which was adapted from a validated tool to measure statistical literacy and activities related to SRA (particularly evidence evaluation and drawing conclusions) in medical students. A maximum of 40 score points was attainable for statistical literacy, and 204 score points for SRA skills.

Results

Analysis showed average scores in statistical literacy of M = 27.76 (SD = 6.92) and SRA skills of M = 106.27 (SD = 21.53). Significantly more participants indicated to have acquired scientific competencies after their studies in an autodidactic manner (M = 4.88, SD = 1.07; 6-point Likert) rather than during their studies (M = 2.32, SD = 1.52; $t(1,69) = -5.291$, $p < .001$) or in extracurricular activities (M = 2.80, SD = 1.72; $t(1,69) = 4.673$, $p < .001$). In a linear regression model, the number of scientific publications predicted the performance in statistical literacy ($ß = .058$*, $RÂ² = .125$; $F(1,69) = 4.446$, $p = .043$; $r(69) = .354$*). Having completed a doctoral thesis did not influence the scoring in statistical literacy ($F(1,69) = 1.306$, $p = .262$) or SRA skills ($F(1,69) = .001$, $p = .971$).

Conclusion

Study results indicate that medical doctors on average have medium levels of statistical literacy and SRA skills. Qualitative biographical data suggests that skills development relates mainly to autodidactic learning activities outside of formal medical education. It appears that being involved in research and publication activities is a positive predictor for statistical literacy. However, having only completed a doctoral thesis had no significant effect on statistical literacy or SRA skills. This might indicate a lack of scientific independence and responsibilities during doctoral work.

The active involvement in research may play an important role in providing the basis for adequate risk communication and evidence-based practice. Hence, medical curricula should include active involvement in research, and overall, the development of statistical literacy and SRA skills needs to be systematically fostered during medical education.

Saturday 11 January 2020, 11.30am

Aquarius 3, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 14

Enhanced Medical Student Placements: A Model Using University-Employed Clinicians in Australia
Mark Morgan, Australia

Integrating Near-Peer, Peer- and Electronic Mentoring Approaches With Novice Mentoring in Medicine: A Systematic Scoping Review
Kylie Ho, Singapore

Application of COPUS as a Tool to Support Ongoing Curriculum Improvement in Pre-Clerkship Courses in 4 Medical and Pharmacy Universities in Vietnam
Pham Xuan Truong, Vietnam

Practice Using a Latex Simulation Model Results in Skill Transference to Performing Vascular Anastomosis in Rat Vessels in Laboratory-Based Microsurgery Training
Jin Xi Lim, Singapore

Through a Glass, Qualitatively: Examining Enablers and Barriers to Interprofessional Collaboration Using Institutional Ethnography
Kevin Tan, Singapore

Training Medical Students to Obtain Valid Informed Consent: A Single Centre Medical School Study
Tony Mak, Hong Kong S.A.R

ENHANCED MEDICAL STUDENT PLACEMENTS: A MODEL USING UNIVERSITY-EMPLOYED CLINICIANS IN AUSTRALIA

Morgan M, Roberts S

Faculty of Health Science and Medicine, Bond University, Australia

Background and Aims

Hospital-based clinical placements are an essential component of medical student education to promote the translation of theoretical knowledge into practical experience and to prepare students for life as a junior doctor.

Most of the teaching during clinical placements is opportunistic. Factors associated with student learning include the confidence and enthusiasm of the student in making themselves known in the department and seeking out learning opportunities, clinician interest and competence in teaching students, availability of suitable clinical teachers and variability in clinician workload and case-mix.

Student experience and quality of learning can vary greatly day-to-day, across departments and across sites. Increasing numbers of medical students, increasing clinical workload and pressure on clinicians presents a challenge in ensuring quality clinical placements with sufficient teaching opportunity and robust work-placed assessments.

Methods

To improve students in-hospital experience, Bond University has piloted a model of enhanced student placements by appointing an early-career generalist doctor with no clinical responsibilities. This teaching fellow assists students to seek opportunities for gaining clinical experience, conducts bedside teaching and facilitates peer-to-peer teaching sessions. The teaching fellow supports clinicians to provide discipline-specific teaching and work-based assessments that are targeted to student needs.

Evaluation data is collected from students, clinicians and clinical teams via multiple methods, including a survey, written feedback and observations.

Results

We will present findings of the program evaluation outlining changes in the quantum of clinical teaching and patient-contact, student experience and hospital-clinician experience.

Barriers to the broader implementation of the model include needing to prioritise which students require additional support and timetabling difficulties with multiple clinical teams. There is also a need to avoid taking over to great a share of clinical teaching from specialist clinician teams.

Conclusion

The role of a hospital-based teaching fellow has the potential to enhance students experiential learning, improve some of the issues of variability and increased the validity of work place assessment. The additional support for clinical teams can enhance work-place assessments and help to tailor clinical teaching to identified student needs. The model represents an opportunity to improve quality of learning in the face of increased pressures from student numbers and clinical priorities of clinicians.

INTEGRATING NEAR-PEER, PEER- AND ELECTRONIC MENTORING APPROACHES WITH NOVICE MENTORING IN MEDICINE: A SYSTEMATIC SCOPING REVIEW

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Background and Aims

To overcome a shortage of mentors in novice mentoring (mentoring between an experienced clinician and junior doctor(s) or medical student(s)), some programs have begun incorporating e-mentoring and peer- and near-peer mentoring approaches (termed Combined Novice- and Electronic- Peer-mentoring, or CNEP mentoring). Yet whilst CNEP mentoring promises access to timely assessment and support for mentees, there is little data on this approach, warranting concerns regarding the viability of this approach.

Methods

Guided by Arksey and O'Malley (2005)'s framework and PRISMA-ScR guidelines, this systematic scoping review (SSR) focuses on peer-reviewed and grey literature regarding CNEP mentoring published between 2000 and 2018 in 5 databases. Confined to publications in Internal Medicine given the dearth of data in Palliative Medicine, this SSR employed Braun and Clarke (2006)'s approach to thematically analyse prevailing accounts of CNEP mentoring.

Results

2748 articles were identified, 290 articles retrieved, 55 full text articles reviewed, and 39 articles were included and thematically analysed. The 5 themes identified included definitions, roles, design, evaluation and challenges.

Conclusion

Prevailing accounts characterize CNEP mentoring as 1) mentoring relationships between the senior clinicians, near-peer mentors, and mentees, 2) having clearly defined roles, aligned goals and expectations and 3) which employ electronic modes of communication and information-sharing to supplement face-to-face interactions 4) to facilitate timely, consistent and personalised mentoring support.

Near-peer mentors effectuate more flattened hierarchical team structures that nurture the development of more enduring and personalized mentoring relationships, while E-mentoring promotes access and timely support of mentees.

To be successful, CNEP mentoring requires the following: 1) a formal, robust and consistent mentoring structure, 2) training for mentor and near-peer mentor(s), 3) longitudinal assessments for evaluating mentees, mentors and mentoring relationship(s), and 4) endorsement and support from a nurturing host organisation.

Host organisations play crucial roles in aligning expectations of mentors and mentees, as well as in establishing and policing the mentoring program and relationships through upholding codes of conduct and taking appropriate action based on feedback obtained from parties involved, thereby ensuring timely support of mentees, mentors and the ongoing success of the mentoring relationship.

While the literature surrounding CNEP is generally optimistic, more studies are needed to accurately and holistically determine how mentees, near-peers and mentors interact in CNEP mentoring relationships, and how these relationships evolve. Open sharing of feedback and evaluation from ongoing or new programs is also required to better understand how CNEP mentoring programs may be better assessed and supported, and to design appropriate structuring and oversight of future programs if CNEP mentoring is to become an effective, reliable, sustainable and reproducible novice mentoring method.

It is the authors' opinion that CNEP may be the medical mentoring of the future as the healthcare sector assimilates the millennial generation of technologically savvy students and doctors, and incorporates technology in communications and mentoring.

APPLICATION OF COPUS AS A TOOL TO SUPPORT ONGOING CURRICULUM IMPROVEMENT IN PRE-CLERKSHIP COURSES IN 4 MEDICAL AND PHARMACY UNIVERSITIES IN VIETNAM

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Background and Aims

The Classroom Observation Protocol for Undergraduate STEM (COPUS) is a tool to measure and provide data on student/faculty interaction in the classroom (https://www.lifescied.org/doi/full/10.1187/cbe.13-08-0154).

We provided faculty development and technical expertise to four Universities of Medicine and Pharmacy (UMP) as part of a multi-university effort to reform medical education in Vietnam. Goals include developing new pre-clinical curricula built on adult learning theory including: 1) integration of basic and clinical science in the earliest years, 2) increasing interactive instructional strategies, and 3) fostering self-directed student learning. Here we describe the implementation and use of COPUS to inform ongoing curriculum improvement.

Methods

We trained members of each school's Continuous Quality Improvement (CQI) team to use the COPUS tool in the classroom. Training included introduction to the tool, explanation of the codes, and hands-on practice using standardised videos and in live classes, to standardise each team member's use of the various COPUS codes. We then worked with each university to develop a quality improvement plan incorporating COPUS results to monitor reform efforts, and identify areas for ongoing faculty development and curriculum improvement.

Results

We trained 26 faculty and staff at the 4 universities. Trained faculty used the COPUS tool to assess 63 pre-reform and 103 post-reform class sessions at four UMPs, revealing a change in time spent in active learning from 21.2% to 34.8%, and in use of active teaching methods from 28.2% to 46.7% pre- and post-reform respectively. There was a wide range in results across courses and universities.

CQI teams used their individual university data to characterize teaching and learning across lectures and courses, to set goals to increase time spent in active learning and teaching methods, and to plan faculty development initiatives to reach these goals. Data was also shared with individual assessed faculty, although only 25% reported receiving the data. None reported receiving individual feedback on their teaching session.

Discussion:

After a brief training, COPUS observers were able to collect data to inform both course-level quality improvement plans, as well as strategies for future faculty development during an ongoing medical education reform effort. CQI teams had hoped to use the tool to provide immediate feedback to individual faculty. However, observers will need additional training on evidence-based instructional strategies and how to deliver feedback to faculty to implement this activity.

Conclusion

Implementation of the COPUS tool was feasible and effective at providing objective data to curriculum quality improvement teams, and to identify areas for ongoing faculty development and improvement. Additional training and guidance are needed to make the COPUS data useful to provide peer-to-peer faculty coaching. To the best of our knowledge, this is the first description of the use of COPUS to inform a multi-university reform effort in a resource-limited setting.

PRACTICE USING A LATEX SIMULATION MODEL RESULTS IN SKILL TRANSFERENCE TO PERFORMING VASCULAR ANASTOMOSIS IN RAT VESSELS IN LABORATORY-BASED MICROSURGERY TRAINING

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Background and Aims

Microsurgery requires an intricate and complex skill set encompassing fine movements with an elevated level of hand-eye coordination. Surgical residents pursuing a career in microsurgery must successfully acquire microsurgical skills via repeated practice in order to achieve vascular patency in patients. A latex simulation model has been used for decades as part of microsurgical training. However, it has not been proven that skills acquired during practice on latex models result in skills transference for anastomosis of live vessels. Our hypothesis is that there is a positive correlation between the scores attained on the latex model and the patency rate of vascular anastomosis of rat vessels in a laboratory setting.

Methods

All participants of the 5-day Microsurgery Training Course in the National University Hospital from 2017 to 2018 (n=77) were included in the study. On Days 1, 3 and 4, the participants were asked to perform suturing practice on a latex strip. The task was to place 9 sutures in a prefabricated 4mm latex strip under the microscope. A computer programme 1 was used to objectively assess the suturing - the algorithm is based on uniform and optimal suture density as well as alignment of the sutures. The total score is known as the Strip Score. On Days 3, 4, 5, participants were also asked to prepare and anastomose 4 rat femoral vessels (2 arteries and 2 veins) each day. A single non-blinded assessor records the patency of the vessels and assesses the participant's ability to handle and prepare the vessels appropriately (vessel assessment score).

Results

There is positive correlation between the Strip Scores and overall vessel patency rate and this becomes stronger over time during the course ($r= 0.28$, $p= 0.01$ on Day 3 and $r=0.39$, $p =0.00$ on Day 4). Likewise, there is positive correlation between the Strip Scores and the average Vessel Assessment Score on Day 5 ($r=0.466$, $p= 0.00$).

Conclusion

The positive correlation between the Strip Score on Day 3 with vessel patency rate shows that microsurgical practice on latex strips is an effective training platform that can result in participants acquiring skills for vessel anastomosis in a rat model. The increase in strength of correlation with regular practice (from Day 3 to Day 4) reflects the effectiveness of the simulation model in improving the microsurgical skills of the participants over time. The findings of this study show that microsurgical practice in a latex model results in skills transference to vessel anastomosis in a live rat model. This model offers a more practical training resource for residents in all specialties involving microsurgical procedures.

THROUGH A GLASS, QUALITATIVELY: EXAMINING ENABLERS AND BARRIERS TO INTERPROFESSIONAL COLLABORATION USING INSTITUTIONAL ETHNOGRAPHY

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Background and Aims

Interprofessional collaboration (IPC) improves patient care and outcomes. However, interprofessional education (IPE) - the oft-touted magic bullet for IPC - has produced inconsistent results in fostering collaborative practice. Models of IPE focusing only on educational activities and learning outcomes cannot explain instances where IPE fails to catalyse IPC. Furthermore, theoretically-informed studies such as those referencing Witz's boundary work have elucidated latent threats to IPC by uncovering strategies adopted by different healthcare professions to exclude each other from collaborating in clinical work which traditionally fell under their jurisdiction. Using a theoretical framework that considers the multi-faceted contextual influences that affect collaborative practice, our study aims to understand how the staff at a Singapore public healthcare institution - the National Neuroscience Institute (NNI) - experience IPC, and what their perceptions of enablers and barriers to collaborative practice are.

Methods

Our theoretical framework is informed by Bronfenbrenner's ecological systems theory (https://tinyurl.com/yycyruhy) that explores multi-faceted contextual influences of IPC from more than just the IPE angle. Using institutional ethnography, from June 2019, field observations have been conducted of clinical teams at NNI to capture their everyday experiences. This was followed by purposively interviewing the health professionals from these teams. Texts that shape day-to-day institutional practices will be identified and collected. All these sources of data will be analysed using Braun and Clarke thematic analysis.

Results

Early analysis of observational and interview data collected from 6 clinical teams and 17 individuals in the first year of our three-year study show that, in the micro- and mesosystems, barriers to IPC include factors such as medical dominance over interprofessional interactions in terms of talk time, physical space and manipulation of symbolic objects such as the computer-on-wheels that give access to patient data. Enablers include exo- and macrosystem factors such as the expansion of non-medical professionals' roles and responsibilities that allow their greater participation in clinical care.

Conclusion

IPE is assumed to catalyse IPC but recent literature has shown that collaborative practice is influenced by multiple factors including organisational structures, institutional policies and interactional aspects. Our theoretically-informed study seeks to use qualitative research approaches to understand in a rich, nuanced and in-depth manner the complex nature of collaboration. Enhanced understanding of the enablers and barriers to collaborative practice in Singapore may help us implement better IPE and IPC to improve patient care and health outcomes.

TRAINING MEDICAL STUDENTS TO OBTAIN VALID INFORMED CONSENT: A SINGLE CENTRE MEDICAL SCHOOL STUDY

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Background and Aims

In 2015 the landmark decision of the Supreme Court case of Montgomery vs Lanarkshire Health Board in UK has changed the way medical professions obtain informed consent from patients. The emphasis has shifted from a paternalistic approach to more of a patient-centred approach. The three main principles of valid consent include capacity, disclosure and volunteeriness. They are essential skills for medical profession to learn as inadequate consent process can damage the doctor-patient relationship and may result in legal challenges and litigation. This study aims to assess the usefulness of an organised teaching workshop for valid informed consent.

Methods

From 2015 to 2019, 4th year medical students from the Chinese University of Hong Kong were given didactic lectures and communication workshops on valid informed consent. Main components of capacity (ensuring patient understand and retains the information given, disclosure (doctor to provide enough information on the pros and cons of the treatment including alternative therapy) and volunteeiness (patient to make decision without coercion nor persuasion) were taught and discussed. Students were examined summatively at the end of year OSCE where their marks, pass/fail status and surrogate impression were recorded.

Results

Since 2015, a total of 910 students were taught in the above programme on valid informed consent. The question from the end of year OSCE exam on valid informed consent ranges from taking consent on a patient for colonoscopy to insertion of chest drain. Although the pass/fail ratio remain the same over the 4 year period, the mean score was significantly higher in the 2018-19 yr compared with 2015-16yr (8.56 vs 8.34, $p<0.02$) and surrogate (who acts as the patient) satisfaction score was also significantly higher in the 2018-19yr than 2015-16yr groups (4.1 vs 3.8, $p<0.0001$).

Conclusion

Principles of supported decision-making is an essential element of medical education, which also is an important communication skills. This study demonstrated with a structured interactive teaching programme, students can develop skills early in their medical career.

Saturday 11 January 2020, 10.45am

Aquarius 4, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 15

Using Psychometrics to Inform Entrustable Professional Activities: Experiences in Taiwan
Tzu-Hung Liu, Taiwan

Use of E-Learning in Peyton's Four-Steps-Approach: Locating the Posterior Ledge on Facial Computed Tomographic Scans
Celine Yoong Shuen Yin, Singapore

Implementing Portfolio-Based Self-Directed Development in a Preventive Medicine Residency (or, Converting A 747 into an A380 With Passengers in Mid-flight in a Thunderstorm)
Jason CH Yap, Singapore

Assessing the Factors Influencing Medical Students' Career Choices: A National Survey
Reza Hosseini Dolama, Iran

Gamification of Medical Education Via a Maze? Issues and Implications
Eng Tat Ang, Singapore

Identifying the Critical View of Safety During Cholecystectomy: Results of a Didactic Training Module
Danson Yeo, Singapore

USING PSYCHOMETRICS TO INFORM ENTRUSTABLE PROFESSIONAL ACTIVITIES: EXPERIENCES IN TAIWAN

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Background and Aims

Competence-based medical education (CBME) has become a recent trend in medical education reform to enhance the effectiveness of clinical education. After Professor Olle ten Cate introduced the concept of Entrustable Professional Activities (EPAs), many medical education institutions in the world have implemented EPAs in their training programs. Thus, EPAs now serve as indicators in CBME. In Taipei Tzu Chi Hospital, Taiwan, we have piloted an EPA program for trainees in their first postgraduate year (PGY-1) in 2019. The EPAs presented here are developed by the Taiwan Society of Emergency Medicine. Our study aims to evaluate how EPAs and their competencies work based on the results of our first cohort.

Methods

A total of 27 PGY-1 trainees received EPAs in their emergency medicine rotations. Levels of EPAs were collected and examined through exploratory data analysis. In classical test theory, we presented the inter-item correlation coefficients and the Cronbach's alphas for internal consistency. We examined the dimensionality by factor analysis and principal component analysis. An alpha level of 0.05 was used as the cut-off for significance.

Results

Four EPAs and 19 competencies were checked. To illustrate, we would use the EPA 1 as an example. EPA 1 refers to handling patients with common complaints and includes eight competencies. Except for competency in patient education, the levels of each competency are moderately to strongly correlated with the levels of EPA 1 (r: (0.51, 0.89), $p < .05$). The Cronbach's alpha is up to 0.95 and would be even higher if competency in patient education is removed from the scale. However, our faculty regarded patient education as one of the most important competencies in handling patients and decided not to remove this item. When we examined the scree plot in factor analysis, we found there were two dimensions with eigenvalues higher than 1 in EPA 1. In the first dimension, the factor loadings of all eight competencies are positive. In the second dimension, the factor loadings of some competencies (giving orders, explaining the plans, and patient education) are positive, while others are negative. This indicates that the second dimension measures other types of clinical competence, in this case, communication skills.

Conclusion

Use of the results of the EPAs is valid in our trainees. The levels of most competencies in each EPA have strong internal reliability and moderate to strong correlation with the levels of that EPA. Some competencies may not have great psychometric properties but should be kept for substantive reasons. We also noted that a single EPA can measure up to two dimensions of clinical competence psychometrically and may need some rearrangement in its competencies.

USE OF E-LEARNING IN PEYTON'S FOUR-STEPS-APPROACH: LOCATING THE POSTERIOR LEDGE ON FACIAL COMPUTED TOMOGRAPHIC SCANS

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Background and Aims

Performing measurements of the orbit on facial computed tomography (CT) scans is challenging. No standardised teaching technique currently exists for imparting such skills to learners. Peyton's Four-Steps-Approach teaching technique has been proven to be superior to the Halsted's 'See One, Do One' approach despite being labour intensive and time consuming. E-Peyton's is an E-learning program that we developed which automates the Peyton's Approach. This study evaluates the effectiveness of E-Peyton's as a teaching technique.

Methods

Novice learners (n=44) were randomised into three groups based on teaching technique employed: Halsted's (n=15); Peyton's (n=14); E-Peyton's (n=15). The distance between the infraorbital margin and the posterior ledge was measured using a standardised technique on Osirix® Digital Imaging and Communications in Medicine (DICOM) Viewer v9.0.1 (Pixmeo SARL, Geneva, Switzerland). 20 measurements were assessed for accuracy against gold standard (+/-2mm) at week 0 and week 1. Training durations were compared. Questionnaires were administered pre- and post-study to identify the learner's acceptance of the teaching techniques, and their confidence in interpreting facial CT scans (based on the Likert scale, 1=strongly disagree; 5=strongly agree).

Results

At week 0, mean number of measurements within range (+/-2mm of gold standard) for Halsted's (7.67/20), Peyton's (9.07/20) and E-Peyton's (8.2/20) were similar ($p>0.05$).

At week 1, mean number of measurements within range increased for Peyton's (9.86/20, $p>0.05$) and E-Peyton's (9.267/20, $p>0.05$), and decreased for Halsted's approach (7.53/20, $p>0.05$). Mean number of measurements within range for Peyton's approach was significantly greater than Halsted's approach ($p<0.05$), and was similar to E-Peyton's approach ($p>0.05$).

Mean training duration of E-Peyton's (71.2min, range 37-137min) was significantly longer than Peyton's (51.86min, range 37-67min, $p<0.05$) and Halsted's approach (29.4min, range 15-57min, $p<0.05$). Mean training duration of Peyton's approach was significantly longer than Halsted's approach as well ($p<0.05$).

Gap scores indicated a significant increase in confidence levels for Halsted's (1.03/5, $p<0.05$), Peyton's (1.63/5, $p<0.05$) and E-Peyton's (1.74/5, $p<0.05$) approach. Furthermore, learners in the E-Peyton's group (4.08/5) had significantly greater confidence levels post-study compared to those in the Halsted's group (3.61/5, $p<0.05$).

Halsted's (4.12/5), Peyton's (4.48/5) and E-Peyton's (4.53/5) approaches were well accepted by learners. Learner's acceptance of E-Peyton's was significantly greater than Halsted's approach ($p<0.05$).

Conclusion

Peyton's and E-Peyton's confer greater skills retention than Halsted's approach despite requiring a longer training duration. Peyton's approach requires a 1:1 trainer to learner ratio and is labour intensive. E-Peyton's automates this process, increasing efficiency by reducing manpower required during training sessions.

IMPLEMENTING PORTFOLIO-BASED SELF-DIRECTED DEVELOPMENT IN A PREVENTIVE MEDICINE RESIDENCY (OR, CONVERTING A 747 INTO AN A380 WITH PASSENGERS IN MIDFLIGHT IN A THUNDERSTORM)

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Background and Aims

When Singapore moved towards the American-style residency system in 2010, Preventive Medicine was one of the first movers. Because of the small size of the community, the single national programme spanned all three local sponsoring institutions and other related organisations.

There were many teething problems. Before the transition, Public Health and Occupational Medicine had their own tailored training programmes, so combining and fitting them into the "imported" and more clinically-oriented training constructs was difficult. Funding norms and operational procedures were designed with clinicians in mind, and the residency had to "work around" many rules and processes.

Methods

More recently, the Ministry of Health required that the residency's exit examination (hitherto an intense two-hour viva by a panel) have more modalities of testing. The RAC asked the residency to incorporate portfolios but left the details and implementation to the programme.

Without precedents in Singapore, the programme designed and implemented its own portfolio structure on an access-controlled shared repository. Residents maintain an Overview (equivalent to their previous training log), Narrative (a descriptive essay of how each resident is developing in the 13 EPAs), Rotation Reports (six-monthly plans and work done), and exhibits (everything from presentations, posters and publications, to reflections, assessments and feedback).

Results

The portfolios now serve as reference for ongoing competency reviews, confirmation of readiness for examinations, and as domains for discussion during oral examinations (to contextualise to each resident).

Conclusion

This presentation describes how the residency is converting from a top-down, trainer-trainee instruction regime into a flexible, andragogic, facilitator: self-developer community where residents take charge of their individual and group growth. Residents construct, augment and present their own development narratives, identifying and addressing deficiencies for deliberate remediation.

ASSESSING THE FACTORS INFLUENCING MEDICAL STUDENTS' CAREER CHOICES: A NATIONAL SURVEY

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Background and Aims

The current trend of uneven distribution of physicians across different specialties and the subsequent challenge of providing easy access to the needed care, especially in gynaecology, emergency medicine, and neurosurgery has been a major concern for Iranian health policymakers. Identification of factors affecting medical students' interest in different specialties would be helpful in encouraging students to pursue less favourable specialties and achieving the right mix of specialists to meet societal needs. In this study, by means of a nation-wide multi-centric survey, we aimed to investigate the factors that influence Iranian medical students' career choices and its trend across the continuum of their professional.

Methods

A multi-site cross-sectional survey of medical students was conducted using a valid questionnaire. The questionnaire consisted of three parts including demographic data, students' interests, and influencing factors which quantified the role of 30 different factors in 6 categories using a 5-point Likert scale. Face validity of the questionnaire was conducted by a nominal group of 76 medical students and the content validity was examined by 12 residents in different specialties. Reliability of the questionnaire was calculated by Cronbach's alpha coefficient (0.88). Finally, the web-based version of the questionnaire was sent to medical students across the country.

Results

Overall 2357 responses were gathered from 34 medical schools, 45% of them from male and 65.2% from pre-clinical students. Results indicated that "perceived personality fit to the specialty", rated critical by 84.05% of students was considered the most important factor when choosing a specialty. This was followed by "individual competencies regarding certain specialty", "autonomy (to have freedom, independence, and control over work style, schedule lives)", and "life-style after training (stress&...)". On the other end of the spectrum, "length of the training required" and work hours during residency" were rated least important and only 22.57% of students decided based on these factors. It is interesting to note that "financial rewards after training" was not mentioned in the top five critical factors by students. Our study also revealed that only 6.2% of students had the experience of participating in a career planning course.

Conclusion

Iranian medical students consider "perceived personality fit to the specialty" and "individual competencies regarding certain specialty" the most important factors affecting their career choices. Designing career planning courses for medical students and guiding their interest into less favoured specialties may be helpful for achieving the right mix of specialists.

GAMIFICATION OF MEDICAL EDUCATION VIA A MAZE? - ISSUES AND IMPLICATIONS

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Background and Aims

Gamification when administered correctly would capture the attention and imagination of millennia medical students. Adding gaming elements to the anatomy education process could result in better academic results. How did this come about? Was it due to increased motivation or some other behaviour construct changes?

Methods

Tracking a group of medical students (n=72) over a period of time with a pre- and post- anatomy maze surveys (PRO-SDLS) has provided some insights. Specifically, a novel Partial Least Squares path model (PLS-PM) was used to assess the change in these constructs with the maze as an intervention. It has the potential to explain the interactions and correlation between relevant constructs. These medical students were encouraged to partake in the maze (10 stations) that challenged them to answer anatomical questions associated with potted specimens containing limbs prosections.

Results

We discovered that too much gamification (maze) would in fact distract the student from actual learning of the subject matter. Furthermore, it has to be targeted, moderated, and focused. The PLS-PM (non-parametric test) was unable to decipher the complex mechanistic workings of anatomy education. "Motivation" per se was not found to be increased. However, when the same data set was interrogated using the student T-test (parametric test), it showed that the maze could in fact increase "Initiative", a construct leading to effective learning.

Conclusion

In conclusion, we could not prove that "Motivation" was elevated due to the maze, but serendipitously, discovered that it elevated the construct "Initiative" instead. This shall be discussed in the context of medical education culture.

IDENTIFYING THE CRITICAL VIEW OF SAFETY DURING CHOLECYSTECTOMY: RESULTS OF A DIDACTIC TRAINING MODULE

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Background and Aims

Laparoscopic cholecystectomy is a commonly performed surgical procedure. Demonstration of the critical view of safety (CVS) is paramount to minimizing complications. The aim of this study was to measure correct identification of the CVS, quantify observer variability, and the impact of a didactic training module on these measurements.

Methods

10 images of dissected hepato-cystic triangles chosen for this lecture, and the completeness of the hepato-cystic triangle dissection in the images was graded by expert senior surgeons. 21 surgical residents and 8 consultants were shown the series of 10 pictures of a dissected hepato-cystic triangle. They were asked to grade the quality of the critical view of safety from 1 to 5, with 5 being excellent exposure.

All subjects then participated in a didactic training module that was adapted from SAGES Safe Cholecystectomy Program. The audio-visual module demonstrated the CVS.

Immediately after participating in the module, all the participants were then again asked to grade the same 10 images, displayed in a different random order.

The pre-intervention and post-intervention mean scores of the residents and the consultants groups were analysed using paired t-tests. Inter-observer agreement within the resident and consultant groups was analysed using Krippendorff's Alpha.

Results

In the residents group, the pre-intervention scores ranged from 2.43 to 4.90, with a mode of 3.00, while the post-intervention scores ranged from 2.10 to 4.81, with a mode of 2.81. The Krippendorff's Alpha score at pre-intervention was -0.022, while the score improved to 0.011 post-intervention. Only 2 pictures had statistically significant different mean scores pre and post intervention. In the consultants group, the pre-intervention scores ranged from 1.25 to 4.63, with a mode of 2.88, while the post-intervention scores ranged from 1.38 to 5.00, with a mode of 2.75. The Krippendorff's Alpha score at pre-intervention was 0.05, and improved to 0.068 post-intervention.

Conclusion

The residents' scores for correct identification and observer variability in identifying the critical view of safety improved after participating in the training module, however they still fared poorer than the consultants.

SHORT COMMUNICATIONS 16

The Impact of Continuing Education for Pharmacists in Optimising Glycemic Control of Hospitalised Patients
Nicholas Xiang Xuan Chan, Singapore

Cadaveric Dissection Show the Ropes Beyond Anatomy
Chandrika Muthukrishnan, Singapore

Mongolian Traditional Medical Curriculum in Inner Mongolia, China and Mongolia: A Comparative Study
Regzedmaa Dalanbayar, Mongolia

Enhancing Personal and Clinical Values through Overseas Placement Experiences
Lester Jones, Singapore

Embed Teaching: End-Of-The-Multiple -Bedogram Teaching in the Emergency Department
Wayne Hazell, Australia

The Perceived of Students and Teacher of Formative Assessment in Undergraduate Medical Education: A Qualitative Study
Sylvia Sari, Indonesia

THE IMPACT OF CONTINUING EDUCATION FOR PHARMACISTS IN OPTIMISING GLYCEMIC CONTROL OF HOSPITALISED PATIENTS

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Background and Aims

There is a rising prevalence of diabetes worldwide and a significant proportion of hospitalised patients suffer from diabetes. Glycaemic derangement such as hyperglycaemia and hypoglycaemia amongst these patients is associated with longer hospital stays and increased mortality4. In the National University Hospital (NUH), ward pharmacists assist doctors with titration of diabetes medication to stabilise glycaemic control. This is a complex task which requires practitioners to analyse several interrelated variables (e.g. clinical, pharmacological, dietary, socio-economic etc.) before proposing a safe treatment plan.

Objective: This study evaluated the impact of an in-house series of case-based and task-orientated tutorials in improving pharmacists' confidence in the complex task of inpatient diabetes management. These training sessions were created to prepare pharmacists for patient assessment and to aid them in providing recommendations to optimise patients' blood glucose levels.

Methods

Six tutorial sessions for three pre-determined topics were conducted for inpatient ward pharmacists in NUH by endocrinologists and specialised diabetes pharmacists. A seven-step guide was introduced to streamline and simplify the task of approaching blood glucose management for learners. Cases discussed were based on realistic clinical examples. These hour-long interactive small group case-based discussions (CBD) were facilitated by diabetes pharmacists, and provided opportunities for the ward pharmacists to apply the suggested seven steps so as to improve their proficiency in practising the complex task of inpatient diabetes management. Learners self-rated their confidence levels in reviewing clinical information, patient's condition and providing recommendations for diabetes therapy using the 5-point Likert scale before and after the tutorial session. Qualitative feedback was also obtained before and after session to further identify knowledge gaps in diabetes management and how the training addressed these problems.

Results

A total of 93 responses were obtained over six sessions. The median rating of the 5-point Likert scale was 3 before each tutorial topic discussion and increased to 4 post tutorial. This improvement was statistically significant using the Wilcoxon signed rank test, with p-values <0.05.

With regards to existing gaps amongst pharmacist learners, dominant themes identified included poor self-efficacy in initiating and titrating insulin, lack of time amidst heavy clinical workload as well as lack of confidence in managing more complex patients. Qualitative feedback also showed that the sessions addressed the above needs by providing realistic examples on how to initiate and titrate diabetes medications and hence enhanced learners' confidence, particularly with insulin initiation. The provision of the seven-step framework also improved learners' confidence in handling the complex task. There were however calls for advice on more specific clinical situations which were not covered in the initial sessions.

Conclusion

A case-based and task-orientated approach can be adopted to educate healthcare professional in the complex task of inpatient diabetes management. Learners favour learning from experts who can share experience based on realistic examples while aided by frameworks to manage the complexity of titrating diabetes medications within the inpatient setting. This is associated with an improvement in confidence score amongst learners. Such methods may only be adequate for general education while more dedicated sessions are required to cover specific clinical scenarios.

CADAVERIC DISSECTION SHOW THE ROPES BEYOND ANATOMY

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Background and Aims

It has been well established that cadaveric dissections offer the best mode of learning human gross anatomy. In our school, the Yong Loo Lin School of Medicine, dissection is offered as an elective after students complete their final year examinations. Elective dissections are conducted on bodies of donors that are addressed as Silent Mentors. Of the twenty Silent Mentors used for this year's elective dissections, cancers were the cause of death in 11 of them. Other common causes were pneumonia, followed by ischemic heart disease and stroke. In this study we aimed to look at the benefits of human cadaveric dissections beyond just learning about gross anatomy.

Methods

Three hundred students enrolled for this year's elective dissections, which spanned between one and six weeks. In addition to normal anatomical structures and relations, participants were encouraged to identify and record any variations or abnormalities. Following discussions with tutors, suspected organs or tissues with pathology were excised for further histology analysis. To inspire the correlation between surgical anatomy and other foundational medical sciences such as physiology and pathology, consultant surgeons were invited to conduct surgical anatomy tutorials. At the end of the elective, online survey forms were sent to participants.

Results

Ninety students completed the survey, and the following are some of their responses:

- 'Dissection of different regions and systems had made me appreciate the interconnectedness and integration of body parts and systems.' 'The elective dissections has enhanced my knowledge and understanding of the gross anatomy' - 90% agreed or strongly agreed
- 'Cause/s of death and diseases of silent mentors helped to integrate anatomy, pathology and physiology' - 87.8% agreed or strongly agreed
- 'Surgical anatomy tutorials by surgeons were useful' - 86% agreed or strongly agreed

Furthermore, pathologic findings were highlighted during dissection. The applied anatomy and pathophysiology of the findings were further discussed by the consultant surgeons. For instance, Silent Mentor A died of breast cancer. Though mastectomy had been performed on this Silent Mentor, the mucinoid infiltrated lungs, enlarged nodular liver and metastatic lymph nodes helped students understand the bigger picture of pathophysiology

Conclusion

Cadaveric dissection allowed students to corroborate applied anatomy with their contextual knowledge of anatomy. Additionally, students learned the principles of surgical anatomy and pathophysiology. The emphasis of clinical relevance by consultant surgeons was well received by students. The dissection module concluded with suturing of the dissected parts of the silent mentors. On the whole, the elective dissection course has definitely given students further insight into the intricacies of anatomy as well as way beyond it.

MONGOLIAN TRADITIONAL MEDICAL CURRICULUM IN INNER MONGOLIA, CHINA AND MONGOLIA: A COMPARATIVE STUDY

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Background and Aims

Mongolian Traditional Medicine is a comprehensive system of medical and scientific knowledge that is accumulated through hundreds of years of rich history of nomadic civilisation and way of life. A study comparing Mongolian Traditional Medicine curricula with that of international standards is deeply needed.

Methods

Concept, structure and contents of Mongolian Traditional Medicine curricula of International School of Mongolian Medicine (ISMM) of Mongolia, Inner Mongolian National University (IMNU) of People's Republic of China (PRC), Inner Mongolian Medical University (IMMU) of PRC were qualitatively and quantitatively analysed utilising momentary descriptive modelling.

Results

Doctor of Mongolian Traditional Medicine curriculum of ISMM of Mongolian National University of Medical Sciences is a 6-year program with following credit hour structure: general medical foundation 49 /2352/, professional foundation 43 /2064/, practical 86 /4128/, elective 10 /480/, clerkship 10 /480/, with a total of 198 credit hours. Credit hour structure of 5-year Traditional Medicine curriculum at IMNU of PRC as follows: general medical foundation 53, professional foundation 61, practical 61, elective 31, internship 62, in total of 237 credit hours. IMMU of PRC structures its 5-year program as follows: general medical foundation 58, professional foundation 55.5, practical 38.5, elective 12+12, clerkship 58, in total of 235 credit hours are studied.

Mongolian Traditional Medicine is covered in 58 credit hours (38.2% of total), Biomedicine Sciences is covered in 94 credit hours (61.8% of total) as ISMM of Mongolia. At IMNU of PRC share of Mongolian Traditional Medicine is 47.5 credit hours (52.2% of total) while share of Biomedicine Sciences is 43.5 (47.8% of total). At IMMU of PRC, Mongolian Traditional Medicine comprises 67 credit hour (58.8% of total) with Biomedicine Sciences capturing 47 credit hour (52.2% of total). Differences have been observed in the shares of Traditional Medicine and Western Medicine. Mongolian Traditional Medicine ranges from 35.1-69.9% while Biomedicine Sciences range from 30.1-61.8%.

Mandatory credit hours of universities in Mongolia range from 90-97% while in Inner Mongolia they range from 57-65%. Differences is, once again, observed in percentage of mandatory credit hours of total credit hours between Mongolian and Inner Mongolian curricula. Percentage of lecture, practical training, seminar and homework also differ. For example, lectures range from 15.1% at ISMM of Mongolia, 73.9% at IMMU of PRC, to 85.2% at IMNU of PRC. In Inner Mongolia universities, dovetailing high percentage (24.7-26.2%) clerkship training, share of mandatory coursework is low.

Conclusion

Mongolian Traditional Medicine curriculum of International School of Mongolian Medicine, Mongolian National University of Medical Sciences of Mongolia is relatively inflexible, lagging in both electives and internship opportunities compared with other universities. Diploma of Mongolian Traditional Medicine curriculum should be organized in accord with international standards.

ENHANCING PERSONAL AND CLINICAL VALUES THROUGH OVERSEAS PLACEMENT EXPERIENCES

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Background and Aims

Overseas Experience Programmes and Overseas Community Involvement Programmes have been common features of health professional training for many years. Having finished undergraduate physiotherapy training with a clinical placement in East Africa (30 years ago) and then, as an educator, observing Australian students taking their own placement in Cambodia, the author was asked to join another overseas experience with Singaporean students travelling to remote Nepal. The humanitarian camp was organised by Project Aasha and involved medical students in years 1 and 2 of their training, and physiotherapy students in years 2 and 3 of their training. Separate to the humanitarian camp, a qualitative research project was designed involving a small group of physiotherapy students. The aim was to capture the preconceptions about the trip

and reflections on the impact of the experience on their learning. This presentation will focus on the author's reflection on the development of personal and clinical values in students, informed by the data collected during this project, and in the context of his previous experiences.

Methods

This project received SIT IRB approval (Project no. 2018124). All four students attending a humanitarian camp to remote Nepal were asked to join the research project. Participants received a briefing as part of preparation for the camp including some information provided by a physiotherapist trained and working in Nepal. During the time in Nepal, field notes were recorded along with individual narrative-style interviews with each participant in the field. The notes and interviews were used to feed discussion in a post-trip focus group held 1 month after the return to Singapore from Nepal. The transcripts of the first focus group were sent to the physiotherapist in Nepal for review with an emphasis on detecting any concerns she may have around cultural safety. Her review provided the framework for initial discussion in subsequent focus groups held approximately 6 months' post-trip. For this last round of data collection, two focus groups were run - one with the Year 2 physiotherapy students and one with the Year 3 students. The field notes, interviews and transcripts were all uploaded into NVivo 12, allowing for analysis of the groups and individual cases across the data collection.

Results

The formal coding and categorisation of the qualitative data will be presented in another upcoming forum. Presented here are the reflections of the researcher in terms of the development of clinical values, and in the context of his previous experiences. Students reported an emerging awareness or reinforcement of important values relating to respectful communication, cultural safety, sustainable interventions and practice, accessibility of health services, teamwork, and of the negotiated socio-political context. As well students attributed an enhanced ability to solve problems quickly, by thinking laterally, to their experiences in the resource poor setting in Nepal.

Conclusion

Some elements of the experience seemed to be especially important: strong leadership, living away from the normal frameworks of day-to-day life, learning without mandated assessment, learning in a clinical context with low resources, cross-disciplinary sharing, and establishing dialogue and engagement with local people.

EMBED TEACHING: END-OF-THE-MULTIPLE -BEDOGRAM TEACHING IN THE EMERGENCY DEPARTMENT

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Background and Aims

Medical education assessment has changed over recent times and as we know assessment can drive learning.

The traditional short case examination assessments involving real patients have largely been replaced by OSCE examination stations with standardised patients played by actors. The reasons for this have largely been around medico-legal risk and feasibility.

Standardised patients often have a paucity of real clinical signs and standing at the foot of the bed observing has little real world relevance.

This may have implications for examination skills in general but could this also have implications for medical students transitioning to junior doctors with regard to their ability to identify critically unwell and/or deteriorating patients?

It is very important for junior doctors in the emergency setting to have this trained skill. The skill enables, via rapid end of the bed assessment, escalation of supervisor involvement, prioritisation of patient care, and allocation of the patient to an appropriate area of the emergency department.

A brief narrative in the presentation will illustrate the importance of this concept.

Methods

A literature and web search will be presented around the concept of the "end-of-the bed-ogram" and methods of how this may be taught both historically and at present. Search terms used will include "end of the bed-ogram", "end of bed", assessment, examination, observation, clinical signs, emergency medicine, intensive care, critical care and nursing.

The EMBED teaching methodology will be described as a unique education method that is best done in busy emergency departments that are providing care to many multiples of patients at any one time. It could be done by a clinician or in this case by a medical education registrar supervised by an emergency medicine clinician with medical education qualifications. EMBED is currently run up to weekly for rotating medical students.

Results

The literature search demonstrates that the end-of-the bed-ogram is not a unique concept.

However, the EMBED teaching is a unique, innovative and novel education technique that could be used in the emergency department to develop this skill set. It would be complimentary to patient encounters and teaching in other disciplines and areas.

This is the lead up to qualitative educational research into this teaching technique and any educational gap it might fill in medical student teaching. We are also interested whether it would be useful for nurse education.

The proposed methodology and ethics of this research will be presented for peer review and input. Collaboration would be welcome from universities, emergency departments, medical and nursing.

Conclusion

EMBED is an innovative technique which we think may provide positive learner cognitive interactions and pattern recognition. We intend to explore medical student's perceptions of the utility of this activity in relation to other course learning opportunities and the competencies required for a first year doctor. There may be relevancy to student nurse education. Collaboration would be welcome.

THE PERCIEVED OF STUDENTS AND TEACHER OF FORMATIVE ASSESSMENT IN UNDERGRADUATE MEDICAL EDUCATION: A QUALITATIVE STUDY

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Background and Aims

The concept of "assessment for learning" has been widely defined as a model of assessment that facilitates learning improvement through a longitudinal approach of repeated measurement together with constructive feedback. Some studies apply this concept in the formative assessment. This study aims to explore the student's and teacher's perception of formative assessment and how it influences the teaching and learning process in the undergraduate setting.

Methods

We conducted a semi-structured focus group discussion with students and in-depth interviews with teachers. Data collection saturated in four FGD (twenty-nine students) and five in-depth interviews with teachers. We used the content analysis to construct the theme and sub-themes from the transcript.

Results

We found four major themes from students' perceptions relating to the implementation of formative assessment, such as "awareness of being observed", "concern about the result of assessment", "different feedback approach from the teacher" and "feedback approach influenced learning activity". From an in-depth interview with the teachers, we found three important themes such as the approach that usually done by the teacher is "general feedback according to group performance", "difficult to give individual feedback "and "need standardisation of marks in the formative assessment". We identified that the themes from students and teachers played an important aspect to consider in developing the quality of formative assessment.

Conclusion

By concerning two different points of view from student and teacher, we identified that the results seem to be in line and lead to specific aspects to improve in our formative assessment such as standardisation of scoring rubric, increasing the ability in giving and receiving feedback and the clarity of actual mark.

SHORT COMMUNICATIONS 17

The Effectiveness of Interprofessional Practice Activities at a Medical Centre in Taiwan
Yung-Sung Wen, Taiwan

Application of the Mini-CEX And Quick Feedback for Medical Student in Hue UMP
Van Chi Le, Vietnam

Utilising Virtual Reality Pelvic Simulator for Training of Insertion of the Levonorgestrel Intrauterine System is Equally Beneficial for Specialists and Non-Specialists Regardless of Years of Experience
Zhongwei Huang, Singapore

The Perceptions of Interns Regarding Their Preparedness for Their Roles in Clinical Pharmacology/Prescribing
Shane Bullock, Australia

Palliative Care Training: Beyond Hospital to Community; Beyond Specialist to Generalist
Yi Xu, Singapore

Cooperative Learning in Occupational Therapy and Physiotherapy Students in a 2:1 (Student: Educator) Format of Clinical Supervision in an Acute Hospital
May Eng Loo, Singapore

THE EFFECTIVENESS OF INTERPROFESSIONAL PRACTICE ACTIVITIES AT A MEDICAL CENTER IN TAIWAN

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Background and Aims

Changhua Christian Hospital (CCH), a medical centre in Taiwan, developed an interprofessional training activities based on the core competencies by Interprofessional Education Collaborative (IPEC). Our goal is to improve the awareness, values and team communication and operations of medical program directors engaged in interprofessional practice and teaching.

Methods

We developed a "Questionnaire for Interprofessional Practice (IPP) Training Effectiveness" to evaluate the effectiveness of medical program directors on implementation of IPP in our hospital. The questionnaire was composed of 4 domains (20 items) including "Value and Ethics"(5 items), "Role Perception and Responsibility"(5 items), "Team Communication" (5 items), "Team Operations"(5 items). The questionnaire scored with Likert 5-point scale, 1 indicates strongly disagree and 5 indicates strongly agree. The questionnaires were carried out at 3 different time occasions: before, one year after, and one and a half years. We provided immediate feedback to our participating faculty in IPP conference after each questionnaire session.

Results

The scores of the three occasions were as following: "value and ethics" domain: 4.17, 4.39, 4.45; "Role Perception and Responsibility" domain: 4.29, 4.39, 4.51; "Team Communication" domain: 4.32, 4.41, 4.48; "Team Operations" domain: 4.29, 4.42, 4.51. The data disclosed significant increase of scores in all 4 domains. The following items showed significant difference by T-test ($p < 0.05$). "Host performance (time control, timely feedback, guide discussion)", "Listening to team members' comments, respect and discussion", "Team members can provide constructive inputs", "Demonstrate important knowledge or skills in discussion of different profession", "Better consideration of the needs and values of patients or family members" and "Understanding their roles in the team and responsible tasks". The results demonstrated the IPP training activities seems to be effective to enhance the quality of interprofessional practice in our hospital.

Conclusion

We shared our experiences on how we developed interprofessional training activities are effective to improve the quality of IPP in a medical centre of Taiwan. The effectiveness of our interprofessional training programme needs to be further evaluated.

APPLICATION OF THE MINI-CEX AND QUICK FEEDBACK FOR MEDICAL STUDENT IN HUE UMP

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Background and Aims

Application of the Mini Clinical Evaluation Exercise (mini-CEX) integrated with feedback has been conducted among selected students of year 4 who are participating in clerkship rotations to enhance developing the clinical skills. With technical supports from Harvard Medical School within the framework of HPET (Health Professionals Education and Training for Health System Reforms Project) and IMPACT-MED (Improving Access, Curriculum, and Teaching in Medical Education and Emerging Diseases) projects in Vietnam, the mini-CEX and SPIKES feedback tools were modified for the local context use with the aims of getting the best practices before scaling up the mini-CEX application as a formative clinical assessment in Hue UMP.

Methods

The formative assessment trial of mini-CEX integrated with feedback was conducted by using the plan-do-study-act (PDSA) cycle. Randomly selected 80 Y4 students (20 students/discipline) who were in clerkship rotation for 8 weeks in 4 disciplines of Internal Medicine, Surgery, Ob-Gyn and Paediatrics. The mini-CEX was used to observe for 15-minute examination and interaction between the student and patient to assess four clinical skills including history taking, physical exam, professionalism and clinical reasoning. The mini-CEX observation was based on a clinical case in the list of diseases/health problems required for student Y4 to obtain the "interpreter" level of the RIME framework. A quick feedback was followed the observation for the students' improvement. After one year of implementation, an online feedback by faculty was conducted to get the inputs for scaling up the mini-CEX use.

Results

Analysing the results of phase one in Oct, 2018 and phase two in Nov, 2018, 45.2% and 31.4% of assessed student turns, respectively showed at least one unexpected skill among four required clinical skills for year 4, in which clinical reasoning skill accounted for the highest rate of unexpectation (80% and 45.5% respectively), then the unexpected percent of physical exams (70% and 45.5%, respectively) and followed by skills of professionalism and history taking. Compared to phase 1, the result of phase 2 showed an improvement of clinical skill development among the assessed students. In addition, most of involved students expressed their interest in clinical assessment and feedback which helped them identify what need to be improved for better learning. Faculty survey showed a positive feedback (100%) on the usefulness of mini-CEX; most of them agreed the number of skills and frequency of mini-CEX are 4 and 1 time/month, respectively.

Conclusion

Mini-CEX and feedback supported the students of year 4 to identify unsatisfied clinical skills to make plans for improvement that enhances their clinical skill development. Students respond positively to better learning the clinical skills required in year 4. For faculty involvement, it is recommended to have a strategy/policy to allocate time for them to conduct more formative assessment and feedback for their students.

UTILISING VIRTUAL REALITY PELVIC SIMULATOR FOR TRAINING OF INSERTION OF THE LEVONORGESTREL INTRAUTERINE SYSTEM IS EQUALLY BENEFICIAL FOR SPECIALISTS AND NON-SPECIALISTS REGARDLESS OF YEARS OF EXPERIENCE

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Background and Aims

The levonorgestrel intrauterine system (IUS) is essential for many gynaecological complaints and an effective treatment for heavy menstrual bleeding as well as contraception. However, its use is limited to mainly gynaecologists as it involves an invasive procedure of inserting the IUS into the uterine cavity and there are associated risks to the procedure which can carry serious complications such as uterine perforation resulting in infections, bleeding, further visceral injuries. Therefore, clinicians, be they specialists or non-specialists, should receive formal training and gain confidence before attempting the procedure on a woman. However, even amongst specialists, we want to determine if years of clinical experience and a prior experience will benefit from simulation training.

Methods

Employing VirtaMed GynoSTM IUD placement mobile set up simulator, we went to public institutions and private institutions with gynaecology services to allow the clinicians of all experience and years of training to attempt the simulator by performing a survey pre and post-utility of the simulator. The simulator provides video-recording and virtual haptic feedback while positioning and deployment of the IUD which includes the use of uterine sounding in various anatomies, manipulating the version and flexion of the uterus with a tenaculum forceps. The whole procedure takes about 15 minutes with a designated trainer who is familiar with the use of the simulator. The pre-survey examined the participant's a prior experience, training and confidence in placing the IUS and the post-survey examined how the participant had gained from the use of the simulator in terms of confidence level, usefulness of real time 'virtual' feedback as well as obtaining qualitative feedback on their overall experience using the simulator.

Results

A total of 232 participants worked on the simulator and 226 participants completed the pre-survey (97% response rate) while 213 participants completed the post-survey (92% response rate). In the pre-survey, 32.7% (74/226) of participants had never inserted an IUS before and they were junior doctors i.e. house officers, junior medical officers. 29/226 of the participants had ≥ 5 years of experience in O&G with 82/226 ≥ 10 years of experience; 41 participants did not fill up this segment. Amongst them,141/226 (62%) felt confident in placement of the IUS - 5% (4/74) of participants had never inserted IUS, felt confident they could insert an IUS, compared to 100% of all participants with ≥ 5 years of experience in O&G (Likert scale 1 to 5 - 4 and 5 being agree and strongly agree respectively). Post-survey saw 190/213 (89%) were rating 4 or 5 on their confidence in inserting the IUS with >90% of participants finding the simulator realistic and feedback from trainers very helpful. Amongst those ≥ 5 years of experience in O&G, 95% of them still find the simulator useful, with 90% find the simulator realistic even with their extensive experience. Comments from these experienced participants included, 'real-time', 'realistic simulation with video feedback', 'allows me to check my efficacy in insertion'.

Conclusion

Utilising virtual reality pelvic simulator training for insertion of IUS is equally beneficial for specialists with extensive experience and non-specialists alike.

THE PERCEPTIONS OF INTERNS REGARDING THEIR PREPAREDNESS FOR THEIR ROLES IN CLINICAL PHARMACOLOGY/PRESCRIBING

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Background and Aims

Medications are the most common intervention used to treat patients. In Australia, many patients experience an adverse drug event, of which around a half of these are considered avoidable. Most prescription errors are attributable to junior doctors. Indeed, medical students perceive themselves as unprepared for their prescribing roles as an intern.

This study was conducted to determine if medical interns in the Australian State of Victoria believe they were adequately prepared for their roles in clinical pharmacology/prescribing. Furthermore, aspects of clinical pharmacology/prescribing were examined to identify which, if any, require more attention in medical school and what teaching and learning methods would be best used to address those identified.

Methods

This study uses a mix of qualitative (completion of an online questionnaire) and quantitative (focus group interviews) research methods. The aspects of pharmacology examined comprised: Pharmacology/therapeutics content, Dosages, Drug interactions, Medication chart work, High risk medications and Patient education.

Results

There were 100 (12.4%) respondents to the online survey from a population of 808 interns working within Victoria.

Pharmacology/therapeutic content amount was viewed as insufficient, despite being of satisfactory quality. It was suggested timing could be changed to optimize learning. Dosage ranges were not seen to be taught or practiced during medical school and thus upon graduation students believe they were unprepared to prescribe the correct dosage.

Medication chart work was viewed dismissively in the focus group interviews. The survey indicated interns felt it was sufficiently taught during medical school. The majority of respondents (37.6%) felt prepared to write correct medication charts when they finished their medical degree.

High risk medications were taught adequately with interns believing they were adequately exposed to their usage clinically as a medical student. Despite this, 55.9% of respondents viewed themselves as underprepared to prescribe these medications and focus group respondents indicated they viewed this as a particularly important area.

Patient education was taught adequately during medical school according to 55.9% of respondents. However, the opportunities to practice this skill were seen by the majority (42.8%) as lacking during clinical placements, leading to only 38.1% of respondents feeling prepared to counsel patients upon completion of medical school.

Conclusion

Several areas for improvement were identified by the study. The domains in which interns indicated the least confidence upon completion of medical school were high-risk medications, dosages and drug interactions.

The focus group respondents indicated dosage calculation teaching as an area that needs additional teaching and learning opportunities. High priority topics for focus group respondents were high-risk medications and drug interactions.

PALLIATIVE CARE TRAINING: BEYOND HOSPITAL TO COMMUNITY; BEYOND SPECIALIST TO GENERALIST

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Background and Aims

With an ageing population and rising incidence of cancer and organ failures in Singapore, it is imperative to meet the increasing needs of patients living with these conditions in the community. Community nursing is a key pillar in population health which includes palliative care, defined as 'care for patients with life- limiting progressive serious illness including but not limited to care at the end of life'. The SGH Community nursing team hopes to bridge the gap between hospital and community care, and complements the palliative care services provided by the hospice care teams. As the community nurses are transited from acute care with limited experience in palliative care, the Community Palliative Care Education Committee recommended a structured training to equip them with "generalist" knowledge and skills in palliative care. More complicated cases will be referred to the community palliative specialists for appropriate interventions.

Methods

It was a challenging task to adopt a training approach for a large group of community nurses with diverse clinical experiences within a short time frame. Blended learning (mixture of online and classroom delivery) was identified as it reduces the time required for face-to-face lessons, allows learners to learn at their pace (online component) and uses data from the online modules to address learning gaps. The Lien Centre for Palliative Care (LCPC) collaborated with Assisi Hospice to develop a de novo training program in basic palliative care for community nursing in November 2018. Three runs of training were conducted for 31 community nurses over a period of 8 months. The training consisted of 1) online learning prior to classroom training 2) face to face interactive sessions with trainers, and 3) one-week clinical attachment to Assisi hospice inpatient, day-care and home-care services.

Results

The e-learning post-test evaluation showed an overall improvement in knowledge (introduction to palliative care, pain and symptom management, caring for the dying, basic communication at the end of life), with an understanding that more emphasis on symptoms management are needed. The face-to-face interactive workshops and clinical placement provided nurses with different perspectives on palliative care and deepened their knowledge through 'on-the-job' learning. The clinical learning in hospice settings was an effective way to allow experiential learning through interactions with patients and their families.

Conclusion

This training program is a first step towards capability building of community nurses in basic palliative care. Practicing as a competent generalist in community palliative nursing will need guidance from the nursing leads (nurse specialists in palliative care) and an ecosystem of collaboration with hospital teams and community hospice teams.

COOPERATIVE LEARNING IN OCCUPATIONAL THERAPY AND PHYSIOTHERAPY STUDENTS IN A 2:1 (STUDENT: EDUCATOR) FORMAT OF CLINICAL SUPERVISION IN AN ACUTE HOSPITAL

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Background and Aims

According to Johnson and Johnson (2001), putting students into groups to learn is not the same as structuring cooperation among students (p.12). Five basic elements are essential for a cooperative situation to occur, namely: Positive interdependence, Individual accountability, Promotive interaction, Social skills, and Group processing. The aim of this study was to investigate if the five essential elements of cooperative learning are present during the placements conducted in a 2:1 (student: educator) format, according to the perceptions of the students; and how the five essential elements were perceived to be present or absent.

Methods

Ethics approval was obtained and all OT and PT students who attended four runs of placement from June to August 2019 were invited to complete an online survey on their experiences. Participation was voluntary, and descriptive statistics are used to report the survey results. Open-ended questions were sorted into categories.

Results

Fifteen students completed the questions on cooperative learning. None of the students reported a presence of all of the five elements of cooperative learning in their individual clinical experience. All of them perceived that they were assessed based on their individual performance (individual accountability). 10 (66.7%) students reported that they were given the time and guided on reflecting with their peer to identify and solve problems that they had while working together (group processing). Nine students reported that they were taught how to learn and work together with their peer and all of the nine applied these skills (social skills). Eight students had goals for themselves and their peer to achieve together and seven encouraged their peers to achieve them (promotive interaction). Only two students perceived that their peer's performance affects theirs (positive interdependence). The students also provided examples of how the elements of cooperative learning were perceived to be present or absent.

Conclusion

Although not all five elements of cooperative learning were experienced by each of the students, the students contributed to each other's learning and sharing of experiences during their clinical placement. They also expressed appreciation of the individual feedback received on their performance, and the opportunities to discuss sessions together to come up with answers for questions they did not know. It may be beneficial to consider how activities and opportunities for students could be structured for them to cooperate and support each other during their clinical placements.

SHORT COMMUNICATIONS 18

Computer-Based Learning of Renal Function in Measuring Quantitative Urine Excretion
Hoa Nguyen Thi, Vietnam

A Case Report Curriculum to Improve Scholarly Activities for Medical Students
Desmond Teo, Singapore

Existing Pedagogies of Multidisciplinary Communication Education for Undergraduate Medical Students: A Scoping Review
Chermaine Bok, Singapore

Attitudes of Health Professions Students Towards Interprofessional Education
Anna Karenina Causapin, Philippines

Improving the Acquisition of Clinical Examination Skills With Guided Mental Rehearsal in E-Learning (IMAGINE)
Jianbin Ding, Singapore

Effectiveness of Video-Assisted E-Learning Module for Intrauterine Contraceptive Device Insertion Training Amongst Primary Care Doctors
Lai Peng Ng, Singapore

COMPUTER-BASED LEARNING OF RENAL FUNCTION IN MEASURING QUANTITATIVE URINE EXCRETION

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Background and Aims

The computer-based learning (CBL) has been proved its strengths in medical training for years. This study had been implemented in order to evaluate the CBL's efficiency in a laboratory physiological practice on renal functions.

Methods

40 sophomores have been recruited and randomly divided into control and CBL groups. Students of the control group performed their practical lesson, then they gathered to analyse experimental data on rabbit renal urine excretion in response to stimuli by reckoning manually marks on kymograph papers, then submitted their final report to lecturer. Whereas the CBL group did the same work in small working teams of 5 students with supported of a web-based program which had been developed on Labtutor system (AD Instruments, Australia), and finally submitted their reports. The reports of both groups were reviewed and marked by scale 0-10 by the same lecturer. Learning efficiencies had been evaluated basing on scores that students achieved and on student's interest on what they had done in the practical lesson.

Results

The CBL group conducted the experiment with higher performance, analysed results more correctly on factors that affects kidney function on urination, and showed more interesting to the experiment than those of the control group.

Conclusion

Self-organised of working team in physiological computer-based practice may motivate students. This method encourages the self-training ability and increase student's interest in learning.

A CASE REPORT CURRICULUM TO IMPROVE SCHOLARLY ACTIVITIES FOR MEDICAL STUDENTS

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Background and Aims

Scholarly activity is an important component of medical school training as it helps to improve patient care, facilitate critical thinking skills and acquire lifelong learning expertise. Barriers to scholarship have been identified include inexperience, insufficient time, absence of formal training, research curricula or mentorship and uncertainty of scholarship.

Case report is an ideal introductory scholarly activity and accessible form of scholarship as it requires less time commitment and may be the springboard for further scholarship activities. It also allows medical students to acquire important skills such as literature review, writing and critical thinking skills, collaborative writing with mentors, experience with the peer review process, and developing skills necessary to generate scholarly publications.

It is compulsory for Yong Loo Lin School of Medicine, National University of Singapore (NUSMed) Year 4 students to participate in a scholarly project during their elective period. With this need in mind, the authors have piloted a case report curriculum for students who are keen on working on a scholarly project during their elective posting.

Methods

The case writing curriculum included pre-reading materials, small group teachings, discussions, pre- and post-workshop quizzes. It was conducted in 3 sessions over a 2-week period during the elective. The cases were identified by the authors and students work individually or in pairs. Case report writing was supervised by individual authors and the students had opportunities to share their work and reflections at the last session.

Results

A total of 9 NUSMed Year 4 students participated in the case report curriculum. All students had not undergone formal training or written any case reports prior to this. Majority of them (7 out of 9) had minimal or no prior experience of engaging in scholarly activities. Median scores for pre- and post-workshop quizzes were 6 (range 3 - 8) and 7 (range 5 - 9) respectively. Among the 5 case reports that were written, while 1 of them has been accepted for publication, the rest are in the midst of being submitted for conferences and publications. All students agreed that this curriculum had been helpful and has inspired them to engage in research in the future.

Conclusion

Participating in a case report curriculum is an excellent way for medical students to acquire research skills in a structured and time-limited manner. It addresses the barriers to scholarship and has resulted in positive experiences and outcomes using Kirkpatrick model of assessment. It is an effective and efficient introductory means to promote scholarly activities - especially for research amateurs - in medical school. It is also believed that mentorship guidance during this process had also facilitated the understanding on the professional aspects and considerations involved in research. A longitudinal follow-up can further evaluate the long-term effectiveness of this curriculum.

EXISTING PEDAGOGIES OF MULTIDISCIPLINARY COMMUNICATION EDUCATION FOR UNDERGRADUATE MEDICAL STUDENTS: A SCOPING REVIEW

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Background and Aims

In an increasingly dynamic healthcare environment, along with the steady rise in the numbers of patients requiring long-term care for chronic illnesses, there is a growing need for effective communication among healthcare professionals to optimise patient outcomes. As highlighted by the World Health Organisation Framework for Action on International Education & Collaborative Practice, today's undergraduate healthcare professionals must equip themselves with multidisciplinary capabilities that are quintessential in a modern healthcare setting, beyond developing discipline-focused competencies. Thus, this scoping review seeks to identify existing evidence in improving multidisciplinary communication so as to inform educators on the issues related to multidisciplinary curriculum and to provide an attestation to the impacts of multidisciplinary communication on quality of care and patient healthcare outcomes.

Methods

Using the PRISMA guidelines, relevant articles were searched on Embase, CINAHL, PsycINFO, Scopus, PubMed, ERIC, Google Scholar and JStor. The initial search revealed 17,010 title and abstracts after duplicates removal. Using the selection criteria agreed upon by the authors with the PICO format, a total of 67 articles were included for thematic analysis.

Results

To date, existing pedagogies of multidisciplinary education consist of three main approaches: simulation exercises, classroom tutorials and patient experience. Students were put into multidisciplinary teams that provide platforms for learning between different healthcare professions, thereby fostering greater understanding of other healthcare professions. In simulations, there were simulated ward rounds, simulated family meetings, mock paging programmes, as well as role-playing, where students acted as various healthcare professionals in specific settings to accomplish a certain task. Patient experience involved clinical experience in hospitals and student-led clinics as well as shadowing other healthcare professionals and patient home visits. Tutorials consisted of didactic lectures on multidisciplinary teamwork, case discussions and ethical discussions involving various clinical scenarios, structured group exercises where students collaborated to solve a complex task, as well as learning about techniques such as resuscitation skills. Debriefing sessions were implemented following the interventions for consolidation of learning objectives on multidisciplinary communication. These sessions served as a platform to collect feedback from the students regarding their self-perceived improvement in awareness of other healthcare professionals' roles and responsibilities and the importance of multidisciplinary collaboration.

Conclusion

This scoping review outlines the current educational interventions for improving multidisciplinary communication and their effects were evaluated via the Kirkpatrick model. Design of various approaches were derived and modified from various pre-established literature and technology-based instruments for specific use. Nature and duration of interventions were considered based on cross-faculty scheduling constraints, availability of resources as well relevance to clinical settings. Student's feedback and assessment of the intervention is collected via validated survey instruments or novel questionnaires designed and reviewed by faculty members. Analysis of results were performed using validated statistical tools or via thematic analysis for quantitative responses. Facilitators and failures of current educational interventions on multidisciplinary communication serve as strong guidelines for future research and development. Educational interventions have to be designed with focus on multidisciplinary collaboration, thoroughly designed questionnaire and evaluated by established statistical tools to ensure their reliability and effectiveness.

ATTITUDES OF HEALTH PROFESSIONS STUDENTS TOWARDS INTERPROFESSIONAL EDUCATION

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Background and Aims

Interprofessional education (IPE) occurs when students of two or more professions learn with, from and about each other to improve collaboration and the quality of care (CAIPE, 2002). The thrust of IPE is to prepare the health professions (HP) students to be able to deliberately work together in a collaborative manner, with a common goal of providing better and safer patient care.

This study aimed to determine the awareness of the HP students about IPE, describe and differentiate their attitudes according to sex, course, year level, prior clinical and IPE experiences, and level of moral development, and determine which of the aforementioned variables can predict the attitude on IPE.

Methods

Correlational study was done among HP students using a validated three-part Interprofessional Education Attitude Scale (IPE-AS). Results were analysed using descriptive and inferential statistics.

Results

Of the 485 participants, 85% were aware of IPE. No significant difference was found between HP students' attitudes and sex (p-value=0.56) and prior IPE experience (p-value=0.81). However, there were significant differences noted in the students' perception of IPE according to course (p-value=0.0005), year level (p-value=0.001), and level of moral development (p-value=0.0001). The medicine students were found to have the most favourable attitudes towards IPE (Mean=44.86 ± 5.62), followed by pharmacy (Mean=42.99 ± 5.37) and nursing (Mean=42.36 ± 7.44) students. Students in year levels I (Mean=45.60 ± 3.54) and II (Mean=45.35 ± 3.64) were found to have more favourable attitudes on IPE than those in year levels III (Mean=42.91 ± 6.83) and IV (Mean=43.66 ± 6.53). Students with conventional (Mean=43.13 ± 5.12) and post-conventional levels (Mean=44.58 ± 5.85) of moral development have favourable attitudes while those with pre-conventional level (Mean=39.33 ± 9.04) have unfavourable attitudes on IPE. Multivariate analysis showed significant differences in the course (p-value=0.05), year level (p-value=0.04), and level of moral development (p-value=0.0001) and are shown to be predictors of attitudes towards IPE.

Conclusion

HP students are aware about IPE and have favourable attitudes towards it. There is no significant difference in the attitude of HP students towards IPE based on sex and prior clinical and/or IPE experience. However, significant differences in their attitudes toward IPE were seen across course, year level, and level of moral development.

Medicine students showed the most favourable attitudes towards IPE compared to nursing and pharmacy students. HP students in the lower year levels showed more favourable attitudes towards IPE compared to those in the higher years. HP students with conventional and post-conventional levels of moral development have more favourable attitudes towards IPE compared to those with pre-conventional level.

The HP students' course, year level, and level of moral development are the three variables that have a predictive value in the determination of the attitudes of HP students towards IPE.

IMPROVING THE ACQUISITION OF CLINICAL EXAMINATION SKILLS WITH GUIDED MENTAL REHEARSAL IN E-LEARNING (IMAGINE)

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Background and Aims

Clinical examination is an essential skillset perfected through repeated practice. Despite formal tutorials enforced by undergraduate curriculums, regular supervised training is impractical in view of the limited teaching manpower. Students often arrange self-directed practice sessions with one another. However, finding common timeslots is challenging. A facilitative tool of self-learning is needed.

Mental rehearsal (MR) is a straightforward self-learning technique proven to enhance the performance of advanced surgical procedures like laparoscopic cholecystectomy. Learners mentally visualise the steps of a task of interest, thereby reinforcing neuro-circuits activated during physical practice. MR is effective with no specific manpower or resource requirements. Its benefits may be extrapolated to learning clinical examinations.

We propose MR as a novel technique to augment the e-learning of Ophthalmic Confrontational Visual Field Examination (CVFE). We hypothesise that MR improves the cognitive and psychomotor domains of CVFE in novice learners.

Our aim is to evaluate the efficacy of guided MR in enhancing the acquisition of CVFE taught via e-learning.

Methods

We conducted a randomized, single-blind, controlled trial on third-year medical students with no clinical experience in Ophthalmology.

The control group (n=18) watched an e-learning instructional video (8 minutes: CVFE tutorial) followed by a 6-minute self-study session.

The MR group (n=19) had the same video plus a 6-minute MR audio recording (running commentary of CVFE with normal findings).

Two 20-item MCQ tests were designed by the study team. Tests were administered before the study (pre-test) to establish baseline knowledge, and immediately after (post-test) to assess the cognitive element of CVFE.

Ten students were randomly selected from each group to undergo Clinical Evaluation eXercises (CEX) for psychomotor domain assessment. They performed CVFE on standardized patients (played by experienced clinical tutors) with simulated visual field defects (right homonymous hemianopia). Blinded to the study intervention, the tutors graded candidates using a checklist-based marking scheme developed by our team. Standard setting and examiner calibration were done prior to the assessment.

Lastly, a timed essay test (describe the examination steps) was administered online for completion at home.

Results

Mann-Whitney U test was used to compare between groups, and Wilcoxon Signed Rank test within groups, all tests were one-tailed. Medians scores were reported.

Both groups had similar baseline knowledge (pre-test scores: control 50.0% versus MR 45.0%, p=0.0708); sub-group analysis of CEX candidates was similar (control 47.5% versus MR 40.0%, p=0.129).

After e-learning, there were significant improvements in the post-test scores compared to pre-test (control: 50.0% versus 70.0%, p<0.01) (MR: 45.0% versus 75.0%, p<0.01), suggesting gain of knowledge (cognitive). However, no difference was observed between the control group and MR group for post-test (70.0% versus 75.0%, p=0.492) and essay (63.6% versus 58.0%, p=0.378).

The MR group had significantly better actual performance of CVFE (CEX scores: MR 84.0% versus control 72.0%; p=0.0205), suggesting psychomotor enhancement from practicing MR.

Conclusion

MR, as an e-learning adjunct, improves the psychomotor performance but not the cognitive domain of CVFE in novice learners. MR may be a useful skill of self-learning, developing MR as a habit may allow students to practice independently at their own comfortable paces.

EFFECTIVENESS OF VIDEO-ASSISTED E-LEARNING MODULE FOR INTRAUTERINE CONTRACEPTIVE DEVICE INSERTION TRAINING AMONGST PRIMARY CARE DOCTORS

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Background and Aims

Insertion of intrauterine contraceptive device (IUCD) is an important procedural competency skill for primary care physicians. With increasing work and educational demands, procedural training in primary care has been challenging. An effective E-learning module on the procedure of IUCD insertion will allow time and location flexibility in training doctors at various locations.

We evaluate the effectiveness of a video-assisted E-learning module in procedural skill training for IUCD insertion amongst primary care doctors. The Nova T 200 IUCD device was used in this study as it involved more steps in insertion.

Methods

A quasi-experimental one group pre/post-test study was conducted to assess the procedural knowledge and skill (post-test only) with E-learning. Satisfaction with E-learning and perceived confidence level in procedure was assessed with an anonymous questionnaire survey.

31 primary care doctors, who attended IUCD insertion simulation training workshops held at a primary care training centre were recruited for the study. All participants consented to the study. The study was conducted prior to the simulation workshop. Pre-test knowledge was assessed using 20-item single best multiple choice questions (MCQ). Participants then viewed the 15-minute E-learning module onsite. This was followed by post-test assessment with the same set of MCQ questions with order of questions and options randomised electronically.

Participants were brought to a separate room individually to demonstrate the steps of insertion on a plastic model. Video-taping was done. The anonymised recordings were rated by 2 independent assessors using a procedural checklist.

Absolute standard setting was used to determine the minimal passing score (MPS) for the knowledge test. Conjunctive standard setting was used for the procedural checklist. 2 critical items have to be performed besides meeting the minimum total score of 14 out of 18 for the checklist to meet the MPS.

Wilcoxon-signed rank test was used to compare the pre/post-test knowledge scores.

Results

There was significant increase in the knowledge scores from a median (IQR) score of 12 (10-15) to 18 (17-19) post E learning, $p < 0.01$. All participants attained the MPS of 15 out of 20 (75%) post E-learning.

Only 20 out of 31(64.5%) participants meet the MPS for procedural checklist post E-learning. The interrater reliability for the checklist items had perfect kappa coefficient of 1.00 (p<0.001) for both raters in attainment of MPS. Intraclass correlation coefficient (ICC) for the total score was 0.85 (p<0.001).

26 out of 28 (93%) participants agreed/strongly agreed that they were satisfied with the E-learning course. The median score for confidence level in performing the procedure increased from 2 out of 10 (IQR 1 to 4.75) to 7 (IQR 5.25 to 8) ($p < 0.01$) after E-learning.

There was no association between meeting the MPS for procedural checklist with gender, age, post-test knowledge scores or confidence level.

Conclusion

The E-learning module is an effective way of delivering instructional content in procedural training. It is effective in imparting knowledge.

Psychomotor skills, however may be difficult to acquire by E-learning alone. It should be supplemented with deliberate practice and hands-on learning in simulation workshops.

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NURTURING STUDENTS COMMUNICATION SKILLS WITHIN A GENERAL PRACTICE CONSULT - A CASE REPORT

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Background and Aims

Empathetic communication is crucial to a physician's skill set. Showing empathy and communicating increasing patient satisfaction and is deemed by patients to be important for good quality care. However, whilst empathy is a well research field, how to teach empathy and empathetic communication is an area that lacks consensus. Methods and approaches for teaching this is diverse and evidence supporting each method is limited. At present extant literature has explored the various ways of teaching students how to communicate and behave however, little attention has been paid towards training students in the art of listening to both spoken and unspoken messages patients express during a patient-doctor interaction. Here we present a case report of a novel approach to teaching communication skills to undergraduate medical students.

Methods

Undergraduate medical students rotating through their general practice program are given an opportunity to sit in with a faculty member running a general practice clinic. During these sessions students are encouraged to observe the conversation, paying attention to the patient's body language, tone of voice and words used. After each consult, the faculty member guides the student using a series of questions to lead the student toward perspective taking and also to help them reflect upon both spoken and unspoken cues. The student is also guided to observe how various patients respond to what the doctor says during the consult and consider how communication needs to adapt moment by moment to the patient's responses by taking the patient's perspective.

Results

Students were given a flavour of 2 domains of active empathic listening:

- Interaction involvement (II), with regard to 3 specific dimensions of conversational engagement, namely attentiveness, perceptiveness, and responsiveness
- Conversational sensitivity (CS): the attention to and awareness of underlying meanings in conversations

The cognitive process involves 3 phases (sensing, processing, responding) and a perceived behaviour. The sensing phase includes not only sensing the actual words spoken, but also picking up patient's relational content and being sensitive to the emotional needs of patients. Students learned to seek clarification where appropriate, to integrate different parts of the patient's account into a working whole (processing phase), as well as, using questioning, paraphrasing and nonverbal immediacy to indicate active attention (response phase). It has been observed that students are better able to detect deeper and multiple meanings of words spoken. They develop the skill of interpreting what patients say; building competency to detect underlying meaning, irony and sarcasm. Other aspects of CS that students appreciate include perceiving power (the ability to detect underlying power struggles from conversations), empathic responsiveness, and perspective taking.

Conclusion

Whilst existing literature has looked into the diverse methods and approaches towards teaching the structure, content and communication delivery, there has been little attention paid to the art and skill of listening. Prior to speaking and communicating, it is crucial that physicians in training learn how to listen actively and constructively to patients to allow accurate diagnoses to be made, facilitate shared decision-making and individualised treatment plans for person-centred care.

STUDENT PERCEPTIONS ON THE EFFECTIVENESS OF DIFFERENT TEACHING LEARNING METHODS USED IN GENERAL PATHOLOGY

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Background and Aims

Undergraduate teaching in pathology for medical students at the Faculty of Medicine, University of Colombo commences in early 2nd year, as a part of the Applied Sciences Stream. General pathology is included in the Foundation I module. This module which runs for a period of nine weeks is the first module the students follow after completing the Basic Sciences Stream. General Pathology teaching-learning methods in the Faculty of Medicine, Colombo comprise lectures, practicals, tutorials, clinical lecture discussions (CLD) and virtual learning environment (VLE) activities. Although numerous teaching learning activities have been used over the years, didactic lectures remain the main method of teaching at our institute. Lecturers are in the general opinion that lectures are outdated and students find lectures less interesting. Therefore, introducing new methods is of great importance in the teaching learning process. Diverse innovative teaching learning methods are perceived differently by students. To determine medical students' perceptions on different teaching-learning methods (TLM) used in the teaching of general pathology is the aim of the research.

Methods

Students' feedback was obtained using a self-administered questionnaire at the end of the module from 10 consecutive batches (2009-2018). For the first five years, feedback analysis was done considering combination of lectures (Pathology, Pharmacology and Physiology) as one lectures series. From 2011, lectures were analysed as separate individual subjects for more validity and accuracy of the evaluation. The teaching activity they learnt the most and the activity they found most interesting were assessed.

Results

Lectures, practicals/tutorials, VLE, and CLD comprises of 46%, 22.24%, 9.52% and 22.23% of the teaching learning time respectively The average respondent rate per batch in the feedback was 59.39% (117/197).

Overall lectures were consistently selected as the teaching activity from which students learnt the most (Minimum Value 14.80%, Maximum Value 68.10%: Mean 50.25%) followed by practical/tutorials (Min value 4.50% Max Value 25.00%: Mean-14.10%).

VLE was selected as the most interesting activity ranging from 3.40% to 50.30%, from 2009-2015 (Mean-38.39%). Following introduction of team based learning during practicals in 2016, students selected practicals as the most interesting activity (Minimum Value 7.10% Maximum Value 40.20%, Mean-22.70%), with preference for this activity increasing from 24.80% in 2015 to 36.64 % in 2016.However the results were not statistically significant (Chi-square test 2.83, P value - 0.092). Trend analysis of practicals shows a linear increase whereas the trends of VLE and lectures have fluctuated.

Conclusion

Consistently pathology lectures remain as the most preferred pathology teaching-learning activity from which the students feel they learn the most. Introducing team based learning during the practical sessions resulted in a higher satisfaction rate among students and also catered to a broader range of learning styles of individual students. The students enjoy and find the interactive activities (VLE and practicals/tutorials) more interesting than the conventional teaching-learning methods.

DEVELOPMENT AND USE OF 3-DIMENSIONAL PRINTED TUBE THORACOSTOMY TASK TRAINER

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Background and Aims

Tube thoracostomies demand clinical urgency and technical expertise due to potentially serious complications. Current educational modalities of simulating this procedure lack anatomical detail and some suffer from logistical, ethical, religious and cost concerns that hinder junior physicians from receiving much needed practice. Hence, there is a need to find alternatives for teaching a thoracostomy.

This study aims to develop a cost efficient, anatomically accurate thoracostomy task trainer using 3D printing technology, and to evaluate physicians' experience with it in terms of anatomical fidelity and learning effectiveness.

Methods

Anonymized computer tomography data (CT) of a patient's thorax was obtained in the Digital Communication in Medicine (DICOM) format. It was segmented and processed using various 3D modelling and editing software to create a printable model. The model was printed using fused deposition modelling (bones and intercostal muscles) and material jetting technology (replaceable part of the simulator), using polylactic acid, thermoplastic polyurethane, and photopolymer materials (VeroWhite®, Tango Plus® and Support 706®) respectively. Physicians of varying appointments and experience levels (n=25) from the Emergency Medicine Department of Tan Tock Seng Hospital, Singapore were invited to test out this pilot model. Mixed methods were used to analyse the participants' responses to evaluate the model based on anatomical fidelity to real life (landmarking, palpation, incision, dissection, suturing) and learning effectiveness (learning, confidence, competency).

Results

The participants' feedback was ranked according to a 5-point Likert scale. The consensus was positive with regard to the construct of the model. The variables under anatomical fidelity were graded as follows: landmarking (mean= 3.24 ± SD = 0.723), palpation (mean= 3.24 ± 0.879), incision (mean= 3.04 ± 0.735), dissection (mean= 2.44 ± 0.821), ad suturing (mean= 3.00 ± 0.817). The variables under learning effectiveness were rated as follows: learning (mean= 3.20±0.764), competency (mean= 3.00 ± 0.913), and confidence (mean= 3.04 ± 0.790). Overall, participants were satisfied with the task trainer (mean = 3.24 ± 0.779). When comparing the non-expert (<15 chest tubes inserted) to the expert (>15 chest tubes inserted) learner groups, a significant difference in reported values was found in dissection (mean difference= 1.11 ± 0.245, p = 0.0001), suturing (mean difference = 0.974 ± 0.268, p = 0.001), competency (mean difference = 0.812 ± 0.335, p = 0.024) and satisfaction (mean difference = 0.916 ± 0.258, p = 0.002). The cost of the whole model is around USD$73, which was significantly cheaper than the average commercial model.

Conclusion

3D printing can be utilised to create a cost efficient, anatomically accurate model that is effective in improving the confidence and skill in a thoracostomy. This current task trainer, as a low fidelity simulator, will be more effective as a training tool for non-expert learners.

MODE AND TIMING OF FEEDBACK PREFERRED BY RADIOLOGY RESIDENTS

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Background and Aims

Previous survey of radiology residents in KK Women's and Children, Hospital, Singapore, showed that that feedback from radiologists was highly valued, right after tutorials for the Fellowship of the Royal College of Radiologist (FRCR) examinations.

This survey of radiology residents was carried out to determine which form of feedback is most preferred and when is the feedback most preferred.

Methods

Radiology residents rotating into Department of Diagnostic and Interventional Imaging in year 2019 were surveyed as to the form of feedback (face to face, SMS/WhatsApp, e-mail, computerised printout generated by RIS) and timeliness (at the end of morning or afternoon reporting session, end of day, end of week, end of month) of feedback was preferred. The gender of the resident, year of residency training and whether they had cleared the FRCR examinations were captured. Signed informed consent from each resident surveyed was obtained to have the data presented.

Results

Seventeen residents were surveyed, of which 11 were males and 6 females. There were 3 in the 2nd year of residency, 9 in the 3rd year of residency and 5 in the 4th year of residency. All 5 in the 4th year of residency had obtained their FRCR while 5 years 3 residents had obtained the FRCR. All (94%) except 1 resident preferred face to face feedback from radiologists. One resident preferred feedback via SMS/WhatsApp. None of the residents chose e-mail or computer printout of feedback. Most (9 residents) preferred feedback at the end of the morning / afternoon reporting session, 6 preferred feedbacks at the end of the day and 2 preferred feedbacks at the end of the month.

Year of residency had no correlation with timing of preferred feedback. End of session feedback was most preferred across Year 2, Year 3 and Year 4 residents.

For males, 64% preferred feedback at end of session, 27% at end of the day and 9% at end of the week. For females, 50% preferred feedback at end of the day, 33% at end of the session and 17% at end of the week. Difference between males and females did not reach statistical significance (p=0.8). Residents who have yet to obtain their FRCR preferred earlier feedback with 71% preferring it at the end of the session and 29% at the end of the day. For residents who had obtained their FRCR, 40% preferred feedback at the end of the session, 40% preferred it at the end of the day and 20% preferred it at the end of the week.

Conclusion

Radiology residents overwhelmingly prefer feedback given via face-to-face communication and 88% prefer the feedback to be given either at the end of the morning / afternoon reporting session or at the end of the day.

PHARMACOLOGY QUIZ AS AN EFFECTIVE TOOL TO INDUCE A PARADIGM SHIFT AND MOTIVATE STUDENTS TO STUDY

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Background and Aims

Pharmacology has been a demanding subject in terms of information that requires internalization and the knowledge so obtained is widely regarded as volatile. This may discourage the students to engage in learning the subject and they may tend to resort to become strategic learners. Hence, academicians employ various strategies to motivate student engagement and learning, such as quizzes. Students usually adopt a strategist approach; they study the subject near an examination and show little interest in attending the lectures or appearing in any optional formative assessments. This often results in poor exam performance in pharmacology leading to the discipline earning a reputation of being difficult and boring. We designed this study to incorporate a pharmacology quiz in our curriculum and explore whether it motivates learning.

Methods

The targeted population (n=353) of this non-randomized educational intervention trial comprised of BDS year 2 (n=48), as well as MBBS years 2, 3 and 4 students (n=106, 105, 94 respectively). The study comprised of a baseline pre-quiz (PreQ) pharmacology test, a quiz qualification (QQ) test and a follow-up post-quiz (PostQ) test. A knock-out quiz contest was held between student groups included based on QQ test scores. Subjective feedback was obtained with PreQ and PostQ tests.

Results

A total of 233 students (67.4% females) participated in PreQ, 194 students (68.4% females) participated in PostQ, whereas 97 appeared in the QQ test. As compared to PreQ an increase was reported in independent (self) study (66.8% to 74.5%) and textbooks use as main source of knowledge (30% to 46.6%). Figure-1 shows the test scores. A total of 163 students (46.2%, females 113, males 50) were included in the study (n= BDS-2 34, MBBS-2 62, MBBS-3 32, MBBS-4 35). A total of 46 students had all three test scores available (3-data points), while 117 students had PreQ and either of QQ or PostQ test scores available (2-data points). The mean±SD scores did not differ significantly between various tests. The PreQ to PostQ perception of pharmacology changed positively from “Difficult” (42.9% vs. 29.9%) to “Interesting” (37.2% vs. 54.1%). The common underlying reasons for perception are given in Table-1. A total of 194 students gave PostQ feedback, where 136 (70.4%) reported that quiz contest motivated them to study, 84 students had participated in the quiz activity, where 56 had attempted the QQ test and remaining were only audience. Preparation of examination remained their major reason to participate (26.6%) followed by honour/prize (22.8%). The open-ended comments (Table-2) were grouped together according to recurring themes. Of note is the decline in their complaint about teaching and a high demand to conduct more quizzes.

Conclusion

The quiz activity induces a positive change in students’ perception about pharmacology, and stimulates them to study. Although the short-term impact on gain of knowledge may not reflect in terms of test scores, students showed enthusiasm to participate, in order to prepare for examinations and achieve honour. The long-term effect of their motivation needs further study.

MODALITIES OF BLENDED AND ONLINE LEARNING IN THE MEDICAL CURRICULUM - WHAT WORKS? A SURVEY OF STUDENTS AND COURSE COORDINATORS

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Background and Aims

E-learning can have many benefits in improving convenience in terms of time and location of learning. The aim of the study is to explore a general view of students' and teachers' expectations of, and experiences in E-learning, such as U-reply, flipped classroom, echo 360 and blended learning, by using five fields of instruction framework in the domains of (1): Course design, content and learning environment, (2): Teacher-student interaction, (3): Interaction with peers, (4): Individual learning strategy and (5): Course outcomes (cognitive/ emotional).

Methods

The investigators selected courses with different modalities of online learning. Students and teachers were given surveys with items relating to the five fields of instruction. The student survey included expectations, experience, assessment of course outcomes and course satisfaction. Additional information was gathered e.g. demographics, times spent online, peer and teacher interaction. Course coordinators also completed a survey on their experience of online learning in the domains.

Results

Four courses (Human Structure I, Integrated Clinical Communication Skills I, Health in Community E-course and BASIC course) were selected based on different online learning approaches and integration.

A total of 126 students completed the survey. The total response rate was at 30.7%, of which 87 (69.1%) students were in the pre-clinical year and 39 (30.9%) students were in the clinical year. Five items of students' expectations were positively correlated with the course satisfaction: A clear structure of course and materials ($r=0.425$, $p=0.027$), flexibility of learning in regards to time and place ($r=0.471$, $p=0.013$), flexibility in the choice of learning strategies ($r=0.699$, $p<0.001$), opportunities for self-paced chapter exercises, application of one's knowledge ($r=0.438$, $p=0.022$), opportunities for controlling learning outcomes ($r=0.456$, $p=0.017$). For online experiences, students' autonomy of convenience (4.98±0.87), pacing and learning strategies (4.91±0.95) were associated with course satisfaction. Other factors which were positively correlated with the course satisfaction included: clear and well-structured course and learning material ($r=0.338$, $p=0.002$), user friendliness of the online environment ($r=0.432$, $p=0.003$), autonomy with time ($r=0.628$, $p<0.001$), pacing ($r=0.605$, $p<0.001$) and self-testing ($r=0.608$, $p<0.001$). Meanwhile course coordinators agreed course design, a clear course structure and materials (5.33±0.52), platform usability (4.67±0.52) were important and agreed that students' flexibility of learning (5.50±0.55) and motivation (4.67±0.82) are particularly pertinent although disagreed that tools can facilitate contact with other students (2.40±1.67). Interestingly, coordinators disagreed that they often deal with technical problems (2.67±0.82). Although they viewed their materials as clear and well-structured (5.33±0.52), they disagreed that students were competent in learning by themselves (3.67±1.63).

Conclusion

The findings emphasise important components of blended learning with particular emphasis on online learning development, support and user interface which are important considerations for faculty in resource allocation. The inclusion of self-testing and of results may help reassure teachers of students' learning progress.

Saturday 11 January 2020, 11.30am

Gemini 2, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 20

The Use of Simulation to Teach Specialty-Specific Skills
Khang Chiang Pang, Singapore

Effectiveness of Team-Based Learning Compared to the Traditional - Lecture Method Delivered to Surgical Case Management Conference of Medical Clerks of De La Salle Medical and Health Sciences Institute: A Randomized Controlled Trial
David Angelo Diamante, Philippines

Comparing Angoff and Borderline Regression Standard-Setting Methods in a Small Cohort OSCE
Bee Ling Xanthe Chua, Singapore

Development and Evaluation of a Mobile Anatomy Application For Learning External Cardiac Anatomy
Han Jie Koh, Singapore

Effects of Using Audience Response Systems (Kahoot and Google Form and Sheets) on Learning of Medical Students in a Large Class
Vasu Lertsiripatarajit, Thailand

Rubric to Assess the Performances of First- and Second-Year Japanese Medical Students Taking Patient Histories in English
Takahiko Yamamori, Japan

THE USE OF SIMULATION TO TEACH SPECIALTY-SPECIFIC SKILLS

Pang KC, Teo AQA, Chee YH

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Background and Aims

The profile of the 'average' patient and societal expectations are evolving, such that now more than ever before physicians are being held fully accountable for their actions and decisions. There is little tolerance for error, with this pressure transmitted down along the medical hierarchy from senior consultants to the house officers and medical students. During medical school, there is a necessary predominant emphasis on general medicine and surgery, with relatively less time spent on more 'niche' surgical subspecialties including orthopaedic and hand surgery. Feedback from new house officers reveal unfamiliarity and discomfort when dealing with orthopaedic patients despite a robust medical school curriculum.

The aim of this study was to assess the efficacy of using simulation to impart specialty-specific skills and knowledge, with the ultimate aim to improve the confidence of incoming house officers when dealing with orthopaedic patients.

Methods

Three groups of 6 students underwent simulation-based training with three different scenarios run. Each station comprised of 10 minutes for running of the scenario and a further 10 minutes for debriefing and discussion. The scenarios were devised based upon commonly-encountered or crucial issues amongst orthopaedic patients.

Results

The simulation scenarios were run successfully, with good feedback obtained. All participants felt the scenarios encountered during the simulations were realistic and reflective of daily practice. All participants reported increased confidence when dealing with similar patients in the future. Post-simulation retention of information was good.

Conclusion

Simulation-based training is an effective tool for imparting specialty-specific skills and knowledge to enhance the confidence of novice doctors when dealing with patients.

EFFECTIVENESS OF TEAM-BASED LEARNING COMPARED TO THE TRADITIONAL - LECTURE METHOD DELIVERED TO SURGICAL CASE MANAGEMENT CONFERENCE OF MEDICAL CLERKS OF DE LA SALLE MEDICAL AND HEALTH SCIENCES INSTITUTE: A RANDOMIZED CONTROLLED TRIAL

Diamante DA, Ferrater-Pabayos EML, Ramos GAF, Tiu JC, Jove MJD, Lawenko M

College of Medicine, De La Salle Medical and Health Sciences Institute, DSLU College of Medicine, Philippines

Background and Aims

Team-based learning (TBL), an innovative educational approach to learning, has gained its popularity among medical school institutions in which it revolves around the ideas of student-initiated activities, constructivism, and problem-based modules. Since the idea of TBL in the Philippines has not yet been fully adapted, the study aimed to determine the effectiveness of TBL compared to the currently used Traditional lecture (TL) method. The study was conducted on 74 4th year medical students of De La Salle Medical and Health Sciences Institute rotating in Surgery and post-test scores on the module were used to compare the effectiveness of both methods.

Methods

Seventy-four (74) 4th year medical students were given online modules and asked to answer an online pre-test 5 days prior to the activity. The students were then randomised into two groups to be designated in either TBL or TL method for a Case Management Conference. Allocation concealment was done through sealed envelopes. In the TBL group, the Individual Readiness Assurance Test (IRAT) served as the pre-test, and a Team Readiness Assurance test (TRAT) was done using small group activities. The students were then asked to answer a post-test after the activity. The relationship between post-test scores was statistically analysed using T-test after obtaining the results of the mean, standard deviation, and P-value. Further, participants of the TBL method completed peer evaluation forms in order to obtain subjective feedback. Peer evaluation responses were measured and interpreted using a Likert scale and were descriptively described. Moreover, the participants' willingness to adapt the learning methods in general was noted.

Results

The results revealed that the TL method with n = 37, has a mean post-test score of 95.5556 with a SD = 8.233268, while TBL method with n=37 had a mean post test score of 98.8889 with a SD = 4.522487. T-test on the two arms of the study incurred a p-value of 0.03423 using the OpenEpi application, with an interpretation of moderate evidence against the null hypothesis in favour of the alternative. Statistical evidence showed that the post-test scores of participants of the TBL method are significantly higher than that of the TL method. This it provides a positive effect on the academic performance of the students. Feedback form the 4th year medical students showed their willingness to adapt TBL as the instructional strategy for the Case Management Conferences.

Conclusion

Based on the academic performance of the 4th year medical students involved in the study, TBL method is a more effective instructional design than the TL method. Further, the subjects have a positive response with regards to adapting this strategy in future case management conferences. The researchers recommend a bigger population for future studies.

COMPARING ANGOFF AND BORDERLINE REGRESSION STANDARD-SETTING METHODS IN A SMALL COHORT OSCE

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Background and Aims

Since 2015, the Faculty of Advanced Practice Nurse (APN)-Internship Training (FAT) in Tan Tock Seng Hospital has been conducting preparatory objective structured clinical examination (OSCE) for the APN Interns to assess clinical competency prior to the national summative OSCE.

For small cohort OSCE standard-setting, it is not clear if judgmental methods such as the Angoff or empirical methods such as borderline regression (BR) is more defensible to set a passing score. In this study, we aim to compare the cut-off scores between 2 variations of modified Angoff and BR in the APN preparatory OSCE.

Methods

We trained and conducted modified Angoff with an expert panel of 11 APN raters for a 11-station OSCE assessing history-taking (n=3) with 6 domains, physical examination (n=3) with 5 domains, communications (n=3) with 3 domains and data interpretation (n=2) with 4 domains. The raters estimated the scores a borderline candidate will achieve in each domain of each station which was summated to form the overall cut-off score for that station (Angoff composite). In addition, the raters estimated the proportion of borderline candidates that will successfully pass each station; this was converted to a cut-off score for that station (Angoff global). During the OSCE, BR was used to calculate the cut-off score generated by the mean and the global ratings using liner regression. Four raters from the Angoff panel were OSCE examiners. The overall pass criterion for this OSCE was set by the exam committee a priori as greater than the mean pass mark and passing at least 8 of 11 stations.

Results

Twelve candidates participated in the preparatory OSCE. Angoff global cut-off scores were higher in all 11 stations compared to Angoff composite scores. The mean pass mark was higher for Angoff global vs Angoff composite (66.6% vs 63.3%, p=0.004). Using BR, the mean pass mark was 57.8%. Based on the overall pass criterion, the percentage of candidates passing the preparatory OSCE was lowest with Angoff global, followed by Angoff composite, then BR (33.3% vs 50% vs 75%).

Conclusion

Standard-setting using Angoff global produces a higher cut-off score, hence a higher failure rate compared to Angoff composite method; both variations produces unrealistically higher failure rate. BR method produces a lower cut-off score and more realistic overall pass rate. Use of modified Angoff for standard-setting in small cohort OSCE needs to be done with care. BR remains a defensible and feasible method as it requires lesser manpower and time.

DEVELOPMENT AND EVALUATION OF A MOBILE ANATOMY APPLICATION FOR LEARNING EXTERNAL CARDIAC ANATOMY

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Background and Aims

Anatomy teaching is a core component of medical curriculum given its importance and relevance to future clinical practice. As shortages and logistical constraints have limited the use of cadaveric materials, medical schools are now turning to newer technological methods such as three-dimensional virtual models and augmented reality for anatomy teaching. However, the effectiveness of these methods is still unclear. Hence, this study aims to develop a novel mobile anatomy application and evaluate its effectiveness in the instruction of external cardiac anatomy, compared to existing traditional methods. The secondary aim of the study is to investigate the relationship between spatial abilities and anatomy performance.

Methods

A photogrammetry three-dimensional model based on a plastinated heart specimen was used to create an application that allows students to learn anatomy in two different modes, a three-dimensional touch mode and an augmented reality mode. The application prototype was deployed to iOS devices. Year 1 undergraduate medical students were recruited to evaluate the efficacy of the application in a randomised controlled trial. The Revised Vandenberg and Kuse Mental Rotations Test was administered at the start to test for spatial abilities. A pre-test was also administered to check baseline anatomy knowledge. Participants were then randomised into two groups, engaging in self-directed learning using plastinated heart specimens (control group, n =14) and the application (intervention group, n =15) respectively. After self-directed learning, a post-test was administered to look for improvement in anatomy knowledge. Participants also responded to a five-point Likert scale questionnaire which examined student perceptions.

Results

Both groups saw a significant increase in scores from pre-test to post-test, and the application was comparable to plastinated specimens in terms of achieving learning outcomes as the improvement in scores were similar (control vs intervention, mean±SD 3.86±2.82 vs 3.53±3.00). While data comprising low performing students were inconclusive, the application has shown potential to be advantageous for students in this particular subset as there was a higher increase in scores for low performers using the application compared to plastinated specimens (control vs intervention, mean±SD 4.75±2.75 vs 6.25±1.50). Likert scale data demonstrated that students had a significantly better learning experience using the application compared to plastinated specimens (control vs intervention, mean±SD 3.45±0.77 vs 4.47±0.49, P <0.001). The application was also superior in encouraging attention and motivation (control vs intervention, mean±SD 3.75±0.73 vs 4.07±0.51) as well as three-dimensional comprehension (control vs intervention, mean±SD 3.74±0.73 vs 4.16±0.55). Students also highlighted the accessibility of the application as being beneficial in anatomy learning. This study also showed a significant positive correlation between spatial abilities test and anatomy performance (r =0.388, P =0.038).

Conclusion

Overall, the mobile anatomy application proved to be an effective learning tool that could be considered to complement existing anatomical pedagogy.

EFFECTS OF USING AUDIENCE RESPONSE SYSTEMS (KAHOOT AND GOOGLE FORM AND SHEETS) ON LEARNING OF MEDICAL STUDENTS IN A LARGE CLASS

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Background and Aims

Audience response system (ARS) is an electronic tool that allows the teacher to ask questions during class. Kahoot is one of the most popular ARS asking in multiple-choice questions (MCQ) format, which can be played individually (Kahoot-I) or as team (Kahoot-T). Furthermore, we created other ARS formats by combining Google Form and Google sheet to ask MCQ (Google-MCQ) and open-ended questions (Google-OEQ). In some group activities, Google-MCQ was used for a particular objective that pre-test questions were similar to post-test questions (SimilarPrePost) to evaluate students' progression. This study aimed to 1) compare students' opinion in using each ARS format in many aspects including augmenting students' participation, attention, understanding, enthusiasm, happiness, liking of ARS (liking), friendly competition (competition), courage to ask and answer questions (asking/answering), capturing concept (concept), feeling interested during class (interested), and following contents (following) compared to traditional lectures with or without subgroup analysis of students into quartiles of the summative score, and 2) determine correlations between students' opinion with their academic outcomes.

Methods

The 2nd preclinical year students, enrolled in the "SIID 325: Disorders of endocrine and multi-organ systems" subject, were recruited. More than 1 formats of ARS were used in accordance with study contents and activities in each class. After the end of the subject, students were asked to rate their opinion whether ARS could enhance their learning compared to traditional lectures in many aspects in a Likert scale, 1(strongly disagree)-2(disagree)-3(neutral)-4(agree)-5(strongly agree), with 86.22% (269/312) respondents. Students were classified into 4 groups, Q1(lowest)-Q2-Q3-Q4(highest) according to quartiles of the summative score.

Results

Students rated scores more than 4 out of 5 for almost all aspects including participation, attention, enthusiasm, happiness, liking, competition, asking/answering, interested, concept, and following in all ARS formats except understanding for Kahoot-I. Students rated the highest score for participation (4.37-4.47) for all ARS formats; and the lowest score for understanding (3.96-4.26) for Kahoot-I, Kahoot-T, and Google-MCQ and for happiness (4.15) for Google-OEQ. Among all ARS formats, score for Kahoot-T was rated highest in all aspects (4.35-4.48) except understanding (4.09). For a particular objective, SimilarPrePost, students rated the highest score for all aspects (4.43-4.60) compared to other ARS formats. Q4 students rated significantly higher score for enthusiasm than Q1 and Q2 students for Kahoot-I ($P<0.05$ all). Scores for happiness and liking were rated higher in Q2-4 students than Q1 students for Kahoot-T ($P<0.05$ all). Quartiles of the summative score had positive correlations with enthusiasm for Kahoot-I; happiness, following, and liking from Kahoot-T; attention, enthusiasm, happiness, and asking/answering for Google-OEQ; attention and enthusiasm for Google-MCQ; and enthusiasm for overall ARS ($P<0.05$ all).

Conclusion

Students agreed that using different types of ARS, which was applied in many activities, could promote their learning in many aspects. Students with low academic achievement rated lower score than other students in many aspects. For a particular objective, SimilarPrePost could enhance students' learning compared to using ARS alone. Thus, types of ARS should be appropriately selected to match activities in each class and students' background.

RUBRIC TO ASSESS THE PERFORMANCES OF FIRST- AND SECOND-YEAR JAPANESE MEDICAL STUDENTS TAKING PATIENT HISTORIES IN ENGLISH

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Background and Aims

We have been developing a rubric to assess the performance of first- and second-year Japanese medical students taking patient histories in English. In 2015, our first rubric consisted of spoken English proficiency (SEP), communication and interpersonal skills (CIS), integrated clinical encounter (ICE), and internalisation. These first three sections were scoring sub-components used in the USMLE (Step 2 Clinical Skills) and were adjusted for history-taking performance evaluation at Nihon University. The internalisation section was especially designed for an English training summer camp organised by Aichi Medical University. The first challenge in our rubric development was to make a suitable ICE section for pre-clinical medical students who have difficulty choosing relevant questions to ask in order to narrow down a possible diagnosis. Through quantitative and qualitative analyses of trials of evaluating a small group, two modifications were made, arriving at our 2018 version resulting in three sections: SEP, CIS and Sequence of Questions (SOQ). This version was put to use in a history-taking class at International University of Health and Welfare and received more user feedback from the teachers. This study investigates the user feedback and discusses the usability of the evaluation rubric in its application to a larger cohort in order to further refine the descriptors in the three areas and to confirm level settings.

Methods

To collect qualitative data from the users of this rubric, an interview was conducted, consisting of a dialogue between rubric developers and a user; the interview was 50 minutes in length and video-recorded. Interviewee was a medical doctor teaching a history-taking skills course in English for 140 first-year students. The doctor evaluated the history-taking performance of their students by using the 2018 version of our rubric. Open-ended questions were mainly intended for the collection of user impressions on usability in applying it to the large cohort. Comments were extracted from interview notes and recorded video and analysed qualitatively.

Results

Comments from a user showed that our rubric had room for minor improvements. In SEP, descriptors were simple and clearly defined and helped in evaluation decisions but the level setting of the highest level needed clarification. Examples of observable behaviours in CIS might have been helpful in making the evaluation but not in SEP and SOQ as each included possible examples of observable behaviours found in the other. It was also suggested that missing from our rubric was attention to how well a student elicited important information from a patient.

Conclusion

In a large cohort trial of our history-taking performance rubric, user feedback was collected through an interview between rubric developers and a user. Feedback included suggestions for further improvements of descriptors; possible exclusion of examples of observable behaviours; and the possible addition of another criterion to the SOQ, such as how well a student elicited important information from a patient. Our presentation will demonstrate the latest version of our rubric and plans for future modifications as well as reliability verification methods.

SHORT COMMUNICATIONS 21

Sengstaken-Blakemore Tube Insertion: An Innovative Approach to Simulation-Based Training
James Kah Hann Ho, Singapore

Barriers to Academic-Practice Collaboration in the Preceptorship of Pre-Registration Nursing Students
Manisha Dev, Singapore

A Pilot Course of Learning to Learn Effectively in the Postgraduate Exam Setting
Wayne Hazell, Australia

Trends and Factors Associated with the Confidence and Knowledge Levels of Occupational Therapists in Providing Basic Low Vision Services
Yi Hui Lim, Singapore

The Association of Distance and Travelling Time to Campus of Medical Students of Atma Jaya Catholic University with Lateness Frequency and GPA
Soegianto Ali, Indonesia

Knowledge, Attitudes and Perceptions of Psychiatrists and Psychiatry Residents Working in Public Hospitals in Singapore Toward Spirituality in Psychiatry
David Choon Liang Teo, Singapore

SENGSTAKEN-BLAKEMORE TUBE INSERTION: AN INNOVATIVE APPROACH TO SIMULATION-BASED TRAINING

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Background and Aims

Sengstaken-Blackmore tube (SBT) insertion is an emergency, life-saving salvage treatment for control of bleeding oesophageal/ gastric varices. Whilst its usage has decreased with the increasing availability of advanced endovascular therapy, in up to 20% of patients, there may be initial failure to control bleeding. Insertion of an SBT - whilst a temporising measure to secure haemostasis- is a vital skill to possess. Its declining usage has resulted in trainees not feeling confident with the insertion and management of a SBT. The lack of experience with SBT insertion, coupled with potentially fatal risks of gastric/oesophageal erosion and perforation with SBT misplacement and balloon over-inflation, have identified a prompt need for formal training.

Methods

Two structured training workshops were conducted for 38 doctors - ranging from residents to senior consultants. Identical pre and post-tutorial surveys mainly assessed key knowledge surrounding insertion sequence and pre/post-insertion monitoring protocol. A tutorial and interactive demonstration, was followed by hands-on simulated practice for participants, using a SBT and endoscopy on a model made from flexible plastic tubing (used to mimic the oesophagus), attached to the top half of a plastic bottle (to represent the cardia of the stomach).

Results

29% of respondents with prior endoscopic experience had never inserted an SBT before; 17% also felt below average confidence in SBT insertion. 58% of all participants felt more training in all aspects of SBT preparation, insertion and monitoring post-insertion was required.

Perceived confidence in SBT insertion was strongly correlated to the number of SBTs previously inserted (rs=0.41178, p=0.01021), and moderately correlated to the years of endoscopic experience (rs=0.35098, p=0.03073). Yet interestingly, there was no statistically significant difference in overall pre-tutorial scores, irrespective of prior endoscopy experience. There was, however, a 14% increase in the mean test scores in participants with 2 or more prior SBT insertions (p-value=0.049637). Over 61% did not correctly identify all potential complications of SBT insertion, with 41% and 23% not aware of asphyxiation and oesophageal rupture as potential complications respectively. Notably, over 13% with prior SBT insertion experience chose an incorrect balloon inflation sequence, with over 86% of all respondents incorrectly identifying the maximum pressure when inflating either the gastric/oesophageal balloon. Pre-vs post-training, the median test score improved from 66% to 83% (p-value=0.00052), with improvement in the median confidence score also observed (p-value=< .00001). Over 96% of respondents agreed that the training session was useful in learning about SBT preparation, its indications, insertion, and post-insertion management, with 100% agreeing that hands-on practice on the model was beneficial in familiarising themselves with SBT insertion.

Conclusion

Training workshops with this innovative model provides a simple and novel, yet cost-effective option for simulating SBT insertion. Visual conception and invaluable hands-on practice under direct supervision, increases operator confidence and knowledge, and should be considered for future training. The pre-session survey has identified important deficiencies that need to be addressed at all levels, including a lack of awareness of complications of SBT insertion, balloon inflation sequence and pressures, and monitoring post-insertion.

BARRIERS TO ACADEMIC-PRACTICE COLLABORATION IN THE PRECEPTORSHIP OF PRE-REGISTRATION NURSING STUDENTS

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Background and Aims

Preceptorship is the leading method for nursing students' clinical training and a requisite in pre-registration nursing curricula. An integral element of preceptorship programmes is academic-practice collaboration, whereby nurse preceptors and academic educators work jointly in facilitating nursing students' clinical learning and corroborating their readiness for practice. However, the lack of academic-practice collaboration is extant in the literature. Therefore, the aim of our study is to explore barriers towards academic-practice collaboration among nurse preceptors and academic educators.

Methods

A qualitative study was undertaken with a purposive sample of twelve nurse preceptors and thirteen academic educators (n=25) across three hospitals and one university in Singapore. Semi-structured interviews were audio-recorded with consent of participants and transcribed verbatim. Interviews were conducted until data saturation was achieved. Transcripts were analysed using thematic analysis.

Results

Four main themes emerged from the data analysis. The first, 'Lack of direct communication', illustrates how hierarchical reporting structures within healthcare institutions mandate clinical instructors to function as a liaison between nurse preceptors and academic educators. To prevent overstepping hierarchical boundaries, nurse preceptors and academic educators rarely communicate directly with each other. The second, 'Uncertainty about learning objectives', describes the lack of provision of preceptorship programme guidelines and lack of clarity pertaining to intended preceptorship programme outcomes among nurse preceptors. As a result, nurse preceptors and academic educators seldom corroborate on nursing students' readiness for practice, causing collaborative goals to become fragmented. The third, 'Discrepancy in clinical assessment', describes the subjectivity of clinical assessment criteria and nurse preceptors' interpretation of competency statements based on their personal predispositions. This causes academic educators to overturn nurse preceptors' clinical assessment outcomes to prevent a false failure attributed to mismatched expectations. The fourth, 'Not knowing each other's practices', discusses both academic educators' and nurse preceptors' lack of familiarity with each other's institutional policies and procedures due to their lack of access to information. This contributes to dichotomies in clinical practice and the prevalence of theory-praxis gap.

Conclusion

Healthcare institutions should redefine communication in a manner in which academic educators and nurse preceptors can communicate directly with no fear of backlash. We posit the leverage of mobile communication technologies for direct communication between academic educators and nurse preceptors. Given the prevalence of mobile communication usage, this will serve as an efficient means to disseminate vital information. Additionally, this will promote a democratic communication model that enables nurse preceptors and academic educators to connect at an individual level, thereby bolstering stronger collaboration. Benefits of a preceptorship preparation programme organised by academic institutions are clear to see for both academic educators and nurse preceptors. Challenges include the engagement of nurse preceptors who struggle to balance their commitments inside and outside of work due to manpower constraints. A blended learning approach through simulation-based learning and online media, curated by academic educators and alumni practising nurse preceptors can have a lasting impact and considered a feasible means to overcome these barriers to academic-practice collaboration.

A PILOT COURSE OF LEARNING TO LEARN EFFECTIVELY IN THE POSTGRADUATE EXAM SETTING

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Background and Aims

The Australasian College for Emergency Medicine (ACEM) requires trainees to sit and pass a written examination before progressing onto an OSCE examination. The written component comprises a multiple choice paper (SCQ) and a short answer question (SAQ) component, both of which must be passed. At the exam prior to the pilot course being run, only 126 of 229 of candidates Australasian-wide passed the SAQ component and 118 of 229 (51.5%) passed overall. This meant that we had many local candidates who were also not successful.

To assist candidates, we ran a "snap" 2-day pilot course addressing the SAQ component. There was some traditional SAQ practice and advice but specific sessions were run on the evidence and theory of learning effectively, cognitive load, cognitive aids, and some novel diagnostic techniques including "thinking out aloud" to an observer while doing SAQ papers.

Our aims were to assess the overall course, what was new to trainees and what would lead to a change in their preparation strategy. In particular did these trainees think that learning about effective learning was required and at what stage of training. A small number of medical students also attended the learning effectively sessions as we wondered whether this should be introduced in the medical school.

Methods

A post-course evaluation survey was conducted with a range of exploratory statements accompanied by a 10-point rating scale such that strength of agreement or disagreement could be measured. Techniques used in the course were also rated out of 10 on a not useful to very useful scale. Course participants were asked free-text questions: 1. Can you advise which of the concepts today were new and most useful; 2. Can you advise what changes you have made or might make as a result of this course; and 3. Any other comments you would like to make regarding your experience.

Results

Fourteen evaluations were received from a total number of 16 course participants and at the time of the abstract we hope to achieve more evaluations as the course has just been run. Most course participants strongly disagreed that they had had previous similar teaching about effective learning theory (average rating 2.9, most common rating 1). Most strongly agreed that this would alter their exam preparation strategy and that learning about effective learning would have been useful earlier in their training and at the start of their exam preparation (no rating below 8 and average 9.6). The think aloud exercise had a dichotomy of responses.

Conclusion

More evaluation data is required but it may be that we should teach medical students and post graduate doctors how to learn effectively long with the evidence attached. The think aloud diagnostic activity may be more useful for trainees that have had difficulty passing the exam. We cannot assume effective learning strategies have been learned.

The course content, design and effective learning strategy theory addressed will be discussed. The think aloud SAQ diagnostic technique will be explained along with a template for trained observer use.

TRENDS AND FACTORS ASSOCIATED WITH THE CONFIDENCE AND KNOWLEDGE LEVELS OF OCCUPATIONAL THERAPISTS IN PROVIDING BASIC LOW VISION SERVICES

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Background and Aims

With Singapore's ageing population, there is an expected increase in the prevalence of sight-threatening conditions related to age and chronic diseases. Practitioners need to be prepared to provide low vision services to meet this growing healthcare need. It is highly advocated that all Occupational Therapists (OTs) be able to provide basic low vision services, including basic visual screening and interventions to facilitate independence, as well as initiate referrals to appropriate services and formulate discharge plans for people with visual impairments. Till date, there are no studies exploring local current practices, confidence levels and knowledge levels of generalist OTs who have not received specialised training in low vision rehabilitation in Singapore. Therefore, this study aims to 1) describe the perceived adequacy of training, confidence and knowledge levels of inpatient OTs in providing basic low vision services, 2) describe the factors and trends associated with OTs' confidence and knowledge levels, and 3) identify current barriers to OTs' management of patients with visual impairments in the inpatient setting.

Methods

35 inpatient OTs who were working in an acute hospital and have not received specialised training in low vision rehabilitation completed a survey and a knowledge quiz. The survey sought descriptive information on professional backgrounds and practice preferences, as well as perceptions on adequacy of training and confidence using a 3-point Likert-type scale. The knowledge quiz consisted of 20 multiple-choice questions adapted from a published low vision teaching resource. Statistical analysis was performed using STATA v.13.0.

Results

Majority of the respondents (82.9%) did not perceive adequate preparedness from their academic programme. 42.8% of them reported receiving some form of training in low vision rehabilitation after undergraduate studies. 94.3% of respondents indicated the need and interest to seek further training in low vision rehabilitation. The mean overall confidence score among respondents was 57 out of 100 points (57±12.2). 70% and 88.6% of respondents were not confident in providing basic low vision screening and interventions, and developing discharge plans for patients with low vision, respectively. Prior experience in collaborations and referrals to community resources for patients with low vision was significantly associated with perceived confidence in providing services to this population ($p<0.05$). The mean knowledge score among respondents was 13 out of 20 points (13±2.57). Overall, there was an inverse trend between the respondents' years of practice and their confidence and knowledge scores, as well as an inverse trend between respondents' overall confidence and knowledge scores. The three most common barriers identified for managing patients with visual impairments were 1) unfamiliarity with interpretation of assessment results, 2) unfamiliarity with tools available and when to use them and 3) patient-related factors, such as cognition.

Conclusion

Findings revealed a crucial need for development of a basic low vision rehabilitation training programme catered to the local population and practice setting for generalist OTs. This study identified relevant training needs and provided an initial direction for the development of strategies to improve OTs' confidence and knowledge levels in providing basic low vision services in Singapore.

THE ASSOCIATION OF DISTANCE AND TRAVELLING TIME TO CAMPUS OF MEDICAL STUDENTS OF ATMA JAYA CATHOLIC UNIVERSITY WITH LATENESS FREQUENCY AND GPA.

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Background and Aims

Medical Study Programme of Atma Jaya Catholic University of Indonesia (UAJ) is one of the leading private medical schools in Indonesia. A substantive number of the students come from outside of Jakarta and have to live in private dormitories in the vicinity of Campus. Moreover, being a congestive city, some students from suburb of Jakarta also stay in those private dormitories. The aim of this study was to evaluate the lateness frequency and the GPA of students who lived in the private dormitories surrounding the campus and compare to that of students who lived in their parent's house.

Methods

All second year Medical Students of UAJ was included as respondents of this study. They were subjected to inquiries on distance of their residence to the campus, the transportation mean they used, duration of their travelling time and the frequency of lateness in their first academic year. ANOVA test was used to assess the association of the lateness frequency, the abovementioned data and their GPA.

Results

As with most medical school in Indonesia, the proportion of women was greater than men (126 vs 51). More students lived in private dormitories compared to those who lived with their parents (111 vs 66). Most of the private dormitories were located less than 500 m, took less than 30 minutes of travelling time and walked to the Campus (77%, 99% and 95% respectively). Students who resided with their parents mostly lived further (98% lived more than 500 m), took more time for travelling to Campus (76% took more than 30 minutes) and use various means of transportation to the Campus 100%. However, the frequency of lateness between these two groups was not significantly different despite the distance and their travelling time. Analysis of their GPA reveal that students who lived further and needed more travelling time had statistically better achievement and the association probably related to the lateness frequency but not the type of residence.

Conclusion

Distance, duration of travelling time, and mean of transportation were not related to the frequency of lateness of the respondents. GPA of the students who lived further from Campus in their parents' house was significantly higher than those who lived in the private dormitory in the vicinity of Campus. The GPA was also inversely associated with the frequency of lateness. Further study is needed to elucidate the role of self-efficacy profile of the two groups of students in association with the frequency of lateness and their GPA achievement.

KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF PSYCHIATRISTS AND PSYCHIATRY RESIDENTS WORKING IN PUBLIC HOSPITALS IN SINGAPORE TOWARD SPIRITUALITY IN PSYCHIATRY

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Background and Aims

Spirituality is concerned with the transcendent and an individual's connection to a larger reality or context of meaning. Religion is the form that spirituality takes within given traditions, with basic tenets or beliefs often set within a historical context (Josephson and Peteet, 2007). There is growing awareness of the relevance of spirituality to mental health issues. However, formal training for psychiatrists in this area is limited in Singapore.

We aimed to survey the attitudes and perceptions of psychiatrists and psychiatry residents in Singapore's public hospitals toward spirituality in psychiatry. We also aimed to examine their interest and past learning experiences, identify knowledge gaps, as well as barriers to discussing spirituality with patients.

Methods

We sent an email invitation to all psychiatrists and psychiatry residents working in Singapore's public hospitals to participate in a web-based survey on spirituality in psychiatry. Recruitment lasted for 3 months. Spirituality and religion were defined as above in the invitation to ensure a uniform understanding of the terms and face validity. Our survey was adapted with permission from authors of a previously published study on Canadian psychiatry residents' attitudes toward spirituality in psychiatry. Additional questions were formulated based on curriculum suggestions by the Royal College of Psychiatrists. We performed descriptive statistical analysis on the data.

Results

One hundred and twenty-three respondents (77 psychiatrists, 46 residents) completed the survey (45.6% response rate). 96 respondents (78.1%) felt that spirituality is an important aspect of psychiatric care. However, majority (66.6%) had not received specialist training in addressing spiritual issues in psychiatric practice and were interested in learning more. There were mixed opinions on the appropriateness and ethical implications of discussing spirituality with patients. This included concerns that discussing spirituality may be perceived by patients as an attempt to influence their beliefs. Insufficient time and knowledge were the main identified barriers to discussing spirituality with patients. Patient care and interpersonal and communication skills were the Accreditation Council for Graduate Medical Education (ACGME) competencies which respondents felt could be enhanced with formal training to address patients' spiritual issues. Psychiatrists and residents had significantly different opinions on whether: spiritual beliefs can compound mental illness; insufficient time, concern about offending patients, and disapproval from other psychiatrists were barriers to discussing spirituality with patients (all $p < .05$).

Conclusion

Majority of psychiatrists and psychiatry residents in Singapore acknowledge that addressing spiritual issues is an important aspect of psychiatric care. However, most feel insufficiently trained or knowledgeable to do so, and are interested to learn more. Insufficient time and ethical concerns are other barriers to discussing spirituality in psychiatry that need to be addressed.

Reference

Josephson, A. M., & Peteet, J. R. (2007). Talking with patients about spirituality and worldview: practical interviewing techniques and strategies. *Psychiatric Clinics of North America*, *30*(2), 181-197.

Saturday 11 January 2020, 2.00pm

Aquarius 2, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 22

How Do International Students Learn Japanese Medical Vocabulary in Medical School?
Tomoaki Inada, Japan

The Big Effects of Introducing the Mini Clinical Evaluation Exercise (Mini-CEX) on the Physiotherapy Preceptorship Programme in National University Hospital (NUH)
Yijun Loy, Singapore

Altruistic Behaviour Sustainability Among Medical Students of the De La Salle Medical and Health Sciences Institute (DLMHSI): An Explanatory Sequential Mixed-Method Study
Loiue Stihl Balanquit, Philippines

Flagging Registrars: A Meta-Analysis and Meta-Synthesis of Flagging and Exam Performance in General Practice Training
Jill Benson, Australia

Beyond CME – Moving Towards Value Creation in CPD
Lay Ling Tan, Singapore

Effects of Introducing "Code of Conduct for Cadavers" on Medical Students' Attitudes
Mahboobeh Khabaz Mafinejad, Iran

HOW DO INTERNATIONAL STUDENTS LEARN JAPANESE MEDICAL VOCABULARY IN MEDICAL SCHOOL?

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Background and Aims

Some countries, including Japan, teach medicine through the medium of their native language. Almost all Japanese universities only enrol international students who are proficient in the vernacular language. However, from 2017, the International University of Health and Welfare, School of Medicine began to annually accept 20 international students who are not proficient in Japanese at the time of their enrolment. Such students are required to acquire a large number of technical terms in the first two years of their medical education. Teachers thus develop and deliver Japanese language classes to such students to enhance their vocabulary. However, effective methods of teaching Japanese medical vocabulary have not yet been adequately explored. This study aims to utilise test data to examine the ways in which international students learn Japanese medical vocabulary.

Methods

We conducted four vocabulary tests (in April, July, and December of 2018 and in February 2019) to 12 international students (8 men and 4 women) in the 2nd year of medical school. These students attend Japanese language classes delivered by us. The students who were tested included 6 from quasi-Kanji areas (Vietnam) and 6 from non-Kanji areas (Mongolia, 2; Myanmar, 2; Indonesia, 1; and Cambodia, 1). The researchers created 4 sets of the Japanese vocabulary test using the random function of Microsoft Excel. Around 90 words were extracted from 3 medical textbooks for the purpose of use in the tests. Words were queried using Kanji characters (Chinese characters, e.g., 患者), and the test subjects were asked to respond by reading the Kanji (RK) and by producing its English translation (ET). For example, if the word " 患者 " was presented, the appropriate answer would be " かんじゃ (kanja)" (RK) and "patient" (ET).

Results

The testing revealed the following results (the RK and ET) out of a maximum of 100 points: 1st test (RK 67, ET 64), 2nd test (RK 79, ET 76), 3rd test (RK 81, ET 72) and 4th test (RK 85, ET 77). The score of the 4th test significantly exceeded the tally of the 1st test for both RK and ET ($p < 0.05$, respectively, Kruskal-Wallis test). However, no significant difference was observed between students belonging to quasi-Kanji or non-Kanji regions.

Conclusion

Significant progress was observed in both RK and ET aspects of the acquisition of Japanese medical vocabulary by international students through the new Japanese medical education challenge undertaken by the authors of this paper.

THE BIG EFFECTS OF INTRODUCING THE MINI CLINICAL EVALUATION EXERCISE (MINI-CEX) ON THE PHYSIOTHERAPY PRECEPTORSHIP PROGRAMME IN NATIONAL UNIVERSITY HOSPITAL (NUH)

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Background and Aims

All junior physiotherapists undergo an inpatient physiotherapy preceptorship programme within the first year of their employment with NUH. 35% of senior physiotherapists surveyed in 2015 (n=17) rated the preceptorship programme as "unsatisfactory" (score 3 or less on a 1 to 9 Likert-type scale). Out of the 12 domains of interest surveyed, six domains were also rated "unsatisfactory".

Based on these results, the mini-CEX was introduced as a work-based assessment tool as part of the preceptorship program in 2016. A mini-CEX training for preceptors was concurrently introduced. This comprised of a three-hour training and calibration programme. The training included (1) introduction to the mini CEX and the domains assessed, (2) calibration of standards by using the mini-CEX to rate preceptees at varying levels of performance, based on a set of standardised videos, (3) interactive practice at feedback and action planning to recognise the paradigm focus on assessment for learning versus the traditional assessment of learning.

There were also changes to the overall preceptorship programme to support the introduction of the tool. This included (1) the development of a timeline for expected progression of clinical competencies and timelines for mini-CEX assessments, (2) revised clinical competency guidelines for each physiotherapy clinical discipline.

This study was conducted to investigate whether the use of Mini-CEX as a competency tool and training of preceptors improved satisfaction with the physiotherapy preceptorship programme, as rated by preceptors, compared to traditional preceptorship programme and competency assessments.

Methods

Preceptors who had undergone training for mini-CEX and completed at least three mini-CEX within past one year were invited to participate via convenience sampling. An anonymous, self-administered, quantitative survey was then administered over a 30-minute session during teaching hours.

Participants (n=21) rated 12 questions relating to the mini-CEX on a Likert-type scale of 1 to 9 (1 to 3 unsatisfactory, 4 to 6 satisfactory, 7 to 9 above expectations). Domains surveyed included: overall satisfaction with preceptorship programme, validity, reliability and comprehensiveness of assessment tool, ability to reflect clinical competency, ease of use, promotion of formative and summative assessments, adequate training of staff for assessment and facilitation of timely feedback, action plans and learning outcomes.

Results

None of the preceptors rated the programme "unsatisfactory" during the survey (score of 3 or less). There were also significantly higher satisfaction scores across all 12 domains. Results were statistically significant when analysed using the Mann-Whitney U test ($p<0.05$).

There were also improvements when the results were examined based on categorical ratings. All of the previous six domains rated "unsatisfactory" demonstrated improved ratings to "satisfactory". The areas include 1) comprehensiveness of assessment, 2) clear aims of competency assessment 3) assessments reflect learning outcomes 4) promotes learning through appropriate action planning 5) promotes preceptor development and 6) overall satisfaction with preceptor-ship programme. Therefore, all 12 domains were rated "satisfactory" post implementation of changes with the mini-CEX.

Conclusion

The introduction of the mini-CEX has significantly improved satisfaction with the physiotherapy preceptorship programme amongst preceptors in NUH.

ALTRUISTIC BEHAVIOUR SUSTAINABILITY AMONG MEDICAL STUDENTS OF THE DE LA SALLE MEDICAL AND HEALTH SCIENCES INSTITUTE (DLMHSI): AN EXPLANATORY SEQUENTIAL MIXED-METHOD STUDY

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Background and Aims

Altruism is perceived as an inherent aspect of physicians and medical professionals, and consequently, extends to medical students. Its manifestation can be seen in different organisations' direction to attain more humanistic and patient-centred approach. However, studies show inconsistencies on the level of altruistic behaviour among medical students while other authors suggest that it is declining in relation to the length of stay in the medical education. Thus, the study focused on the altruistic behaviour of medical students by exploring and identifying possible solutions on sustaining and enhancing altruistic behaviour.

Methods

An explanatory sequential mixed-method research design was utilised to attain the objectives of this study. Phase I (Quantitative component) measured the altruistic score and assessed the factors that affect the level of altruistic behaviour of medical students. Analytical Statistics through three-way between-subjects ANOVA was utilised with IBP SPSS to determine the relationship between the identified factors and the level of altruistic behaviour. Then, the data was integrated to Phase II (Qualitative component). The novel data, which is different from foreign studies, was incorporated in an interview schedule presented to the physician respondents. The in-depth interview focused on (1) the altruistic score, (2) the significant factors (3) and how these altruistic behaviours are similar and/or different throughout their practice and its application to medical students. Thematic analysis was used to find significant themes in the interview datasets that explored on the sustainability of altruistic behaviour in medical students.

Results

The altruistic score of the medical students were in the high tiers as 71.89% scored 46 to 55 while the rest, 36.66%, scored at least 56 and higher. Among the factors that were identified, (1) length of stay in the medical field and (2) educational attainment presented a positive relationship with the altruistic behaviour. It was found out that the level of altruistic behaviour is generally increasing from 1st year to 4th year. Additionally, as this data was explored in Phase II, the researchers were able to generate the proposed Dynamic Mechanism of Attaining Altruistic Behaviour Sustainability in Medicine Model. This model provides a holistic view on the dynamic mechanisms of altruism in the field of medicine which presents the general themes, (1) Compassion and (2) Fulfilment, and specific themes, (a) Sacrifice, (b) Motivation, (c) Role Models, (d) Opportunity and (e) Idea-based sharing as factors which contribute on how altruism can be sustained and enhanced in medicine.

Conclusion

It can be surmised that medical students possess a high possibility of presenting altruistic behaviour in their future medical practice. However, there should be concrete mechanism that will help in sustaining and enhancing the altruistic behaviour. Thus, this study will be beneficial to the medical field in terms of providing a working model that will guide medical students, professionals, and medical school administrators and faculty members in understanding altruism in the practice of medicine and in its practical application of attaining a more humanistic and patient-centred approach

FLAGGING REGISTRARS: A META-ANALYSIS AND META-SYNTHESIS OF FLAGGING AND EXAM PERFORMANCE IN GENERAL PRACTICE TRAINING

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Background and Aims

Arguably the most intuitive form of validity is predictive validity - whether a measure predicts important future outcomes. Flagging is an approach whereby learners perceived not to be meeting minimum expectations are identified and assistance mechanisms implemented. It has been proposed that a useful outcome to evaluate the effectiveness of flagging mechanisms is exam outcomes. As part of an Education Research Grant from the Royal Australian College of General Practitioners (RACGP), we aimed to produce an overview of flagging systems across General Practice (GP) training in Australia.

Methods

Meta-analytic techniques were utilised to pool data from Regional Training Organisations (RTOs) examining the relationship between flagging and RACGP exam performance across Australia. Qualitatively data was pooled from interviews and focus groups with registrars, supervisors and medical educators to better understand their flagging protocols. Participants exam performance and flagging data was collected for GP registrars who sat RACGP exams in 2018 from Australian General Practice RTOs. Interviews were conducted with key personnel involved in flagging procedures from RTOs, whilst focus groups were conducted with supervisors and medical educators. These results were triangulated to identify strengths of flagging systems.

Results

RTOs have diverse flagging systems, but each has been adapted to the local context. Meta-analyses identified that the relationship between flagging and exam performance varies. Stakeholders were concerned about at-risk registrars not being flagged and emphasised the importance of early flagging. A major theme that arose in the qualitative component of this stream, as well as in other streams, was the issue of 'failure to fail', that is, that registrars who should be flagged are not being flagged. The meta-analysis supported this; registrars flagged later in training were significantly more likely to fail exams. Various features of RTOs' flagging systems were identified and related to exam performance. In certain circumstances, flagging predicts exam failure, providing RTOs with an additional tool for early interventions. Additionally, potentially useful features of flagging systems, such as diagnostic processes and graded flags have been identified as predictors of better exam performance. Consistent with this notion of the timing of flagging being critical, participants in the qualitative component stressed the importance of early flagging.

Conclusion

The present study provides an overview of the important issues that exist with respect to flagging in the Australian General Practice training context. Flagging has been identified as a predictor of RACGP exam performance in registrars and a number of potential features of flagging models identified. Additionally, the importance of early flagging has been reinforced and strategies for de-stigmatising flagging amongst stakeholders identified. Collectively, these findings provide useful information for maximising registrar exam success and an overview of future directions for research to further improve registrars' exam success.

BEYOND CME - MOVING TOWARDS VALUE CREATION IN CPD

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Background and Aims

Continuing Medical Education (CME) historically focused on content experts delivering lectures with clinical content which were decontextualised and fragmented. The experts determined the lecture topics and not specifically tailored to the learners' needs. Continuing Professional Development (CPD), however, is individually focused, requiring the practitioners to reflect, assess their learning needs and develop learning cycles based upon their practice learning gaps.

As clinician lead for training, one of my responsibilities was to ensure adequate CPD amongst all staff (doctors, nurses and allied health) to affirm good clinical practice and better health outcomes. Promotion of interprofessional learning (IPL) during the department's CME with more opportunities for interaction and reflection in solving authentic clinical problems may be one way of facilitating CPD. This educational quality improvement initiative attempted to review the department's CME programme towards enhancing CPD.

Methods

A focus group was conducted with representatives of the various professional groups to share their perceptions of the CME programme in the department. A survey was designed with the focus group's findings and all departmental staff were invited to participate. Questions were asked about the relevance in promoting IPL and enhancing clinical practice. A second focus group was conducted to review the survey findings and suggested recommendations to improve the CME's effectiveness in enhancing CPD.

Results

From the first focus group, CME was described as a list of educational activities circulated by the departmental secretary and was designed mainly for doctors. IPL was not an expected outcome.

50 out of about 65 regular CME attendees participated in the survey. 60% were doctors, 28% allied health and 10% were nurses. 45% of the respondents felt that our CME was too focused on doctors' learning needs. 78% and 61% would prefer more contributions from allied health and nursing staff respectively. About 25% of staff attended CME to satisfy requirements for re-accreditation but 68% agreed that case discussions enhanced their effectiveness in patient care.

The second focus group suggested integrating quality improvement(QI) initiatives into the CME programme. Interprofessional participation was encouraged amongst QI personnel, nurses, pharmacists and doctors in improving documentation of side-effects of psychotropic medications. This resulted in a concerted effort to bring about greater improvement in performance. Side-effect documentation improved significantly in a subsequent audit and this gave impetus and enthusiasm for other clinical quality improvement projects to be discussed during CME.

Conclusion

Performance-improvement CME encompassed efforts to bring QI into CME initiatives. This had supported IPL and participation to effect change in clinical practice. Previous research on effectiveness of CME had demonstrated that CME had a positive impact on performance but not so evident on patient health outcomes. The engagement of appropriate CME evaluation strategies beyond attendance and participation satisfaction will yield more return on educational investment. With more investment in human and relational capital through IPL and collaboration, performance-improvement CME can facilitate CPD and be construed as a cornerstone for value creation of our healthcare system and not just knowledge creation.

EFFECTS OF INTRODUCING "CODE OF CONDUCT FOR CADAVERS" ON MEDICAL STUDENTS' ATTITUDES

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Background and Aims

Human cadaver specimen has long been an important resource for teaching anatomy to freshman medical students, and as their first exposure to the human body, it can be considered a precious educational opportunity to encourage them to treat the human body with dignity and foster their professional behaviours. Literature, art, and film have been commonly used to teach elements of professionalism, especially empathy and respect that requires an ability to imagine viewpoints of others. In this study, we assessed first-year medical students' attitude towards cadaver dissection before and after an educational intervention aimed to facilitate their adaption to participate in dissection room and familiarity with related codes of conduct.

Methods

A single group with pre-test and post-test design was conducted at the Tehran University of Medical Sciences. Students' attitude was assessed using a valid researcher-made questionnaire. Items were scored on a five-item Likert scale ranging from completely agree =5 to completely disagree=1. The educational programme included showing of a film about cadaver donation followed by a discussion of principles of professionalism in dissection room and ethical codes regarding cadaver dissection by a panel of experts. All first-year medical students (N=194) were included in this study and students had been previously exposed to cadavers before this study.

Results

Out of 194 students participating in the programme, 146 students were surveyed (response rate of 75.25%). Overall, 91.2% of students thought that the programme provided an opportunity to think and reflect principles of professional behaviours in dissection room and 93.8% believed that they would use the ethical points they learned in future. Comparison of the pre-test and post-test indicate that at the end of the event, students feel more mentally prepared to attend the dissection room and the number of the students who considered cadaver donation for medical education purposes ethical increased by 14.58% (p-value < 0.001). Our study also revealed that students' mean fear and nausea decreased after the programme while their enthusiasm and interest in dissection increased (p-value < 0.05). The chemical fume of the dissection room was considered as the main stress-inducing factor by students.

Conclusion

Giving adequate preparation towards cadaver dissection sessions helps medical students to better understand the principles of professional behaviours and using film to foster these behaviours, may help provide a proper opportunity for them to reflect on principles of ethics and professionalism regarding cadaver donation and dissection.

SHORT COMMUNICATIONS 23

Introducing Health Informatics into the Medical Curriculum: A Pilot Study
Kenneth Ban, Singapore

The Effectiveness of Team-Based Learning with Gamification for Teaching Basic Pathology to Medical Students
Zahara Mansoor, Sri Lanka

Comparative Study in the Results of Faculty Evaluation
Uzmee Mendsaikhan, Mongolia

The Impact of Using Mixed Methods Pedagogy in Hyperacute Stroke Management Nursing Workshop: Didactic and Simulation Workshop
Liqing Fu, Singapore

Assessing the Factors Influencing Electives in Undergraduate Medical Curriculum
Reza Hosseini Dolama, Iran

Nursing Students' Perception of Evaluation of Teaching in Measuring Teaching Effectiveness – A Qualitative Study
Sara Baladram, Singapore

INTRODUCING HEALTH INFORMATICS INTO THE MEDICAL CURRICULUM: A PILOT STUDY

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Background and Aims

The accelerated digitalisation of healthcare data enables new data-driven approaches based on the remarkable progress in the emerging fields of data science and machine learning. Digitalised healthcare data can be analysed computationally at scale to identify patterns that would otherwise be missed by conventional inspection, revealing new insights to improve healthcare outcomes.

Given this shift towards data-driven medicine, we were motivated to explore how medical students can be taught foundational knowledge in healthcare-focused data science to equip with basic skills in informatics and analytics. To do this, we piloted an introductory workshop aimed at preclinical students and evaluated their feedback on the content and perceived usefulness of the workshop.

Methods

We designed a 5-day workshop was designed to teach fundamentals of health informatics using a combination of didactic teaching and guided practicals using healthcare datasets. Briefly, students were taught principles organising, querying, cleaning, and visualising data, culminating in a mini-datathon that allowed students to use their newly-acquired skills to investigate a healthcare dataset. Students were asked to provide feedback on the content and perceived usefulness as well as suggestions for improvement.

Results

A total of 42 Phase I and II students attended the workshop and 79% (n=33) provided feedback. Of the 33 respondents, most (75%) said they had little or no prior knowledge of informatics prior to the workshop. Post-workshop surveys showed that 88% rated the learning content as excellent/good and 76% rated the perceived usefulness as excellent/good. In addition, the level of perceived knowledge of health informatics (basic/good) increased from 24% to 100%.

Conclusion

The pilot workshop provided valuable feedback about usefulness and feasibility of combining didactic teaching with embedded practicals and capstone datathon projects. This provides a starting foundation for the development of a longitudinal health informatics track that incorporates statistical learning as well as artificial intelligence and machine learning, preparing students for the era of data-driven medical practice and empowering them to be innovators by leveraging healthcare data to derive new insights to improve patient outcomes.

THE EFFECTIVENESS OF TEAM-BASED LEARNING WITH GAMIFICATION FOR TEACHING BASIC PATHOLOGY TO MEDICAL STUDENTS

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Background and Aims

Team-based learning (TBL) is relatively new teaching/learning approach in medical education. In addition to providing a platform for problem solving and application of knowledge, TBL, ensures pre-preparation by students, involvement and engagement of all students and teaching students to work in a team to arrive at a consensus decision. Gamification is defined as 'the use of game design elements in a non-game context'. Game designs are known to enhance the ability to learn new skills and improve the level of commitment and motivation of participants in the said activity. We have combined TBL with gamification for teaching/learning of general pathology to medical undergraduates. The aim of the study was to determine the effectiveness and students' perceptions of TBL with gamification in learning of general pathology by medical students.

Methods

197 medical students from a single batch were divided into sixteen teams comprising 12-13 students. TBL was introduced to seven practical sessions in general pathology spread over seven weeks. After completing the practical, the teams answered two sets of multiple choice questions based on the practical during each session. Some did an individual test (Part B) before a team test where the students discussed the questions together and gave a consensus team answer (Part A). Others did the tests vice versa (Part A before part B). During the total seven sessions each team had an equal opportunity to answer individually before and after the team discussion. Teams were allocated marks based on their team performance in Part A. Individual marks for Part B was calculated and analysed. The individual and team tests were marked out of 100. Students were informed that the overall winning teams after seven sessions would receive a prize for the first three places. Student perceptions regarding TBL with gamification were assessed using a self-administered questionnaire.

Results

During the seven practical sessions, students who answered the individual test (Part B) after the team discussion (range-53 to 70, mean 59.13) performed better than the students who answered it before (range- 47 to 63, mean 56.16). The difference was not statistically significant (p=0.184). The team marks ranged from 85 to 93, mean 89.18 whereas the individual marks of Part A ranged from 53 to 74, mean 66.03. There was a statistically significant difference between the team marks and the individual marks of Part A (t test- 4.758, p=0.0005).

After incorporating TBL into practical sessions, students ranked practical sessions as the most interesting activity (40.20%). On a scale ranked 0-10, the students rated the TBL activity as being enjoyable (8.6), providing an opportunity to ask questions (8.5), promoting team work (8.4), facilitating understanding through group discussion (8.1) and encouraging learning through competition (7.4).

Conclusion

Implementing TBL with gamification in pathology practical sessions was perceived positively by students showing a progressive development in the students' satisfaction rates. It has also improved students' short-term performance, although it was not statistically significant. There was a significant statistical difference between the team marks and individual marks indicating that students performed better in a group than individually.

COMPARATIVE STUDY IN THE RESULTS OF FACULTY EVALUATION

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Background and Aims

The activities of medical schools are designed to prepare good doctors, nurses and health professionals. Therefore, Mongolian National University of Medical Sciences has clearly defined the role of the Medical Teacher in the "GOLD BOOK", which is the main force for the medical teachers to carry out the activities of the Medical Teachers within the framework of 12 functions. The book defines the level of teacher's work in three areas: career, academic and professional activities.

The Law on Encouragement of Faculty Development refers that "performance of faculty" is the result of their self and independent evaluations within the scope of their job description. For this reason, every university faculty should be involved in the evaluation of the faculty's work and look for a solution to develop. It is necessary to study between the teacher's self-assessment and assessment of teacher's by the Faculty development board.

To perform comparative study in the results of faculty evaluation.

Methods

According to the plan, the Faculty development board assesses the intern lecturer' performance twice per year. The purpose of faculty evaluation is to give feedback and recommendation to the educator about their teaching and methodology. Faculty evaluation is done by several processes. First, teacher should assess themselves by the checklists approved by the board. The checklist demonstrates the minimum requirement of qualified teacher. Then, board will match the checklist of a teacher with their proof of evidences. Some evaluation will be same, some evaluation between self-assessment and assessment by the board will be different, meaning that some faculty will lose point, or some will gain points. Board is assigned by the order of university's president. A total of 156 young faculties were evaluated in 2017, 2018 and analysed 109 young faculties' materials of their self-evaluation.

Results

The members of the Faculty Development Board confirms the faculties self-evaluation by verifying the evidences.

In the study 43 evaluations from 2017, 66 evaluations from 2018 were included. Total of 24 checklist (22%) evaluation was same; there were no difference (difference is 0) between self-assessment and assessment by the board. It means that faculty assessed themselves correctly. There were positive difference in 4.6 percent of evaluations (n=5) meaning that assessment by the board were higher than self-assessment. 36.7 percent of evaluations (n=40) had negative 5 score difference and remaining 36.7 percent (n=40) had more than negative 6 score difference.

The members of the board listen faculty's thoughts and comments, advise them during the evaluation process.

As for faculties, they are interested in being assessed for more time-consuming tasks such as counselling students, developing curricula, participating in public affairs, and volunteering.

Conclusion

Faculty evaluation is aimed to meet the mission and objectives of the Mongolian National University of Medical Sciences and evaluate their faculty performance truly.

There are differences between 2 assessments because some teachers did not have enough evidence to prove their self-assessment or did not fully understand the assessment process. It is necessary to give guidelines to the faculties before the evaluation in order to avoid misunderstandings or differences in evaluation.

THE IMPACT OF USING MIXED METHODS PEDAGOGY IN HYPERACUTE STROKE MANAGEMENT NURSING WORKSHOP: DIDACTIC AND SIMULATION WORKSHOP

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Background and Aims

Early reperfusion treatment is key in hyper-acute stroke care and the presence of a stroke code nurse has been demonstrated to reduce intravenous thrombolysis door-to-needle time. Stroke code nurses in Singapore usually receive on-the-job training. A "Hyperacute Stroke Management Nursing workshop" curriculum was developed under Stroke Inter-Professional Education (STRIPE) programme to provide a structured training for nurses working in hyper-acute stroke centres who participate in stroke activation service.

With development of learners' knowledge and decision-making skills through didactic teaching and simulation training, we hypothesised that participants would increase their self-efficacy and knowledge after attending the nursing simulation workshop.

Methods

The hyper-acute stroke management nursing workshop was designed using Kolb Experiential learning cycle. Each participant was given pre-reading materials two weeks prior to the workshop. The nursing simulation workshop comprises of 2 didactic classes by inter-professional team followed by 4 case scenarios of simulation with specific learning objectives.

Participants were asked to rate their self-efficiency in managing emergency hyper-acute stroke situations, before and again after the workshop, by using 10-item psychometric scale (1= not at all true; 2= hardly true; 3= moderately true; 4= exactly: score ranging from 10-40). In addition, participants also completed 20 multiple-choice questions before and after the workshop to measure their knowledge.

Results

Of the 11 participants, 8 participants (72.7%) had prior experience participating in stroke activation ranging from 1 to 18 months. There was a significant improvement in nurses' self-efficacy, post workshop (mean=30, IQR=30-30) as compared to pre-workshop (median= 25, IQR=24-30). There was also a significant improvement in participants' knowledge, pre-workshop (median=15, IQR=10-17) and post-workshop (median=17, IQR=15-18). There was no correlation between level of knowledge and self-efficacy pre-workshop (rs= -.39, p=0.23) and post workshop (rs= -.11, p=0.75).

Conclusion

Hyper-acute stroke management nursing workshop enhances nurses' self-efficacy and knowledge in managing stroke patients during stroke activation. It is recommended for stroke code nurse to attend this workshop. Future studies may explore knowledge and self-efficacy at another interval time-point to review the retention of knowledge and improvement of self-efficacy.

ASSESSING THE FACTORS INFLUENCING ELECTIVES IN UNDERGRADUATE MEDICAL CURRICULUM

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Background and Aims

Considering the advancement of science and the impossibility of learning in all fields, the need for providing some electives, is undeniable. This study was designed to obtain and review the students' opinions about the elective course in the undergraduate medical curriculum at Tehran University of Medical Sciences.

Methods

In this study, medical students' perspectives on electives were investigated using a questionnaire. The questionnaire was designed based on the literature review and experts' and students' opinions. Six medical education experts validated the questionnaire considering the clarification and importance of each item. Also, face validity was assessed by reviewing the views of eight medical students regarding the comprehensibility and suitability of items. The reliability of the questionnaire was measured by examining the internal consistency by calculating the Cronbach's alpha (0.71).

Results

Totally 164 medical students (43% male and 57% female) participated in this study and filled the questionnaire. In general, based on students' views, the appropriate content for presentation in the elective course was 39% related to clinical sciences, 32% Para clinical, and 11% interdisciplinary and other subjects. Students believed that the best time to offer elective courses was in clerkship (49%) and then pathophysiology (25%). From the point of view of 49% of students, the most important reason for choosing the course is their interest in the subject. 30% of students consider the applicability of the subject in medicine as the reason, and 11% of them choose it to get familiar with the future specialty and the rest of students think about other reasons, such as the novelty of the content, etc.

Conclusion

The results show the viewpoints of medical students about the best time and content for elective courses in the undergraduate medical curriculum. A similar study in this field showed that students practically learned different contents in elective courses and skills obtained during this course meet the needs of their future profession. Interesting in the subject and applicability of the subject in medicine are the most common reason for choosing electives.

NURSING STUDENTS' PERCEPTION OF EVALUATION OF TEACHING IN MEASURING TEACHING EFFECTIVENESS - A QUALITATIVE STUDY

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Background and Aims

The aim of this research is to increase understanding of Student Evaluation of Teaching (SET) survey data in Alice Lee School of Nursing (ALCNS), located in Singapore, by exploring perceptions of undergraduate nursing students when undertaking SET surveys. This is because, despite a vast body of literature questioning its reliability and validity, SET surveys remain as the most important form of feedback globally. This is because, in many cases, they are often the only measure of assessing the quality of teaching in higher education. However, there is minimal qualitative research that explores student perceptions on SETs and factors considered when evaluating modules or teachers in SET surveys. Thus, this limits teachers and faculties from maximising collected SET survey data.

Methods

This is a descriptive qualitative study in which data was collected through individual face-to-face semi-structured interviews using an interview guide. Convenience sampling was used and 16 undergraduate nursing students in ALCNS were recruited. Alongside this, content analysis was conducted simultaneously with data collection.

Results

Four main categories: “Perceptions of SETs”, “Determinants of module rating”, “Indicators of high-quality teachers” and “Suggestions for SETs” emerged from the content analysis.

Conclusion

These findings allow faculty administrators and teachers to have an increased understanding of SET data. Future research is needed to update current SET surveys to reflect evaluation of courses with online components as ALCNS is increasing their e-learning content to keep up with student learning styles in the digital age.

Saturday 11 January 2020, 2.00pm

Aquarius 3, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 24

From Professional Silos to Interprofessional Education: A Pathway for Patient Safety
Keah How Poon, Singapore

E-Learning Wishlist from Medical Students
Cheuk Sin Bernice Cheung, Hong Kong S.A.R.

Artificial Intelligence in Healthcare: Role of Machine Learning Algorithms in Predicting Diseases and Implications for Educating Future Doctors
Mark Wong, United Kingdom

ICU Nurses' Attitude Towards Organ Donation and Their Knowledge on the Supporting Personnel Involved in the Donation
Shuan Yong Teo, Singapore

Gaming for Learning – Is it Still Useful for Medical Education?
Ying Xian Chua, Singapore

Process of Developing and Implementing Appropriately Integrated Clinical Cases in Pre-Clerkship Curriculum at Thai Nguyen University of Medicine and Pharmacy, Vietnam
Thai Nguyen Thi Thu, Vietnam

FROM PROFESSIONAL SILOS TO INTERPROFESSIONAL EDUCATION: A PATHWAY FOR PATIENT SAFETY

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Background and Aims

Quality and patient safety are imperative components that medical/nursing/pharmacy students must learn early in their training. The current system does not prepare the students for the future collaborative work that they have to undertake once they become doctors/nurses/pharmacists. The students undergo training to learn scientific knowledge but it does not expose them to the realities of practices on the ground to be a safe doctor/nurse/pharmacist. Simple patient safety techniques and tools can be introduced in their training to sow the seeds of basic concepts of safety in their minds and bring about behavioural changes early.

Interprofessional education (IPE) involves promoting interdisciplinary collaboration in order to provide optimal patient-centred care and reduce adverse events. The aim of the IPE is to instil importance of patient safety in medical/nursing/pharmacy students through collaborative and interactive teaching modules.

Methods

The IPE is split into basic and advanced level. Key techniques and tools are introduced during the training to sow the seeds of basic concepts of safety in their minds and bring about behavioural changes early. In addition, the advanced level includes concepts of systems reliability, effective communication & diagnostic errors.

The basic level, a 6-hour interactive workshop is conducted to train the students on important patient safety aspects. The teaching curriculum comprises basic concepts, safety practices, and tools. Safety techniques are taught using case scenarios, games, treasure hunts, Horror Room, an inpatient room created with errors in the patient care area.

Results

5 IPE (basic level) sessions per academic year were conducted since 2015. Attendees feedback on a Likert scale of 1 to 5 showed that 51% & 46% of the respondents have said that their patient safety knowledge had improved "tremendously"/"quite-a-lot" and 38% & 35% said that it improved quite a bit in AY16/17 and AY17/18 respectively. Most liked topics were communication, patient identification and handling of medications.

4 Patient Safety workshops (Advanced level) were conducted in a year since 2008. Analysis of the recent one-year data showed that a total of 139 junior staff (100 doctors, 38 nurses, 1 allied health) attended the workshop. Feedback on a Likert scale of 1 to 5 showed that 89% of the attendees found the workshop to be good/very good.

Conclusion

These well-designed IPE sessions have enabled imparting a better level of knowledge, skills and confidence with the ability to inculcate safer practices amongst junior doctors, nurses and pharmacists. Designing the IPE curriculum and executing these training sessions did not incur much cost as existing passionate patient safety advocates were roped in to conduct the sessions. Additional resources were not needed as available resources were used wisely and judiciously to run an interesting and informative sessions.

Implementation of IPE at student and later at junior workforce level has played an important role in reducing adverse events which resulted in significant potential cost savings through avoidance of adverse events. There was an improvement in hospital wide patient safety scores and in hospital wide self-reporting serious event trends.

E-LEARNING WISHLIST FROM MEDICAL STUDENTS

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Department of Surgery, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong S.A.R.

Background and Aims

With advances in technology, e-Learning is rapidly emerging in medical schools. Different eLearning materials have been produced by teachers with a diverse style in terms of media types, structures, content, interactivity and user friendliness. Students are often given an opportunity to give feedback about the materials after use to project developers individually. However, students have very limited opportunity and role in eLearning material development. Thus, a questionnaire was designed by medical students to evaluate the existing eLearning systems and to find out their opinions on what is good, what could be better and what they wished for.

Methods

A group of teachers from the Department of Surgery and students from both pre-clinical and clinical years (Year 3-6) formed a focus group and collected information from students on the courses what eLearning materials were available among different years of study in the clinical years. Important aspects to be evaluated were discussed within the focus group. A questionnaire containing 26 questions were produced including students' habits and reasons for using eLearning material; user-friendliness, relevance, usefulness in enhancing understanding of course content; which one they liked and why; as well as a wish list in terms of format and topics.

Results

The questionnaire was distributed to all final year medical students at their first briefing session of the year. Response rate was 60%. In general, they found the eLearning platforms user-friendly (varying from 52% to 93% depending on the platforms), and 88% felt it enhanced their understanding. Around 42% of students view the content when necessary, while 35% browse the content a few times a day. Most popular and frequently accessed contents were physical examination videos (88%) and self-assessment modules (73%) due to high clinical relevance and usefulness in consolidating knowledge. Reasons given for the less popular eLearning platforms were redundancy of content with lectures; out-of-date material; irrelevancy; difficulty in downloading and viewing.

Conclusion

Current medical students are generally in favour of eLearning as an adjunct to clinical teaching. Teachers should consider producing eLearning material with clear instructions and learning outcomes which are up-to-date and relevant for the students. A stable, user-friendly, interactive eLearning platform which can be accessed on different devices should be used to offer effective, efficient learning resources for students.

ARTIFICIAL INTELLIGENCE IN HEALTHCARE: ROLE OF MACHINE LEARNING ALGORITHMS IN PREDICTING DISEASES AND IMPLICATIONS FOR EDUCATING FUTURE DOCTORS

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Background and Aims

There is an increasing role of artificial intelligence (AI) in healthcare, which may affect how doctors should be trained in the future. Machine learning algorithms, in particular, may change how disease are diagnosed, treated and monitored. Thus, there is increasing need for doctors to better understand the roles, capabilities and limitations of machine learning algorithms in healthcare.

Objectives: To evaluate and better understand the capabilities of machine learning algorithms in predicting diseases, which may impact on future medical education.

Methods

We developed machine-learning algorithms to predict incident diabetic complications (diabetic retinopathy (DR), diabetic neuropathy (DN), and peripheral vascular disease (PVD)). Data was drawn from the publicly available MIMIK III database, which comprises patients admitted to critical care units in US hospitals between 2001 and 2012. Time series data was discretised via collapsing data across multiple admissions into a single count vector. SMOTE resampling was used to overcome class imbalances when training machine-learning algorithms. Each data set was split into training (75%) and testing (25%) datasets, before K-fold cross validation (k=5) was performed on the training dataset to optimise model hyperparameters. Model performance was evaluated via AUC, sensitivity and specificity scores on the testing dataset.

Results

A total 6 machine learning algorithms were chosen, comprising of Neural Networks, Logistic Regression, Support Vector Machines, Decision Trees, Random Forests and K-Nearest-Neighbors. Neural Networks, Logistic Regression and Support Vector Machines (linear Kernel) had the highest AUC scores across all three diabetic complications, with respective AUCs of 0.82, 0.78 and 0.79 for DR, 0.75, 0.73 and 0.73 for DN, and 0.73, 0.69 and 0.70 for PVD. KNN classifiers had the highest sensitivity (0.77, 0.8 and 0.77 for DR, DN and PVD respectively), but lowest specificity (0.56, 0.35 and 0.28). The predictive performance of machine learning algorithms across all metrics was highest for the models predicting incident diabetic retinopathy.

Conclusion

Machine learning algorithms predict incident diabetic complications with good accuracy (AUCs mostly above 0.75). This may provide the future foundation for a shift from “reactionary” to “predictive” care, via personalised, targeted disease-risk profiling for patients. Future doctors should be educated on the applications, interpretation, and limitations of AI and machine learning algorithms in order to best utilise these tools as powerful complements in clinical decision-making and resource allocation.

ICU NURSES’ ATTITUDE TOWARDS ORGAN DONATION AND THEIR KNOWLEDGE ON THE SUPPORTING PERSONNEL INVOLVED IN THE DONATION

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Background and Aims

A smooth organ donation process facilitates positive experience for donors’ family and the intensive care unit (ICU) team. Hence, supporting personnel such as the donor coordinator (DC), medical social worker (MSW), case manager (CM), and transplant coordinator (TC) are available. However, the utilisation of such resources depends on an ICU staff’s knowledge. ICU nurses play an important role in supporting the operation aspect of organ donation. As such, their attitudes toward organ donation and their knowledge on the supporting personnel could affect the perception and outcome of organ donation.

Methods

In this retrospective cross-sectional study, 67 ICU nurses from Singapore General Hospital completed a survey questionnaire which assessed demographic characteristics, knowledge on supporting personnel involved in organ donation, and attitudes toward organ donation. Data were analysed with SPSS V.25 using chi-square test.

Results

Participants were mainly female (82.1%), staff nurses (82.1%), with mean age 31.6± 8.70 years. Most were supportive of organ donation (94.0%) and willing to play more active role in donor screening and referral (82.1%). Considerable numbers (55.40%) were willing to attend course on organ donation. However, knowledge on the supporting personnel involved in organ donation is lacking (% unaware: 67.2% for CM; 58.2% for DC; 46.3% for TC; 34.3% for MSW). Of the 67 nurses, only 28 (41.8%) had their patients referred as organ donors. Poor knowledge on the supporting personnel correlates with nurses who have not had patients referred as organ donors.

Conclusion

Although ICU nurses have positive attitude towards organ donation, there is a shortfall in knowledge on the supporting personnel. This shortfall correlates with them not having patients referred as organ donors. Since ICU nurses play pivot role in the success of organ donation, there is a need for greater education effort to raise their knowledge on these supporting personnel.

GAMING FOR LEARNING - IS IT STILL USEFUL FOR MEDICAL EDUCATION?

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Background and Aims

Gamifying medical education can provide quality and cost-effective knowledge transfer that is flexible, engaging, enjoyable and allow interaction with trainers and students. Using a 'Instant Jeopardy Review Game' format, it provides learners a low stakes platform to consolidate previously acquired knowledge and identify gaps in an interactive way. Nevertheless, games are not considered the mainstream material in serious medical teaching. There is paucity of data on pedagogical perspectives and strategies, and students' perspective are not often sought on learning outcomes. An open-ended short survey was conducted to evaluate a group of year 3 medical students' satisfaction and perspective.

Methods

A post-centralised teaching survey was conducted on a group of year 3 medical students in Singapore. Part of the small-group centralised teaching consists of a 60 minutes jeopardy session 3 days after the start of their family medicine rotation across different public primary healthcare institutions. The jeopardy game was created using a freely available online software, testing students across themes including acute and chronic care, roles of allied health professionals and nursing services. After each question, a mini sharing was conducted by the facilitator to highlight important facts and correct misconceptions. A short survey was conducted to receive free responses and their perspectives on learning outcomes.

Results

Fourteen out of nineteen students completed the survey, with 100% of participants giving a positive feedback on the learning experience. Students mentioned it was useful in consolidating learning from the past days before the centralised teaching. Recurring themes of "fun", "useful" and "engaging" were identified. Students were observed to be engaged even when they were split into teams, with all members participating in group discussions while the game was being conducted.

Conclusion

There are various learning strategies for students. While it was once thought that a safe, low-stress environment will be ideal for learning, gamification can be considered as a reasonable supplementary tool to a traditional classroom teaching style and can be an alternative platform for tutor-student interaction. Though the students' feedback remained positive, more research is needed to identify effective knowledge retention, skills acquisition and pedagogical designs in gamification for teaching, across different educational levels in undergraduate medical studies.

PROCESS OF DEVELOPING AND IMPLEMENTING APPROPRIATELY INTEGRATED CLINICAL CASES IN PRE-CLERKSHIP CURRICULUM AT THAI NGUYEN UNIVERSITY OF MEDICINE AND PHARMACY, VIETNAM

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Background and Aims

Renovating integrated medical education based on the competence of professional practice medical universities in Vietnam is a priority task in medical training in the 21st century. Students' learning in situations close to reality is a right direction. Using clinical cases to teach foundational sciences from the first years will shorten the gap between pre-clinical and clinical learning. This is a reflective essay based on our experience of the process of developing and implementing appropriate integrated case scenarios in pre-clerkship years within a new integrated medical curriculum. We hope that the experiences we have gained in the process of innovating integrated pre-clinical training programmes will be shared with medical schools. Aims: We present an interpretation analysis of our own experience in the process of developing and implementing appropriately integrated case scenarios (case-based learning) in pre-clerkship years at Thai Nguyen University of Medicine and Pharmacy, Vietnam.

Methods

A research was conducted on lecturers who participated in the development and teaching of first-year programme. Lecturers' feedback in the process of developing integrated clinical cases in the pre-clinical curriculum was taken from on Likert scale. Assessed items: designing course framework, writing learning objectives, writing integrated clinical case scenarios and instructional materials, faculty collaboration, the effectiveness and challenges that lecturers had faced.

Results

The total of nine foundations courses in the first year with 36 clinical cases were developed and implemented for students in 2018-2019.

Training of lecturers on integrated programme development and writing of integrated clinical case scenarios was the first thing to be done. The establishment of lecturer teams for each course was very important and must always have clinical lecturers. Each session in-class discussions of integrated clinical cases were implemented by at least 2-3 lecturers (at least 1 clinicians). For each course, we had determined the number and teaching time of clinical cases, clinical hours, the number of subjects and lecturers involved in the developing and teaching, the integration and the level of complexity of clinical cases. For each clinical case developed, in order to gain a total consensus; four - six planning meetings were held (at least 10 hours) to build up scenarios, writing objectives, discussion questions for students, study guides for student, teaching plan.

Clinical cases were really meaningful in students' learning, engaging students to discuss and actively study, helping the students learn how to apply basic scientific concepts into clinical medicine; so students may ''link theory and practice". Lecturers have been desired to continue to be taught with clinical cases in pre-clerkship courses.

The challenges we were faced with were lecturers had change their thinking in teaching of integrated programme, how to gain high levels of agreement of members from many different departments, long time taken for development, and the level of meeting learning objectives of clinical cases in pre-clerkship curriculum.

Conclusion

Using clinical cases in pre-clerkship curriculum will help students to build competency in clinical reasoning, to connect and apply foundational medical knowledge in clinical practice, to encourage lifelong learning and the development of professional skills and competencies.

SHORT COMMUNICATIONS 25

The Effectiveness of Mobile Learning in Junior Medical Clerkship Training
Mei Kuen Florence Tang, Hong Kong S.A.R.

Optimising in-situ Simulation Learning Amongst Rotating Residents in an Emergency Department
Jing Jing Chan, Singapore

Promotion of Knowledge Transfer and Retention in Year 2 Medical Students Using an Online Training Exercise
Lucy Victoria Rosby, Singapore

Development and Evaluation of an Introductory Online Radiology Session for Master of Nursing Students
Ching Hui Sia, Singapore

The Effectiveness of Formative OSCE in Second Year Medical Student of University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam
Quoc Bao Le, Vietnam

Evaluating the Community-Based Medical Education Programme in a Rural District Hospital: The Students' Perspectives
Matthew Benedict, South Africa

THE EFFECTIVENESS OF MOBILE LEARNING IN JUNIOR MEDICAL CLERKSHIP TRAINING

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Background and Aims

Current medical doctor programme always integrates the concept of the mobile learning with flipped classroom in the pre-clinical teaching curriculum, where medical students receive exposure of basic knowledge before the didactic practicums. There are plenty of teaching tools in the learning of medical knowledge but lack a cognitive integration in critical connections to clinical signs and symptoms for differential diagnosis of the diseases.

Using chronic liver diseases as an example, the pilot study of the project aims to develop micro-modules related to bedside physical examination, and its clinical signs for training the ability to think critically, where junior medical clerkship acquire skills in the differential diagnosis as such logistic connection is no rules or textbook to define, quantity or teach.

Methods

Our team has built up an interactive mobile application to facilitate the development of critical thinking in clinical practice among clerkship training during the clinical study. The mobile learning platform with three micro-modules entitled mPACS (mobile Pass A+ in Clinical Studies) are comprised of Clinical Skills - Bedside Physical Examination, Virtual Practice of Clinical Skill - Bedside Physical Examination and OSCE Guide: Diagnosis of Chronic Liver Disease. The project outcome has been evaluated by anonymous survey and focus group study among participants.

Results

We invited 12 volunteers from the junior medical clerkship, i.e. Medical year 4 students to do the pilot study. They did flipped classroom room exercise and the pre-experience survey before accessing the micro-modules of mPACS; the key question that we wanted to draw was "What are your expectations in this pilot courseware? All of them had anxieties on their coming OSCE examination. They then studied the contents of the micro-modules and did the flipped classroom room exercise again with the face-to-face debriefing tutorial; also, they did the post-experience survey. About 87.5% of the students are strongly agreed that they like to have the mPACS eLearning tools. From the overall experience survey, the score of the feedback from the 5-point Likert scales was 4.85 which fell between the categories of 4 (Agree) and 5 (Strongly Agree). From focus group interview, they all concurred that the mPACS can fulfil their expectations.

Conclusion

According to the data analysis, the mPACS is the innovative and interactive courseware that can engage students learning experience via mobile devices in combination of traditional face-to-face delivery learning, reinforce their cognitive connections in foundational knowledge and clinical skills through case scenarios studies exercise for differential diagnosis of the diseases for experiential learning; and deepen the clinical skill by on-line formative assessment by personalised instruction study approach in the sophistication of professional knowledge. More importantly, the mPACS may help to relief the preparation of objective structural clinical examinations (OSCEs).

The perspective of the mobile learning is a good paradigm shift for the junior clerkship to acquire the experiential learning for the preparation of the OSCEs. Also, it is helpful in preparing them in the transition period on clinical clerkship training and reinforce the commitment to professional principles on health care teams.

OPTIMISING IN-SITU SIMULATION LEARNING AMONGST ROTATING RESIDENTS IN AN EMERGENCY DEPARTMENT

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Background and Aims

In-situ simulation (ISS) improves the context of learning for residents rotating through the Emergency Department (ED). However where the learners have diverse backgrounds, simulation sessions conducted without establishing a common ground severely limits learning. In this study, we examine the impact of pre-simulation session didactic lectures on residents' experiences and their performance in real life.

Methods

Residents were divided into two groups. The first attended nearly daily ISS sessions for about 6 months. The second group had similar sessions monthly but with at least an hour of didactic lectures prior to simulation. All sessions were conducted by Emergency Medicine senior residents or consultants, as well as senior nurses.

The residents were then surveyed according to Kirkpatrick's Model of Evaluation, and consultants asked to rate the residents' performance in resuscitation according to the Dreyfus model, at the end of each six month period.

Results

A total of 10 residents were surveyed in each group. There was an improvement in the learning and behaviour of residents in the second group, where at least 80% applied new competence in teamwork, knowledge, skills and communication, compared to 50-70% in the initial group. However, reactions of the learners in the latter group were reduced. Only 70% felt more confident in handling resuscitation scenarios after their sessions compared with 90% in the first group. 90% of the second group felt that the sessions helped them practise various scenarios with team members, compared with 100% in the first group. There was no improvement in the proportion of learners (80%) who felt that simulation helped improve their care of real patients.

For the first group, 5 consultants felt that the learners were at advanced beginners, 5 felt they were competent and 1 regarded them as proficient. For the second group, 3 felt the learners were advanced beginner, 4 rated them competent, and 2 felt they were proficient. Only 1 considered them as novices.

Conclusion

Didactic lectures before ISS sessions may improve learning and enable learners to perform better in real life.

PROMOTION OF KNOWLEDGE TRANSFER AND RETENTION IN YEAR 2 MEDICAL STUDENTS USING AN ONLINE TRAINING EXERCISE

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Background and Aims

It was recently shown that novice medical students could be trained to demonstrate the speed-to-diagnosis and diagnostic accuracy typical of System-1-type reasoning. However, the effectiveness of this training can only be fully evaluated when considering the extent to which knowledge transfer and long-term retention occur as a result, the former of which is known to be notoriously difficult to achieve. This study aimed to investigate whether knowledge learned during an online training exercise for chest X-ray diagnosis promoted either knowledge transfer or retention, or both.

Methods

Second year medical students were presented with, and trained to recognise the features of four chest X-ray conditions. Subsequently, they were shown the four trained-for cases again as well as different representations of the same conditions of varying difficulty and asked to provide a diagnosis, to test for near-transfer (four cases) and far-transfer (four cases) of knowledge. They were also shown four completely new conditions to diagnose. Two weeks later, they were asked to diagnose the 16 aforementioned cases again to assess for knowledge retention. Dependent variables were diagnostic accuracy and time-to-diagnosis.

Results

Thirty-six students volunteered. Trained-for cases were diagnosed most accurately and with most speed (mean score =3.75/4, mean time=4.95s). When assessing knowledge transfer, participants were able to diagnose near-transfer cases more accurately (mean score =2.08/4, mean time=15.77s) than far-transfer cases (mean score =1.31/4, mean time=18.80s), which showed similar results to those conditions previously unseen (mean score =0.72/4, mean time=19.46s). Retention tests showed a similar pattern but accuracy scores were lower overall.

Conclusion

This study demonstrates that it is possible to successfully promote knowledge transfer and retention in Year 2 medical students, using an online training exercise involving diagnosis of chest X-rays, and is one of the few studies to provide evidence of knowledge transfer in general.

DEVELOPMENT AND EVALUATION OF AN INTRODUCTORY ONLINE RADIOLOGY SESSION FOR MASTER OF NURSING STUDENTS

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Background and Aims

The teaching method for basic radiology reading for Master of Nursing students was delivered via a 4-hour didactic face-to-face lesson and was ineffective. We hypothesised that an online radiology session would be better in improving the knowledge, attitudes and confidence of Master of Nursing students in interpreting basic chest radiographs, abdominal radiographs and computed tomographic brain scans.

Methods

An interprofessional team consisting of nursing, medical and radiology staff developed an online curriculum based on the Biggs' model of constructive alignment. The course consisted of 3 components - A chest radiograph component, an abdominal radiograph component and a brain computed tomography component. The course was conducted over 4 weeks simultaneously across each of the 3 components. We collected quantitative and qualitative information of the participants' knowledge, attitudes and confidence using questionnaires that were modified from the previous study. The first week consisted a pre-test of 15 multiple-choice questions (MCQs) and 7 items of questionnaires. This was followed by a 2-week period of online learning. Online learning was delivered via a video consisting of a PowerPoint slide with voice narration as well as examples of chest radiographs. The last week consisted of a post-test of 15 MCQs and questionnaires as same as the pre-test. SPSS version 24.0 was used to analyse quantitative data and content analysis was used to analyse qualitative data.

Results

Fifty-seven participants were recruited, of which 45 students completed the survey (response rate 78.9%). The participants were at least 5 years post-graduation and varied in stages of training, with mean nursing experience of 11.4 years (Range: 5 to 24 years). They were predominantly female (77.2%). For the quantitative component, participants demonstrated an improvement in knowledge ($p<0.001$) and confidence scores (all $p<0.05$) of post-test compared to the pre-test. There was improved self-rated proficiency in reading and interpreting a film radiograph ($p<0.001$) but no difference in the way they perceive the important of radiological investigations vis-à-vis the physical examination ($p=0.16$) and routine laboratory testing ($p=0.16$). Qualitative analysis showed that participants appreciated that learning as it could be done at their own pace and being able to replay the lectures again. However, participants hoped for improved interaction with the tutor during learning and the use of real-life cases in the scenarios.

Conclusion

Use of an online radiology session for teaching of basic radiology interpretation shows promise over a traditional didactic method of teaching, but requires further refinement in terms of the use of case examples and participant interaction.

THE EFFECTIVENESS OF FORMATIVE OSCE IN SECOND YEAR MEDICAL STUDENT OF UNIVERSITY OF MEDICINE AND PHARMACY AT HO CHI MINH CITY, VIETNAM

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Background and Aims

University of Medicine and Pharmacy at Ho Chi Minh City in Vietnam is on progress of reform curriculum programme based on Health System Reforms Project of Vietnam Ministry of Health and its integral component is the Centre for Advanced Training in Clinical Simulation (ATCS). In a simulation-based medical education (SBME) environment, there are best practices of SBME to maximum educational benefit. Formative Objective Structured Clinical Examination (f-OSCE) is an important feature of powerful SBME used to enhance student's knowledge, skills and attitudes. Thus, this study was planned to assess educational effectiveness of f-OSCE in medical students.

Methods

408 second-year medical students (MS-2), school year 2018-2019 of reform curriculum programme received an individual f-OSCE and debriefing session on history taking and head-neck examination after they finished first summative OSCE of these skills. At the end of the school year, second summative OSCE scored for two exactly similar stations. Scores were recorded based on a 10-point scale and a mean score of two stations were calculated. The objective of this study was to determine the effectiveness of incorporating an individualised formative assessment into 2 medical skills session by comparing OSCE performance before and after the intervention.

Results

Mean score of the second summative OSCE of both skills was 8.54 ± 0.64, higher than mean score of the first one (7.98 ± 0.82), $p = 0.000 < 0.001$ (Wilcoxon Signed Ranks Test). The percentage of students receiving a mean score ≥ 8.0 increased from 54.9% to 80.2% after the intervention. Mean score of an individual station also increased: head-neck examination station from 7.54 ± 1.29 to 8.33 ± 0.98 ($p = 0.000 < 0.001$) and history taking station from 8.43 ± 0.97 to 8.76 ± 0.71 ($p = 0.000 < 0.001$). The mean elevated score of clinical examination was 0.79 ± 1.60, higher than the mean elevated score of history taking (0.33 ± 1.13), $p = 0.000 < 0.001$.

The initial results show that a single individual f-OSCE could improve students' clinical competence and marks. Especially, the quality of clinical skill training will be robustly elevated with deliberate practice by using standardised f-OSCEs. But there are some biases maybe influence to OSCE examiners' assessment scores, such as examination context, examinee characteristics, examinee-examiner interactions, and examiner characteristics. Moreover, the quality of debriefing during f-OSCE is also an important element that need to be improved to get better results.

Conclusion

A single individual f-OSCE benefited students in both their history taking and clinical examination. In the next years, we will continue to increase both quantity and quality of f-OSCE, not only for MS-2. Our future research should focus on wider implementation of f-OSCE and overcome obstacles.

EVALUATING THE COMMUNITY-BASED MEDICAL EDUCATION PROGRAMME IN A RURAL DISTRICT HOSPITAL: THE STUDENTS' PERSPECTIVES

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Background and Aims

The adoption of community-based medical education (CBME) into the undergraduate medical curriculum is in line with the SPICE model for medical curriculum proposed by Harden and colleagues. Students are the consumers of medical education and are, thus, the ideal evaluators of the efficacy of their own course and learning environment. To evaluate the quality of the CBME programme in Botshabelo District Hospital (BDH), this study investigated student's perceptions of their experience during their CBME training at BDH. In addition, suggestions on how to enrich students' experience during the CBME posting was obtained from the participants.

Methods

This research was designed as a qualitative (Ethnographic) study that used a questionnaire survey to qualitatively explore the perceptions of fourth-year undergraduate medical student at BDH.

Results

Of the 120 questionnaires distributed, 84 were returned, giving a response rate of 70.0%. When asked to indicate what they liked or disliked about their CBME training, "Good educators/staff" and the "Attitude of some doctors" were the themes that scored highly (25.1% and 19.4%) in the "likes" and "dislikes" category respectively. Some of the major challenges faced during the CBME training at BDH included; Exposure to new learning environment (14.2%); Clinical practice context (12.6%) and; Language barrier (7.2%). Participants stated that they gained knowledge of how to perform certain clinical procedures and acquired core clinical skills in the areas of formulating management and managing some medical emergencies during their training at BDH. Increasing the duration of training (25.6% coverage) was suggested as a major way to enrich students" experience during the training at BDH.

Conclusion

Findings from this study reveal that CBME is a valuable pedagogical tool to enhance learning in undergraduate medical education and that more work is required to improve the quality of CBME training in BDH. We believe that the findings from this study will inform future planning of CBME training programmes in BDH.

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Yueh Jia Lee, Singapore

ROLE OF LEARNING CENTER OPERATORS AT ASO IIZUKA HOSPITAL

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Background and Aims

Simulation plays an important role in developing clinical skills for practicing medical workers which are then passed on to the community. In Japan, Simulation Center Operators (SCO) occupy to same role as that of the Simulation Specialist (SS) in the US. The roles of SCOs are varied since they are required to respond to demands according to their practicing environment. Nevertheless, there have been no reports defining these roles.

Despite being a community hospital, Aso Iizuka Hospital (AIH) had been carrying out simulation training within each department since the late 90's. However, financial restrictions meant that each department had a limited number of simulators and equipment. Educators had to borrow devices from other departments for each simulation session and their reservation and transfer was a burden for them. Moreover, multifunctional simulators and equipment have become more advanced and there is a necessity for someone who can manage and operate the devices to be present during sessions.

Methods

AIH decided to establish an on-campus Learning Centre in May 2016 and assigned staff including a clinical engineer as SCOs under the title of Learning Centre Operators (LCO) in May 2017. Two years have passed since the Learning Centre centralised the location and function of simulation training at AIH and gradually began integrating the devices owned by each department. Its current status and future prospects are herein reported.

Results

LCOs are responsible for suggestions and support of users, focusing on device use and education methods for each simulation. This includes layout suggestions to Educators according to device features and simulation progress, advice regarding simulation methods such as delivering facilitation without teaching and creation of explanatory materials, and the support of environmental maintenance to carry out aforementioned suggestions. In addition, LCOs gather statistics relating to usage of the Learning Centre. Comparing monthly average number of users for fiscal years 2017 and 2018, the monthly number of users increased from 235 to 392 due to the contribution of LCOs at AIH. There are still many things to consider, for example, how to make more effective use of devices, and how to create attractive environments for users. The support of LCOs enables more efficient and effective environment construction than would be possible with only an Educator. Since the simulation environment is more dependent on the LCO, the current situation at AIH provides a better environment for simulation. However, LCO created environments may spoil the Educator, and the presence of LCOs should not be allowed to affect the quality of the simulation.

Conclusion

For the next step, it is necessary to consider how to provide Educators more independence in the creation of simulation environments. LCOs must balance their suggestions and support for each Educator to provide a successful learning experience. It is important for Educators to begin to take on the role of SSs. LCOs should be involved in developing these skills in Educators, in addition to their current role.

TRAINEES' ENGAGEMENT DAY AT YISHUN HEALTH CAMPUS – AN INTER-PROFESSIONAL, INFORMATIVE AND INTERACTIVE SESSION

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Background and Aims

Trainees' Engagement Day (TED) was organised by the Graduate Medical Education (GME) Unit as an educational session to showcase the different aspects of Yishun Health Campus (YHC), by providing trainees' with a holistic introduction of the campus and its approach towards patient-centric care. The aim of this study is to analyse the usefulness of TED in assisting trainees to acclimatize and integrate better into the culture and systems of YHC through an inter-professional, informative and interactive session.

Methods

Quantitative and qualitative feedback from trainees were sought in hopes to enhance the effectiveness of the session. Data was collected and analysed from TEDs held between year 2017 and 2019. The questions were formulated with reference to feedback platforms such as KTPH Service Quality Component and GME Unit's End of Posting feedback, as factors to determine the usefulness of TED. Trainees were asked on the quality of contents displayed in enhancing their knowledge development and whether the event met their expectations. They were also asked to state areas done well, areas for improvement and if they would recommend similar engagement sessions to be organised in the future.

Results

More than hundred participants joined TED, to mark the commencement of the new academic year. On average, more than 50% of respondents would recommend TED to be organised on a yearly basis. 92% of respondents were satisfied with the content showcased by various booths in enhancing knowledge development and were helpful in supporting the learning of trainees. 96% of respondents felt that the event met their expectations.

Respondents feedback that areas done well were on the comprehensive coverage of content; the environment was suitable for engagement and interactive learning. They also commended on the food and games prepared. The area for improvement was to include research and professional development content pertaining to medical professions.

Conclusion

The importance of organising TED is to create an interactive and informative educational experience for trainees. Inter-professional booths that were set up provided opportunities for interdisciplinary interactions and rapport building; which are vital for good teamwork and in turn better patient outcomes. In conclusion, TED helped trainees to better assimilate into their working environment in YHC.

COMPARING STANDARD SETTING METHODS FOR MID-MODULE AND END-MODULE TESTS

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Background and Aims

University of Medicine and Pharmacy at Ho Chi Minh City has implemented its curriculum innovation, which is an integrated curriculum in system-based modules, particularly in second year we have 7 modules which have been taught since school year 2017-2018.

In each module, students have had 2 tests, mid- and end-module. We have had used a pre-fixed cut-off score of 50% without correction for guessing as the pass mark.

The Cohen method, and its modification have been previously described, which allow standard setting in low-stake exams, in which the pass mark is taken as a fixed percentage of the score obtained by best-performing students.

The main objective of this study is to compare how the Cohen and modified Cohen methods performed as well as other methods (pre-fixed cut-off 50%, 50% with correction for guessing, 60%, 60% with correction for guessing, mean minus one standard deviation), when applied to our second year exams, and to find out which method is better in our programme.

Methods

Mid- and end-module test results of each cohort (392 students of cohort 2017/18 - cohort 1 and 411 students of cohort 2018/19 - cohort 2) were used for the calculations independently: (i) correlation coefficients between mid-and end-module tests to assure their criterion validity; (ii)- (v) the failure rates, Kappa coefficients of pass/failure match from each pair tests (mid- and end-module), the "sensitivity" and "specificity" resulting from each method to compare different setting standard methods; (vi) cumulative distribution functions (CDFs) obtained from all tests to assess the validity of the reference points used to calculate pass marks.

Results

Correlation coefficients between 2 tests of each module ranged 0.579- 0.758 ($p<0.01$), these significant correlations support for predictive validity.

Failure rates had the least variation in the mean-SD method (12.5-17.9% in cohort 1 and 10.2-17.3% in cohort 2) then modified Cohen (1.8-16.1% and 1.5-13.4%); while the most variation in failure rates was pre-fixed 60% with correction for guessing.

The Kappa coefficient was largest in the pre-fixed 50% method (0.927 in cohort 1 and 0.954 in cohort 2), the second large coefficient was in the modified Cohen method (0.915 in both cohorts). The sensitivity was the highest in pre-fixed 50% method (0.965 in cohort 1 and 0.982 in cohort 2) and modified Cohen method (0.962 and 0.958), but the specificity of pre-fixed 50% was the smallest (0.39 in cohort 1 and 0.35 in cohort 2) while the specificity of modified Cohen method was better (0.4 and 0.53).

19 of 28 tests (68%) had the inflection point of CDFs between the 90th and 95th percentile.

Conclusion

The modified Cohen standard setting method is better than other methods (pre-fixed cut-off 50%, 50% with correction for guessing, 60%, 60% with correction for guessing, mean-SD, Cohen method) when considering the pass/failure match, failure rate, sensitivity and specificity altogether. The 90th percentile is the more appropriate reference point than the 95th percentile in our data. Since the predictive validity is not equal to 1, we acknowledge that comparing the pass marks of two tests would be only an approximation. Also, since the two tests cannot be considered as exact equivalent forms (i.e. [a] the difficulty levels and other item characteristics of the two tests are not identical, [b] the content that has to be assessed at the two tests is not identical and [c] the students' ability levels cannot be assumed to be the same at the two test administrations) the comparison of the standards (i.e. pass marks) of the mid- and end-module assessments may have its own limitations.

PERSONALITY TRAITS OF FIRST YEAR STUDENTS AND FINAL YEAR MEDICAL STUDENTS: ACTUAL DIFFERENCE OR PERCEIVED DIFFERENCE? A CROSS-SECTIONAL STUDY AT THE COLOMBO MEDICAL FACULTY

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Background and Aims

Personality is a widely researched aspect of human nature in relation to all aspects of life where medical education is not an exception. This cross-sectional study examined the personality traits of the first and final year medical students of the Colombo Medical Faculty. It further investigated if there are significant differences between female and male students and also, the perceptions of personality among the medical students.

Methods

We used the Eysenck Personality Questionnaire Revised- Short Form (EPQR-S), validated in Sri Lanka for data collection. The EPQR - S measures personality in four factors: Neuroticism, Extraversion, Psychoticism and Lie, using 48 statements with Yes/No responses. Neuroticism measures the emotional state, Extraversion measures the sociability factor, Psychoticism measures the nature of psychosis and the Lie scale measures the "faking good" tendency. Perceptions of personality among medical students were investigated using four small group discussions, consisting of four participants each: two discussions with first year students and two with final year students.

Results

97 (56.4%) first year students and 75 (43.6%) final year students participated in this study. The whole sample scored the highest in Extraversion and lowest in Psychoticism. There was no significant difference in the total personality scores between the first years and the final years or the male and the female students. However, there were significant differences for factors Neuroticism and Psychoticism. The female students of the first year and the whole sample scored significantly higher in Neuroticism. The male students of first year, final year and the whole sample scored significantly higher in Psychoticism.

The discussions revealed that all first year students expected a change in their personalities at the end of the course and final year students in general believed that personalities have changed over the five years. As first year medical students, their personal expectations are to have good problem-solving skills, able to work in groups and teams, have self-motivation and adhere to a dress code. Confidence, communication skills, leadership and teamwork skills, participation, professionalism, kindness, compassion, caring and empathy were some of the personal qualities to have been developed or expected to have been developed at the end of the course. The exposure to the clinical appointments and the academic structure were mentioned by the final year students as the main factor that contributes to this change. Behavioural Sciences Stream (BSS), exams stress, extra-curricular activities, role models, appreciation/ criticism and different cultures were other factors mentioned as contributors to change.

Conclusion

According to the statistical results of this study, though there are no significant differences in personality between the first year and final year students, there are significant differences in Neuroticism and Psychoticism between the male and female students. While the medical students expected and perceived a personality change to occur or have occurred, several changes and factors contributing to these changes were mentioned. We recommend further studies with larger samples from medical and non-medical populations to validate the results of this study. We also suggest longitudinal studies to explore its causes and effects of personal and professional life.

EXAMINING MICROSURGICAL SKILLS IN SIMULATED TRAINING PLATFORM VERSUS VASCULAR ANASTOMOSIS IN RAT VESSELS IN A LABORATORY SETTING

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Background and Aims

Residents must successfully acquire microsurgical skills via repeated practice in order to achieve vascular patency in patients. Lascar et al notes that residents undergo an abrupt learning curve prior to reaching a plateau in skill level, with no statistical difference in patency rate after residents perform a certain number of microsurgical anastomoses. Although a majority of residents is called upon to assist in procedures such as free flaps and microsurgical anastomosis, only a small percentage has the opportunity during their training to perform microsurgery as a primary surgeon. The need for practice is obvious, but trainees have limited resources that can effectively simulate vascular anastomosis. The aim is to establish a correlation between microsurgical suturing using our novel training platform and vascular anastomosis of rat vessels in a laboratory setting.

Methods

All participants of the five-day Microsurgery Training Course in NUH from 2017 to 2018 (n=77) were included. On Days 3 to 5 the participants were asked to carry out a standardised microsurgical task using our novel training platform- to place 9 sutures in a prefabricated 4mm elastic strip under the microscope using Digital Surgicals MicroTrainer. A single non-blinded assessor assesses the skills of each participant, looking at skills involved in microsurgical suturing (such as control of needle and bite size). The maximum score is 10; with it called the MicroTrainer Assessment Score. On Days 3 to 5, participants were also asked to prepare and anastomose 4 rat femoral vessels (2 arteries and 2 veins) each day. Likewise, the same assessor examines the skills used in the preparation and suturing of vessels. The maximum score is 20; this is called Vessel Assessment Score. Patency of the vessels was recorded, with patency being defined as having blood flow after 10 min following the completion of anastomosis.

Results

There is a strong positive correlation between MicroTrainer Assessment Scores and Vessel Assessment Score throughout the course ($r= 0.471$ $p=0.00$ on Day 3; $r= 0.580$ $p=0.00$ on Day 4 and $r= 0.560$ $p=0.00$ on Day 5). Likewise, there is positive correlation between the vessel patency rate and MicroTrainer Assessment Scores ($r= 0.463$ $p =0.00$ on Day 3; $r= 0.384$, $p = 0.001$ on Day 4 and $r = 0.441$, $p=0.00$ on Day 5), as well as between vessel patency rate and Vessel Assessment Score ($r= 0.541$, $p = 0.00$ on Day 3; $r = 0.556$, $p= 0.00$ on Day 4 and $r = 0.765$, $p= 0.00$ on Day 5)

Conclusion

The strong correlation between vessel patency and both the assessment scores validate the efficacy of the scoring system in predicting patency rate. The positive correlation between the assessment scores for MicroTrainer and vessels demonstrates that individuals who perform well on the MicroTrainer also excel with vessel anastomosis. This demonstrates that the nature and complexity of the tasks for both the MicroTrainer and vessel anastomoses are similar, with the same skill sets required for both. In other words, the MicroTrainer can be an effective training platform for trainees keen to hone their microsurgical skills.

EFFECTIVE PHARMACOKINETIC-PHARMACODYNAMIC (PKPD) VISUALISERS TO GUIDE FUTURE CLINICIANS' VALUES IN HANDS-ON PRACTICES

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Background and Aims

Due to rapid development of information technology and popularisation of technology, self-exploratory learning (SL) can improve learning outcomes in medical students. In order to facilitate SL, explicit visualisation of conceptual knowledge is required to capture the knowledge. The visualised knowledge helps enhance high-level thinking of SL learners. This has become more crucial in medical studies nowadays because the students will rely more SL, given limited curriculum timing. However, there lies challenges to guide future clinicians about pharmacokinetics and pharmacodynamics (PKPDs) because PKPDs are not easily visualised. Therefore, we need a platform allowing students to visualise the PKPDs directly so they can better experience it and appreciate the importance of PKPDs in real practices. The PKPD Visualisers are platforms allowing the students to view the change of PKPDs due to inter-individual variabilities. The study aims to seek how effective the visualisers have helped students visualise the various processes determining drug responses, their understanding of inter-individual variability among population and students' responses towards this SL.

Methods

We conducted two 3-hour-classes using the interactive graphs, followed by a survey filled in by the students, who are 21 postgraduates from Faculty of Nursing in NUS, as of April 2018. The platform accommodates various PKPD models, calculate PK variables, evaluate changes in PK parameters and their impact on drug exposure, and produce concentration-time graphs in linear and logarithmic scales. A normal population that displays a range of pharmacokinetic responses to a model drug in various clinical situations is developed. The students can switch between 'population' and 'single patient' to visualise the inter-individual variability. The students can interact and practice to gain proficiency in making observations and solving real problems in designed clinical scenarios.
https://www.pharmacologytutorials.com
https://www.pkvisualizer.com/

Results

90% of the respondents can understand and follow the videos easily. 95% of the students agreed that the videos contributed to their understanding of PKPDs principles. They felt positive towards the videos, with more than 90% of them motivated to watch more videos. For the PKPD graphs and visualisers, all students found the graphs were useful and helped them understand the PKPD principles. The students also agreed that the graphs are a helpful tool to learn about PKPD principles and understand the importance of inter-individual variability among population. They appreciate the values the website bring to them and they would like to see more of these graphs.

Conclusion

The above results show that the pilot batch of nursing students were very positive and supportive of the PKVisualizer tutorials. They found that the graphs and videos are very useful to learn and visualise the fundamental pharmacokinetics and population inter-individual variability. This study suggests that the PKPD interactive websites teaching can potentially fill the gap to allow the students to mimic the hands-on learning to guide the future clinicians' values in their future hands-on practices. We can further evaluate whether students could better integrate pharmacokinetic concepts into practice and learn to make rational decisions about drug therapy through the platform compared to others who are not exposed to the platform.

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Learning and Skill Transfer Using an Ex-Vivo Learning Tool for Microsurgical Skill Training: Time to Task is a Useful Assessment Metric
Alphonsus KS Chong, Singapore

WHAT ARE THEY SAYING? EXPERIENCE USING OF SIMULATED PATIENTS IN FACULTY OF MEDICINE SWADAYA GUNUNG JATI UNIVERSITY

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Background and Aims

Learning by using the simulated patients (SP) provides benefits to students, including being able to help students learn clinical skills such as anamnesis to physical examination. The main role of the SP is acting as a patient and giving constructive feedback to students. SP must be continuously evaluated to provide an overview of how the role of SP in supporting the learning process of students' clinical skills. This study aims to assess the role of SP in learning clinical skills in Faculty of Medicine Swadaya Gunung Jati University.

Methods

This study was a cross sectional study, conducted by survey. The survey was conducted on medical students (n: 218) and instructors (n: 27). The questionnaire for students and instructors was adapted from the Maastricht Assessment of Simulated Patient (MaSP) in the form of Likert Scale questions (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree).

Results

The survey results show that students and instructors consider SP to look like real patients, they can answer questions naturally without seeing the scenario and they can demonstrate their physical complaints like the real patient. Acting training for SP still needs to be done, so that SP can maintain their role consistently. Students and instructors also argue that feedback from SP is needed, especially regarding the role of students as a doctor. Students and instructors also argued that special training for SP was needed to provide constructive feedback.

Conclusion

The main role of SP in acting and providing feedback when clinical skills training is good enough. This is in accordance with the statements of Neufeld and Norman, that good SP is difficult to distinguish from the actual patient. The provision of feedback to students is an integral part of teaching with SP. Acting training is still needed to provide constructive feedback for SP to better support the clinical skills learning process. A trained SP can provide immediate feedback to the medical students after the encounter. Through his acting skills and ability to provide feedback, SP have an important role as a teacher in the student learning process, especially in developing clinical skills.

MENTEES' PERSPECTIVES ON THE MENTOR-MENTEE RELATIONSHIP IN A MEDICAL SCHOOL

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Background and Aims

Purpose. This study was conducted to answer the question on how mentees establish their relationship with their mentor in a medical school. Despite numerous studies on mentoring, the uniqueness of mentees' perspective needs to be documented in this institution.

Study Design. This study utilised the philosophy of Descriptive Phenomenology by Edmund Husserl and the methods that were explicated from this approach as described by Thomas Groenewald.

Methods

Eight level four medical students, with equal gender distribution, had semi-structured interviews. They were chosen using purposive sampling as these level 4 medical students had at least 3 years of experienced mentoring with their professor. The participants were interviewed using a set of questions which answered how the mentees established their relationship with their mentor in the four years they were mentees. The research assistant recorded the interviews while the main investigator transcribed and analysed using inductive technique and thematic analysis. The principal investigator, research assistant and her thesis adviser conducted a separate thematic analysis of the transcripts. Afterwards, the team discussed the differences and similarities of thematic coding, then came up with a unified coding for all the interviewed transcripts. During the course of transcription and analysis the investigator and her adviser discovered that the mentees' experiences with their mentor could be described in themes of phases following a temporal sequence of events.

Results

The results showed that mentees viewed mentoring as: having a guide both personal and academic, being given emotional encouragement, being helped in the psychological aspect, developing the personality aspects and having a guide in their career path. During the course of the interviews the authors discovered that these mentees' experiences in establishing their relationship with their mentors occurred in phases described by mentees as: period of uncertainty, warming up, deepening the relationship and catharsis versus that of premature closure. These documented findings showed that six of the eight participants of the institution's mentoring programme were satisfied with their established relationship, one was dissatisfied and the other one had a premature closure of future relationship with the mentor, hence, failing to establish relationship with the mentor.

Conclusion

The study concludes that most of the participants were satisfied with the relationship. These findings were consistent with their described lived experiences on established relationship with their mentors. These findings are suggestive that the programme was able to comply with its formed objectives.

SIMPLE QUESTIONNAIRES AND CURRICULUM DEVELOPMENT

Arunnart M

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Background and Aims

In the surgical course for the 4th year medical students in our medical school, we used the original questionnaires that contained a large number of questions to evaluate the quality of the course. However, the original questionnaires had no detail in each lecture that was important data for curriculum development. The evaluation should be done after students applied knowledge in clinical practice or examination. In this study, we used simple questionnaires consisted of questions in detail about each lecture and the evaluation was done at the end of the course.

Methods

The students filled out both original and simple questionnaires at the end of the course. The original questionnaires had 18 questions with 5-point scales that asked about the teaching quality, teaching material, learning environment, and stress during learning. There were opened-end questions asked about the general suggestion of the course.

The simple questionnaires consisted of two questions for each lecture that were asked at the end of the course. The first question was "What do you think about this surgical lecture?" that had 4 choices consisted of 1.) This lecture was unnecessary or unfavourable, 2.) Some part of this lecture was overlapped with another lecture, 3.) This lecture needed to change the teaching method, 4.) This lecture was favourable. The second question was "Why did you choose that answer?" that was an opened-end question. This questionnaire did not include the evaluation of active learning methods such as bedside teaching and case-based discussion.

Results

In the original questionnaires, the average score of teaching quality was 3.92, the average score of teaching material was 3.81 and the average score of the learning environment was 3.72. Half of the students were very nervous during studying. Students complained about the unappropriated sequence of lectures and the teacher's criticism.

In the simple questionnaires, five of the totally 37 lectures had a median score lower than 4 indicated that the teaching method should be revised. In these lectures, two lectures had some parts overlapped to other lectures, one lecture could be brief within a shorter period, and two lectures could be taught more details and needed more case-based learning for better clinical practice application.

Conclusion

The effective course evaluation was an important role in curriculum development. The original questionnaires demonstrated an overview of teaching quality, teaching material, learning environment, and stress during learning. The simple questionnaires demonstrated the strengths and weaknesses of each lecture. Therefore, the results from both original and simple questionnaires could be used to improve the teaching quality and curriculum development.

IS PEYTON'S APPROACH MORE EFFECTIVE THAN HALSTED'S APPROACH? A STUDY ON TEACHING THE USE OF A VEIN VISUALISER

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Background and Aims

TenTaTorch is a transillumination device for vein visualisation. It can be used for procedures such as filler injections to prevent accidental vessel puncture, locating veins for vein grafting and general clinical uses such as venepuncture. We compared the efficacy of Halsted's approach and Peyton's Four-Step approach in teaching the use of the device.

Methods

We recruited:

1. 24 nurses from an adult general ward in National University Hospital (NUH) Singapore with a minimum of 1 year of venepuncture experience;
2. 24 pre-clinical students from Yong Loo Lin School of Medicine in National University of Singapore (NUS) with no prior venepuncture experience.

Subjects were randomised into two groups depending on the teaching technique employed:

1. Halsted's approach;
2. Peyton's Four-Step approach.

Outcome measures assessing vein visualisation and venepuncture include:

1. Procedural steps
2. Knowledge
3. Confidence

Results

Subjects taught using Peyton's approach (nurses: 92.3%; students: 89.6%) did not fulfil a significantly greater number of procedural steps than Halsted's approach (nurses: 94.0%; students: 83.5%) ($p > 0.05$). There was no significant improvement in knowledge scores between Peyton's (nurses: 0.0%; students: 30.9%) and Halsted's (nurses: 3.3%; students: 21.5%) approaches ($p > 0.05$). Confidence scores did not increase significantly for subjects that underwent Peyton's approach (nurses: 6.0%; students: 41.5%) compared to Halsted's approach (nurses: 14.7%; students: 42.2%) ($p > 0.05$).

Conclusion

Peyton's approach has not shown to be more effective in teaching the use of the device, compared to Halsted's approach. Lesson plan and ease of device usage contributes to overall effectiveness of training sessions.

LESSONS THE LIVING LEARNT FROM THE DEAD: JOURNEY OF ELECTIVE DISSECTIONS AT NATIONAL UNIVERSITY OF SINGAPORE - MEDICAL SCHOOL

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Background and Aims

Cadaveric Dissection has lost its place in medical schools around the world, and its relevance in anatomy teaching has been called to question. Medical Schools around the globe have seen its dissection courses discontinued in favour of avant-garde methods such as plastinated prosections, 3D printed anatomy models & Learning Anatomy using Virtual/Augmented Reality. However, in Singapore, a form of cadaveric dissection offered as an elective has been thriving since its introduction in 2016. Yong Loo Lin School of Medicine at the National University of Singapore, historically, has always had cadaveric dissection as part of its core anatomy curriculum since its inception. However, in 2003 due to the nationwide SARS epidemic and a declining number of body donors, it was, for the first time, forced to cease its dissection programme.

Methods

In 2010, the programme was conceptually revamped after drawing inspiration from the progressive ways of various "Silent Mentor" programmes that were emerging in medical schools around the region. After the incorporation of its own silent mentor programme, the school started to see a marked increase in its number of body donations, to a point wherein it was feasible to reopen its cadaveric dissection in the form of an elective programme offered to Year-1 MBBS students. The elective was specifically targeted at those who had just finished their first year of MBBS course, during which time; students would have completed the core syllabus of gross anatomy.

Results

Elective Cadaveric Dissection was offered to students for the first time in 2016, capturing an attendance of 12.7% of the Year-1 MBBS cohort. This increased to 29.3% in 2017, 58.1% in 2018 and finally 83.2% in 2019. Further comparison between the students' attendance in 2018 and 2019 showed an increase in the duration of time that the modal number of students participated in the programme, 1-2 days in 2018 vs 3-5 days in 2019. Due to the increase in participation since its introduction, the elective dissection programme was able to evolve to include a wider spectrum of activities. In 2016-2017, students dissected their silent mentors by regions (example Head & Neck, Trunk, and Limbs). However, starting from 2018, students were given a free hand during dissection, which lead to a greater degree of exploration in the dissection of the silent mentors. Suturing was introduced in 2018; and in 2019, the elective's curriculum expanded to include Surgical Anatomy Tutorials by Cardiac / Neuro & General Surgeons. Feedback collected at the end of the 2019 elective found that a vast majority of the students perceived the elective as a useful tool to augment their anatomy knowledge, appreciating the interconnectedness of various body systems, improving teamwork and manual dexterity, as well as building the foundations of their professional identity as future healthcare professionals.

Conclusion

Whilst there is much room for the evolution of the elective dissection module, it remains clear that even in its current iteration, it not only serves as a useful tool for anatomy teaching, but also for the development of professional values among medical students.

LEARNING AND SKILL TRANSFER USING AN EX-VIVO LEARNING TOOL FOR MICROSURGICAL SKILL TRAINING: TIME TO TASK IS A USEFUL ASSESSMENT METRIC

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Background and Aims

Surgical task simulators are useful for skills acquisition. For learner feedback and accurate assessment of learning, it is important to have assessment metrics that are objective and easily measured. Time to complete a task has been shown to improve with training in a variety of surgical skills training models. In this study, we used time to complete a task to assess learning of microsurgery and skill transfer from a simulated microsurgical repair task to an in vivo microvascular repair.

Methods

Novice microsurgery learners attending a formal 5-day microsurgery training course from 2017 to 2018 (n=77) were studied. On Days 1,3 and 4, the participants were tasked to place 9 sutures in a prefabricated 4mm synthetic strip under the microscope. The time taken to place all 9 sutures was recorded for each attempt. On Days 3,4,5, participants were also asked to prepare and anastomose 4 rat femoral vessels (2 arteries and 2 veins) each day under the microscope. Likewise, the time taken for each vessel anastomosis was also recorded.

Results

The participants were able to complete both the strip and vessel anastomosis at a faster pace by the end of the course. Participants were on average 6.8 minutes (p=0.0) faster on Day 5 compared to Day 1 for the synthetic strip, and 6.2 minutes (p=0.00) faster on Day 5 for their vessel anastomosis compared to their first attempt on Day 3 of the course. There was also a strong positive correlation between time taken for suturing on strips and vessel anastomosis throughout the course (r= 0.505, p=0.00 on Day 3; r =0.429, p=0.000 on day 4; r=5.49 p =0.00 on Day 5).

Conclusion

The synthetic suturing strip is part of a microsurgery training toolkit. The toolkit has an assessment tool which assesses the product of the task: suture placement, spacing, and alignment. That assessment tool requires a photograph of the sutured strip and a commercial online tool for use. Time to complete a task provides an objective and separate perspective of skill training. It is an assessment of the process: compositely assessing the efficiency and effectiveness of the participant's effort. The rate of improvement over the training days of both the training and actual tasks, and their correlation points the strong similarity between the tasks. Skills acquired from training on the simulated task parallels that of the actual task. Time to task completion is a useful metric in assessment of microsurgical task training. It is simple and objective to measure, does not require any specialised equipment, and can do easily measured during self-practice to facilitate feedback to the trainee.

Saturday 11 January 2020, 2.00pm

Gemini 1, Level 1, Resorts World Convention Centre

SHORT COMMUNICATIONS 28

A Road to Professionals – Lesson Learned from Academic Integrity Cases
Yayi Prabandari, Indonesia

The Learning Preferences of Generation Z Indian Dental Students and Course Design – A Mixed Analysis
Anbarasi K, India

Patient- Centred Medical Home - A Platform for Professional Identity Formation of Family Physicians in the Resident's Continuity Clinic
Ying Pin Toh, Singapore

Empower: A Pilot Near-Peer Leadership Development Programme for Internal Medicine Residents
Kennedy Ng, Singapore

Clinical Audit Training: An Essential Contraption in Dental Curriculum
Abhishek Parolia, Malaysia

I'm Stressed, But I Think I'm Okay: Help-Seeking Behaviour in Singaporean Medical Students
Reuven Cheng, Singapore

A ROAD TO PROFESSIONALS - LESSONS LEARNED FROM ACADEMIC INTEGRITY CASES

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Background and Aims

Professionalism is one of the Indonesian medical doctor competencies. The Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada (FM-PHN UGM) formed a professional behaviour team (PBT) to achieve the objective of medical education on professionalism. The PBT has developed professional behaviour curriculum and assessment in the undergraduate level as the first step to learn professionalism, including academic integrity. As a side of implementing professional education, the PBT also work for assisting and guiding students who violate the academic integrity. This paper aims 1) to describe types of academic integrity violation; 2) to review the academic integrity violations handling; and 3) to portray particular booster programme of professional behaviour in accelerating professionalism.

Methods

We used documentation of minutes' meetings and workshops to describe the academic integrity violations as well as the implementation of professional behaviour booster programme.

Results

The unprofessional behaviours that violate the academic integrity were cheating, did not fulfil the assignment requirement, changed the mark, submitting fake documents, and replacing person for students' selection. A few steps were carried out to handle students who violate the academic integrity. We applied light, moderate and heavy sanction. We collaborated with cancer foundation, disabled and blindness organisations to send the students for working with them as part of sanction or "punishment". The professional education curriculum consisted of expert lecture, module scenarios and skills laboratory sessions. Students were assessed by simple professional behaviour assessment by tutor in each small group discussion across blocks. We determined the final assessment on the particular criteria (excellent, good, sufficient, need a particular treatment) based on the fourth year of professional behaviour assessment. Students who did not fulfil the requirement have to participate in the particular booster programme that was carried out every semester during their clinical rotation scheme. The result of booster programmes showed that students were more sensitive toward professionalism in medical field.

Conclusion

This report reveals that academic integrity violation varied and needed to be handled case by case. Particular booster programme accelerated the acquisition of professionalism among students.

THE LEARNING PREFERENCES OF GENERATION Z INDIAN DENTAL STUDENTS AND COURSE DESIGN – A MIXED ANALYSIS

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Background and Aims

What our students want? And how we will achieve it? These questions demand the advanced understanding about the learners' preference. This study was aimed to find out whether comprehensive learner profile will be useful in revealing the students preferences.

Methods

We recruited Gen Z undergraduate dental students from the Medical and Dental colleges comprising 10 in each, in the academic year 2013-14. In-depth interviews and four focus group discussions were conducted to understand the intellectual, physical and emotional well-being of the learners and their role in educational outcomes. These were audio recorded. The data were transcribed manually and identified the recurring themes.

Based on the themes, we prepared a questionnaire comprising different parameters (n= 31). The questionnaire was distributed to all entry-level undergraduate students (2014-2019). The information was then subjected for frequency analysis using non-parametric tests (Kruskal-Wallis and Chi-square).

Results

Curricular aspects

Students preferred formal assessment in 2014-16 (76% and 48%), both formal and informal assessments in 2016-17 (41% and 39%) and informal assessments in 2017-19 (70% and 41%). Technology in the learning system was favoured in 2014-16 (76% and 55%) whereas the same was disfavoured in the consecutive years (71%, 70%, and 84%). Research activities was not preferred in 2014-15 (77%) but was preferred in the subsequent years. In all the years' hidden curriculum was preferred and hence incorporated in our schedule. Traditional classroom teaching was preferred in 2014-15 (64%), and collaborative learning in the consequent years. Face-to-face method was preferred in 2104-15 (83%) and 2016-18 (40% and 41%), blended learning in 2015-16 (90%) and flipped training in 2018-19 (79%).

Learning preferences

Students preferred illustrations in all the years; hence, we design and incorporate illustrations in our course materials. The usage of iPhone and apple gadgets was preferred for academic activities (2016-19; 63%, 64%, and 87%), hence we prepare our learning apps to suit for these gadgets.

Interpersonal skills

Students seldom preferred to share their problems with friends and teachers. Hence introduced student supportive groups and strengthened mentorship programme.

Personal attributes

Students did not prefer to work in a group (2016-19; 68% 82% and 68%) and hence we shifted to one-to-one lab/clinical training. They deal stress by keeping themselves away from people (49% in 2017-18), and engaging in social media (59% in 2018-19), hence introduced stress management programme. In the entire study population, 29% did not practice any physical exercise and hence sports period was introduced in the schedule. In the last two academic years, students preferred 5-6 hours for sleep (49% and 65%), hence introduced mind-body medicine as a value added programme.

Carrier choice

Majority of our students opted academics as a carrier choice in 2018-19 (98%). Hence, we incorporated "culminating projects" to enhance their teaching-learning activities.

Conclusion

The study results support the value of comprehensive learner profile in gathering student's preferences. Another inference is that student's preference to each parameter changes year after year and hence there is a necessity to redesign the course on yearly basis.

PATIENT- CENTERED MEDICAL HOME - A PLATFORM FOR PROFESSIONAL IDENTITY FORMATION OF FAMILY PHYSICIANS IN THE RESIDENT'S CONTINUITY CLINIC

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Background and Aims

Family medicine emphasises holistic person-centred care from cradle to grave covering primary prevention, disease management with a generalist's lens. Through the residency program, under the guidance of faculty preceptors, the residency continuity clinic (RCC) gives residents the opportunity to follow up their patients longitudinally to address holistically the needs of patients of every age group. Here residents are encouraged to understand their patient's concerns, context and to develop a person-centred approach to rendering care. The RCC is here framed as a patient-centred medical home (PCMH) where residents are placed in a multidisciplinary team directing the care of their patients to ensure their various physical, psycho-emotional and social needs are met. Through this platform, and consistent mentorship from their faculty preceptors, residents begin to develop their professional identity as a family physician.

Methods

Nil (case study)

Results

A case study is presented demonstrating how the RCC, as a PCMH provides a dynamic platform for residents to develop their professional identity as a family physician. PCMH principles include that each patient has a personal doctor who coordinates a multi-disciplinary team using a whole-person orientated approach to care. The RCC meets this criteria through facilitating longitudinal follow up of patients and their families by residents and in the sitting of a multi-disciplinary team, including team work with fellow residents, nursing colleagues, care managers, pharmacists and allied health teams. PCMH allows the coordination and integration of care, and residents are encouraged to follow up their RCC patients whom they refer to hospitals and also to encourage proper communication with hospitals and other community services through proper handover. Lastly PCMH requires ensuring quality, safety and effective health care economics and residents are groomed with skills to facilitate this through conducting quality improvement projects, small and large group discussions on health care systems processes and economics. Through close mentorship by their preceptor who is able to build rapport and a mentoring relationship with residents over time, their residents develop values and cultivate the attitudes for professional identity formation.

Conclusion

The RCC is central to primary care learning and key to professional identity formation to allow residents to be competent and to be able to render holistic person-centred care. Running a family practice requires practical skills on how to manage a consult effectively which includes effective assessment of the patient's ideas, concerns and expectations, communication and counselling, time management and coordination of care. The RCC facilitates the growth of the budding family physician through direct observation and feedback and through the mentorship faculty.

EMPOWER: A PILOT NEAR-PEER LEADERSHIP DEVELOPMENT PROGRAMME FOR INTERNAL MEDICINE RESIDENTS

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Background and Aims

Leadership is an essential skill that every doctor should possess. There is a lack of systematic leadership development in residency programs. To compound the problem, there is a lack of an agreed-on leadership framework. We implemented and evaluated a pilot leadership development programme for internal medicine (IM) residents at a Singapore Academic Medical Centre.

Methods

We designed a leadership curriculum based on the leadership framework of our institution and the National Health Service (NHS) for IM residents. IM residents are invited to be a part of this program if they are serving within the IM residency committee. The programme consisted of four 4-hour workshops spread across the year. The domains covered included setting and communicating a vision, supporting and motivating people, leading effective teams, implementing change and mentoring others. Each workshop employed blended learning including didactic lectures, case-based discussion and group work. Participants evaluated the workshops' impact and quality using pre-post workshop surveys.

Results

A total of 22 residents completed the surveys. Participants agreed that the course provided content and skills that helped them to be a better leader. There is a statistically significant increase in the participants' post-workshop confidence as compared to pre-workshop in the following leadership domains e.g. setting a vision, communicating a vision, identifying and supporting residents who are struggling, implementing change. Residents feedback that a module on emotional intelligence should be introduced.

Conclusion

A near-peer leadership development program supported by faculty members is useful to residents and feasible to implement. More work will be undertaken to refine the curriculum.

CLINICAL AUDIT TRAINING: AN ESSENTIAL CONTRAPTION IN DENTAL CURRICULUM

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Background and Aims

Clinical Audit is defined as a quality improvement process that seeks to improve patient care and outcomes through a systematic review of care against explicit criteria and the implementation of change. When done well, clinical audit has provided a way in which the quality of the care can be reviewed objectively, within an approach that is supportive and developmental.

To evaluate the effect of clinical audit training in dental curriculum on the root canal therapy (RCT) performed by dental undergraduates.

Methods

Clinical audit training was introduced in dental curriculum in the year 2012 and forth year dental undergraduates were trained to carry out the clinical audit. Planning for audit was started with classroom briefing on principles and methodologies of audit and success of RCT was determined as a topic for clinical auditing. Standard criteria to evaluate the record keeping adapted from the guidelines, technical quality of RCT according to its condensation, extension and presence of procedural mishap and RCT success based on clinical and radiographical findings was prepared. Inclusion and exclusion criteria was set, students were trained and calibrated until they achieved intra and inter examiner agreement ($k>0.80$). Thereafter, trained students collected and analysed the data to measure the performance. Strengths and gaps based on this data were identified and presented to the faculty members and other students of the dental school. Thereafter, to make improvements, views from the faculty members and students as stakeholders were taken into consideration and remedial multifaceted interventions focusing on training, standardisation, supervision and case allotment process were carried out. Thereafter, subsequent clinical audits were repeated up to year 2018 using the same methodology to sustain improvements. A total of 706 patient records and periapical radiographs of 740 root canal therapy were evaluated. These data were statistically analysed using the chi-square test ($p<0.05$).

Results

The overall acceptable compliance with record keeping was 44.1% (2012), 79.6% (2014), 94.6% (2015), 100% (2016), 93% (2017) and 100% (2018). The acceptable technical quality of RCT was 44.7% (2012), 48.6% (2014), 76.8% (2015), 69.9% (2016), 67.6% (2017) and 72.7% (2018). The clinical success, radiographic success and overall RCT success, were observed in 72.2%, 85.6% and 66.7%. of patients. There was a significant improvement in the compliance with record keeping and the technical quality of RCT from year 2012 to year 2018 ($p<0.05$) along with the RCT success improving from 50.1 % to 66.7 % ($p<0.05$).

Conclusion

Clinical audit training in dental curriculum plays a key role in improving the RCT performance by dental undergraduates.

I'M STRESSED, BUT I THINK I'M OKAY: HELP-SEEKING BEHAVIOUR IN SINGAPOREAN MEDICAL STUDENTS

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Background and Aims

Stress and Burnout are increasingly prevalent among medical students and doctors alike. Excessive amounts of Stress and Burnout has deleterious effects on their own physical and mental health, as well as the safety of their patients.

Objective: To determine the Stress among, Coping Mechanisms of, and Barriers to seeking help of medical students from Yong Loo Lin School of Medicine.

Methods

Design: Cross-sectional study over a 2-week recruitment period involving a 1-off survey. The survey included tools such as the Perceived Stress Scale (PSS), and the Self-Rated Stress Scale (SSS). It also included barriers adapted from the Barriers to Access to Care Evaluation (BACE).

Setting and Participants: Single-centre study on students from all 5 years of study from National University of Singapore, Yong Loo Lin School of Medicine. Recruitment on a voluntary basis.

Exposure: Implementation of a one-time survey.

Main Outcomes and Measures: Perceived Stress Scale Scores and Self-Rated Stress Scores. Coping mechanisms, Avenues of help, and Barriers to seeking help, collected via the survey.

Results

423 out of 1497 participants were recruited, 232 participants are female and the remaining 191 are male. Participants were aged between 19 to 26 years of age during the recruitment. 290 participants experience moderate stress (68.6%), 69 participants experience high stress (16.3%), while the remaining 64 participants have low stress (15.1%).

The 3 highest reported barriers are 'Lack of time', 'Fear of unwanted interventions', and 'Cost of therapies'. Sleeping (57.4%), Exercise (55.3%), and Eating (47.3%), were found to be the most common coping mechanisms. We notice that the frequency of Exercise as a coping mechanism falls from pre-clinical years to clinical years (64.7% to 50%).

Conclusion

Majority of medical students experience moderate stress. The lack of time remains the greatest barrier to seeking help for pre-clinical and clinical students. Interventions available to help students should be made more accessible by time and location. Students are more likely to use Eating and less likely to use Exercise as coping mechanisms as they age and move on to clinical years. More research should look into Binge-eating behaviours.

SHORT COMMUNICATIONS 29

Simulation-Based Inter-Professional Operating Room Education (SPORE)
Ling Te Terry Pan, Singapore

Do Gamified Virtual Laboratory Simulations Lead to an Increase in Student Knowledge and Intrinsic Motivation to Learn in an Introductory Biology Course?
Heng Wai Yuen, Singapore

Application of Medial Simulation in Training of Nerve Agent Poisoning Management – An Initial Works With iStan System
Quang Ha Van, Vietnam

Transition to Active Learning for the Basic Sciences in a Large Transnational Medical Student Cohort
Michelle Leech, Malaysia

Clinical Reasoning - Results of Teaching it in the Preclinical Year of Medical School
Valencia Long, Singapore

SIMULATION-BASED INTER-PROFESSIONAL OPERATING ROOM EDUCATION (SPORE)

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Background and Aims

The operating theatre is a highly specialised, potentially stressful and unpredictable healthcare delivery environment, which demands highly skilled and trained staff to be working in unison. This can be intimidating for both new and experienced staff alike, especially when faced with a crisis situation. There is, hence, a distinct need for supported team training among all staff working in the operating theatre. Simulation has emerged as a possible training medium for operating theatre staff. In August 2018, we put together a pilot simulation training workshop to address this particular training need. It is the aim of the pilot workshop to provide authentic training and promote a safe and collaborative working culture among operating theatre staff.

Methods

Faculty from Anaesthesia, (Colorectal) Surgery and Operating Theatre Nursing came together to plan and design a half day simulation-based training workshop, specifically for operating theatre staff, at the Centre for Healthcare Simulation (CHS), NUS. The workshop scenarios were based on real life cases to provide as authentic a training as possible. Crew Resource Management (CRM) principles were used as basis for team training, with specific emphasis on leadership, role clarification, communication, situation awareness and mutual support. Each scenario ran about 30mins, followed by half an hour of faculty-facilitated debriefing, using a phased-domain debriefing model. Feedback was collected from the participants at the end of the workshop.

Results

In total, 2 anaesthesia (1 senior and 1 junior resident), 3 surgical residents and 8 nurses (2 anaesthetic nurses and 6 circulating/scrub nurses) took part in the pilot training workshop. Each of them took an active role in either or both of the scenario. All participants felt the simulation-based team training session helped identified gaps in knowledge and made concepts in Operating room inter-Professional education and crisis management clearer. The session also helped them appreciate the importance of prompt and appropriate interventions. Majority of the participants also felt more confident in managing a crisis in the operating room as a team. All felt the scenarios to be realistic and appropriate. Some participants felt that the training could be even more authentic with in-situ training in the operating theatre.

Conclusion

Simulation-based Inter-professional Operating Room Education (SPORE) can be a viable way to promote crisis team training for operating theatre staff and thereby, provide the basis for a safe and supported working culture and environment for such a specialised and demanding healthcare delivery setting. Special attention and appropriate resources need to be allocated to ensure authentic training which will benefit and promote quality operating room healthcare delivery.

DO GAMIFIED VIRTUAL LABORATORY SIMULATIONS LEAD TO AN INCREASE IN STUDENT KNOWLEDGE AND INTRINSIC MOTIVATION TO LEARN IN AN INTRODUCTORY BIOLOGY COURSE?

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Background and Aims

Laboratory (lab) sessions provide hands-on training of biological techniques, designed to reinforce and apply concepts learnt in the classroom. Due to the limited lab time, cost of conducting lab class and lab facilities, students have to work in groups and share research equipment and data. This can compromise the learning process. An alternative method of teaching is to simulate the real experience. Labster has developed a range of gamified virtual lab simulations for biology. The simulations consist of lab techniques, learning tools and 3D visualisations that are available in a simulated environment. Throughout each simulation, students will respond to questions to check if they have learnt the material. The primary aim of our study was to integrate simulations into our biology curriculum in order to provide an engaging and interactive way for our students to learn key biology concepts in a simulated environment. Our research question was, "Do gamified virtual lab simulations lead to a boost in a) knowledge of DNA-based technologies, and b) intrinsic motivation to learn biology at the undergraduate level?"

Methods

In line with SUTD's education mission, our students were divided into cohort classrooms (~45/class), where all the lessons are carried out in their freshmore year. The gamified simulations from Labster were part of the compulsory teaching curriculum and tested in one of the weeks of Term 1 10.006 "Natural World" module. We divided 10 cohorts of students randomly into 2 groups, control and simulations. For the classes' assigned simulations, 30 students tried the desktop (desktop-VR) and 15 students experienced immersive, VR simulations (immersive-VR) integrated into the lesson material. The classes assigned to the control group were taught using the traditional method (PowerPoint slides, chalk and talk). Students assigned to the immersive-VR accessed the simulations with VR Samsung Gear. The topic was DNA-based technologies (PCR and gel electrophoresis). We adopted the following two student learning outcome measures; 1. Pre- and post- quizzes (with 10 multiple-choice questions that help students develop conceptual understanding) were used to compare the differences in acquired knowledge of the topic between the controls and simulations. 2. Student feedback survey (5 MCQs) about gamified lab simulation experience was collected to assess its effects on students' intrinsic motivation and self-efficacy.

Results

Data collected showed that the desktop-VR group of students achieved the greatest percentage improvement (~33%) in quiz scores after the simulation as compared to controls and immersive-VR. This correlated with the significantly reduced response times taken for quizzes for the desktop-VR group. This can be attributed to the fact that the desktop-VR was a longer simulation, with in depth theoretical wikis and descriptions of relevant theory. Throughout each simulation, students respond to multiple-choice questions to check if they have learnt the material and are ready to continue on to the next task.

Conclusion

Survey gathered revealed that the majority of students perceived that the simulations improved their learning of DNA-based technologies, were motivated to complete the simulation and felt more confident at the end.

APPLICATION OF MEDIAL SIMULATION IN TRAINING OF NERVE AGENT POISONING MANAGEMENT – AN INITIAL WORKS WITH ISTAN SYSTEM

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Background and Aims

Application of medical simulation in medical teaching is the inevitable trend and way of many medical universities in the world and in Vietnam. It is even more essential for rare or dangerous situations such as nerve agent poisoning. This research was performed to programme the iStan medical simulation system with some poisoning situations and emergency measures of nerve agent neurotoxin poisoning and utilise to train practical training for medical students at Vietnam Military Medical University.

Methods

Scenarios building and emergency measures for sarin neurotoxicity in severe, moderate and mild levels were crested and programmed with the iStan system. Organise practical classes for 93 students who just completed the traditional teaching and learning method on animal (rabbit intoxication) then they expose with simulation teaching and learning with iStan system for the first time. After, the survey learners' feedback according to the questionnaire of 20 questions covering 4 areas including recognition of toxidome, technical aspects of the practical class, organisation aspects of the practical class and general perspective of students.

Results

The research has set up the different scenarios of sarin neurotoxin poisoning in the simulating patient such as: severe, moderate and mild poisoning.

The changes in vascular, blood pressure and respiration are shown more clearly and specifically in the simulation method, however, the signs of stimulation and convulsive are shown more clearly in the traditional teaching methods on experimental animals. The signs of the pupil and other manifestations have not any difference. The technical work of the simulation experiment was significantly higher than the traditional teaching method, with $p < 0.01$. The psychological pressure when doing traditional teaching is significantly higher than the simulation method, with $p < 0.05$. However, the ability to practice according to the group, redo the experiment, the time to prepare the experiment of the simulation method shows the advantages compared to the traditional method, with $p < 0.01$. Regarding with the overall assessment, the effect of simulation teaching methods is higher than that of traditional teaching methods, with $p < 0.01$. The student's favourite levels for the simulation method with an average score of 4.37 is higher than the 3.53 of the traditional method.

Conclusion

The initial works with iStan system showed that simulated patients provides better chances for medical students practicing and gained skill and attitude learning objectives than the traditional method with animal, typically in the situation of nerve agent poisoning management.

TRANSITION TO ACTIVE LEARNING FOR THE BASIC SCIENCES IN A LARGE TRANSNATIONAL MEDICAL STUDENT COHORT

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Background and Aims

In the context of a university-wide mandate to transform education delivery from lectures to an active learning approach, the preclinical Monash Medicine programme sought to understand the perceptions as well as impact of active learning in the preclinical medicine cohort in Australia and Malaysia. The high school environment, medicine entry process and cultural, country of origin of the two cohorts varies but the delivery of identical learning outcomes in two contexts with synchronous delivery of curriculum and assessment formed the basis to compare learner responses to active learning transformation.

Hypothesis

We hypothesised that medical students may be resistant to active learning approaches and this may vary as the course progressed and may vary in the different country contexts that the course is delivered.

Aims

To examine learner attitudes and outcomes associated with the change to active learning and to identify any differences related to context.

To examine educator attitudes to active learning delivery

Methods

Preclinical students (year 1 and 2) of the medical programme in Australia and Malaysia (N=800) and preclinical educators in both countries were included. Student attitudes to active learning were assessed using in country and cross-country surveys at the introduction of active learning and across the year. Student focus groups were conducted each semester for each year level (n=21 students per focus group) and via a whole of cohort survey across both year levels. Educator attitudes were captured using focus groups in Australia and Malaysia. Whole of cohort mean academic outcomes and numbers in each decile (final written exam performance) before and after active learning introduction were compared. Ethics approval for this study was obtained from the Monash University Human Research Ethics Committee MUHREC.

Results

The introduction of active learning was associated with a shift in cohort mean academic performance to the right (pre-change cohort mean grade 71.9 and post change 75.8) with increased numbers of students in each of the four higher deciles of performance and reduced numbers of students in each of the lower four deciles. This right shift of the academic performance curve was of a similar magnitude in both countries. Student attitudes to active learning were initially negative in both countries especially in the first clinical year but became more positive with increasing exposure to active learning and were more positive where declarative review of core concepts followed the active triggers. By late first year and second year attitudes to active learning were very positive with a preference expressed for active learning over lectures. Initially educators in Australia and Malaysia struggled with content and active delivery. Educator attitudes in both countries changed over time with a more positive attitude developing as experience with active learning increased.

Conclusion

Active learning was associated with a trend to improved academic outcomes in a large transnational medical student cohort. Attitudes to active learning improve over time and positive attitudes to active learning were related to scaffolding of sessions with declarative core content, carefully linked pre- and post-learning, as well as educator confidence.

CLINICAL REASONING - RESULTS OF TEACHING IT IN THE PRECLINICAL YEAR OF MEDICAL SCHOOL

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Background and Aims

A standard doctor-patient encounter requires the doctor to gather clinical information and reach a diagnosis. Clinical reasoning during and after the encounter, shapes both comprehensive, efficient, relevant information-gathering and accurately figuring out the likely clinical diagnosis. Making this diagnosis accurately in turn dictates rational decision-making that results in the expenditure of time, manpower, money and may place the patient at risk. Thus, reasoning is central to efficient encounters, patient outcomes and optimal resource utilisation in the healthcare setting

However, reasoning is itself not well understood, as evident in the literature. Furthermore, trainees are expected to see and eventually handle a wide variety of patients and problems, much of their training taking place through self-reflection.

Methods

An online course was created that teaches the principles fundamental to all types of medical problems, interlaced with principles of effective reasoning and self-study during the course of a trainee facing medical uncertainty. This 2-hour-long course was offered unselectively to a cohort of medical students who were about to commence their clinical training. These students then had the opportunity to clarify any questions they had in a face-to-face session with tutors familiar with the course.

A questionnaire to obtain insights into the participants' perspective regarding this approach to teaching, and gather feedback was then offered online.

Results

We recorded 92 responses, and a total of 19 questions were asked. The majority of respondents (80.4%) indicated that the concepts and steps introduced in the course were easy/very easy to understand, and 73.9% of respondents felt that their peers of equivalent training would find it equally easy to understand. seventy-one respondents (77.1%) remarked that it would take some to little effort to apply concepts in their training. Seventy respondents (76.0%) indicated that they would be willing to apply the course concepts in everyday practice. Common barriers to application of concepts were written in free-text included "lack of experience or confidence", fear of "jumping to conclusions too early" and being "too used to practicing in previously taught ways".

Conclusion

The outcomes of this online course are favourable, with the majority of participants recording responses that reflected its usefulness in real-time clinical practice, even as they are pre-clinical in training themselves. It would also be interesting to follow these students as they enter physician-ship to find out how this course has shaped their perspectives and self-teaching in the years to come.