Does the MRCS predict success at the FRCS?

J. Cleland[1], D. S. G. Scrimgeour[1,2,3], A. J. Lee[3], P. A. Brennan[4]

[1]Centre For Healthcare Education Research and Innovation and [2] Department of Colorectal Surgery, Aberdeen Royal Infirmary, Aberdeen [3] Department of Medical Statistics, University of Aberdeen, and [4]Intercollegiate Committee for Basic Surgical Examinations.

Introduction

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 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 the MRCS might have on the FRCS is unknown. We aimed to investigate whether MRCS and other variables are predictive of FRCS success.

Methodology

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 [S1 and S2]) between 2012 and 2018.

Results

First attempt pass rates for S1 and S" FRCS were 87% (n=854) and 92% (n=797) respectively. On logistic regression analysis, gender, Part B MRCS attempts and Part B score were all found to be independent predictors of S1 FRCS success. Predictors of S2 FRCS were age (<29 years at graduation), Part A score and S1 FRCS score.

	Odds ratio
Sex (M *versus* F)	2·32 (1·43, 3·76)
Mature medical graduate (age ≥ 29 years) (young *versus* mature)	3·22 (1·88, 5·51)
Attempts at Part B MRCS (1 *versus* ≥ 2 attempts)	1·77 (1·08, 3·00)
Part A MRCS score (percentage above pass mark)	1·14 (1·09, 1·89)
Part B MRCS score (percentage above pass mark)	1·06 (1·03, 1·09)
Model constant	0·10

2 Logistic regression analysis of pass at first attempt of Section 1 FRCS for 842 UK medical graduates

Conclusion

Part A and B MRCS performance were independent predictors of FRCS success. However, future research must explore the reasons between the attainment gaps observed for different groups of doctors, and examine the relationship between performance on the MRCS and the FRCS in overseas doctors taking these examinations.

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KK Women's and Children's Hospital
SingHealth

QUALITY IMPROVEMENT EDUCATION IN OBSTETRICS AND GYNAECOLOGY RESIDENCY IN SINGAPORE

Ang JXH, Mathur M
Division of Obstetrics and Gynaecology, KK Women's and Children's Hospital, Singapore

BACKGROUND

Healthcare Quality Improvement (QI)
- Increased attention in recent decades
- Essential component in medical education

Singapore postgraduate medical education
- Major transition in 2010
- British → American
- Basic/Advanced Specialist Training → Residency
- QI now mandatory in curriculum

We describe and evaluate QI education in Singhealth OBGYN Residency Programme.

METHODS

Residents undergo 6 month curriculum
- Online module
- Didactic lectures and workshops

Form small groups of 4-5 residents
- Gain hands on experience
- Conduct own QI project
- Supervised by faculty members trained in QI
- Present findings at Academic Clinical Programme QI Day for certification

Review of Resident QI projects done
Survey done to assessed perceived QI skills of residents that have exited

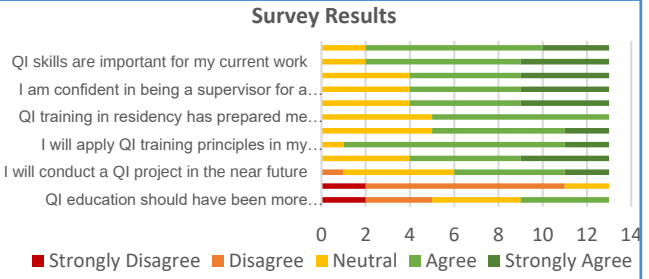
RESULTS - 1

From 2013 – 2017
- 57 residents completed 13 QI projects
- 6 poster presentations at Singapore Healthcare Management Conference
- 1 project (*) presented at National and International Conferences and received the National Team Excellence Gold Award from Singapore Productivity Association, published in an International Journal.

List of Completed QI Projects

1. Reduce Maternal-Fetal Medicine round Medical Officer preparation time
2. Antenatal handheld booklet clerking
3. Improving sexual history taking for gynaecological patients with vaginal discharge
4. Improving Pap smear screening
5. Reducing unnecessary antibiotic use in elective caesarean sections
6. Depression screening in postnatal women
7. Postnatal contraception counselling in ward
8. Antenatal magnesium sulphate use for fetal neuroprotection in preterm births*
9. Postnatal discharge planning in patients with pregnancy-induced hypertension and pre-eclampsia
10. Obstetrics clerking
11. Increasing the use of obstetrics electronic medical records in private clinics
12. Improving the efficiency in the subsidized operating theatres
13. Preoperative antibiotic prophylaxis

RESULTS - 2



- 18 residents have exited the programme
- 92.3% serving in the public sector
- 84.6% were interested in QI
- 61.2% felt that QI education was adequate and prepared them for their current work
- Most common barrier: lack of time and interest

CONCLUSION

- Combination of didactic lectures and hands on experiential learning is effective
- Integrating QI education is challenging but has been facilitated by dedicated time, institutional support and faculty supervision
- Recognising QI as legitimate scholarly activity and part of resident's training improves QI education delivery
- Continued change in culture and QI education will lead to a safer, high-quality environment for healthcare.

From faculty to peers: a student-centred approach to sustainable, well-rounded mental health support

Sophie Yau[1], **Anson Tong**[1], Beatrice Chiu[2], Winnie Chan[3]
[1,2,3] Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong

Background and Aims

- Student suicide rate **increased 76%** between 2012 and 2016.
- Currently, welfare events are held by faculty and students organisations, yet they lack effective collaboration.
- CUHK's SMART curriculum promotes 'Student-Centred' education, which encourages student involvement in education development, hence we believe **student-faculty collaborations** can tailor effective, approachable and sustainable student wellness events.

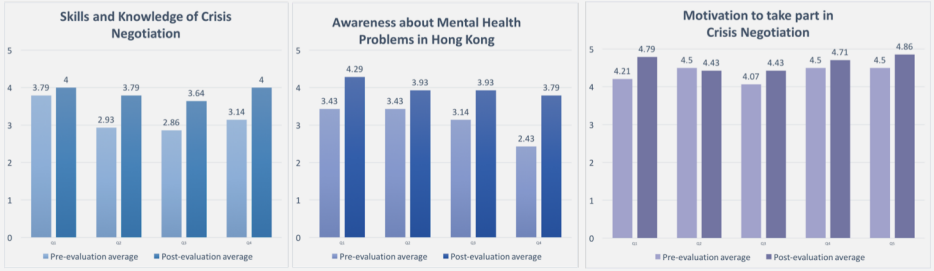
Methodology

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 that promotes support of medical students' wellbeing on 3 tiers.

- *Tier 1* - Students were given **direct support** by therapy dogs and Wellness Team counsellors at Dr Dogs' Days.
- *Tier 2* - 24 medical students were trained to become gatekeepers to **provide peer support** at a Crisis Negotiation Workshop.
- *Tier 3* – created 10 online, bite-sized videos addressing the mental health of medical professionals to **promote public support**.

Results

300+ medical students participated in 3 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. The online campaign videos accumulated a total of **10,000+ views** and **111 shares**.



Conclusion

Student-faculty collaboration effectively bridged CUHK Medical Faculty wellness services to students. **The 3-tiered design established a well-rounded medical student support system.** Sustainability was ensured as student gatekeepers can provide peer mental health support anytime, videos can be repeatedly reshared online to raise public awareness, and the project will be organised annually. Overall, 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

Mao-Meng Tiao[1,2], Liang-Shiou Ou[3], Ming-Ju Hsieh[3], Chi-Fa Hung[2]
[1]Department of Pediatrics, Psycology[2] Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan, [3] Chang Gung Medical Education Research Center, CGMERC, Taiwan

Introduction

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.

Methodology

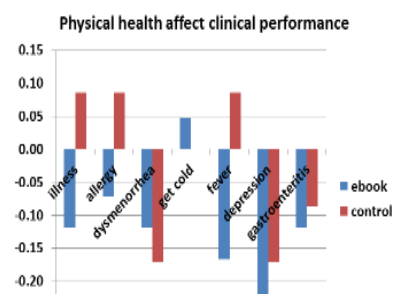
We undertook a qualitative and a questionnaire exploration of the issues around the underperformance in 7th year students at a single Taiwan Hospital institution. 65 student and 50 teachers were invited. 26 students and 21 teachers participated in focus group discussions. Data were analysed thematically. An e-book in 2nd year, with PAAR (probe, analyse, action, and resolve) from the method of TOTR, can be checked easily from smartphones, tablets and computers, was set.

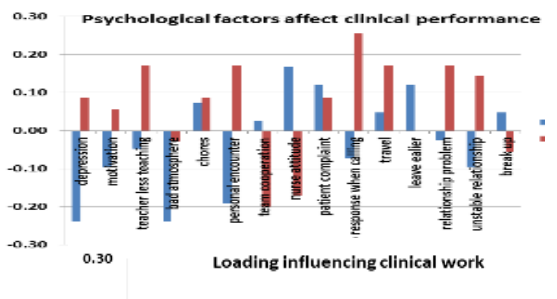
Results

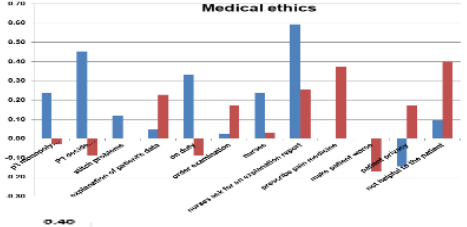
In the 2nd year, there was 42 students in e-book group, 35 students in control group. The students' management of their fever, sick, depression, motivation, emotion for clinical work improved significantly in e-book group than in the control. In terms of not enough sleep time, feel learning nothing, teachers' inadequacy and handling privacy for attending rate improved significantly in e-book group than control. Work loading and ethical issues did not improve in e-book group than control.

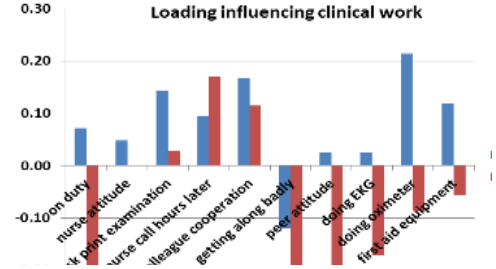
Conclusion

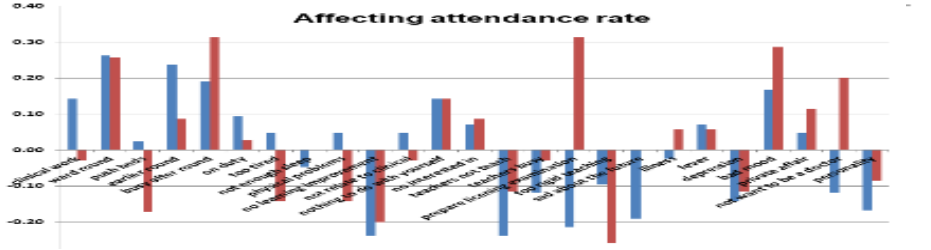
The reasons for underperformance in medical students included clinical work, attendance rate and their concerns about medical ethical issues, all of which might influence their performance. Students used the e-book for facing physical problems and emotional stress improved significantly. It did not help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











AN INITIATIVE TO REVAMP TRADITIONAL DIDACTIC ORIENTATION DURING CLINICAL POSTINGS

Ong Zhen Ming[1], Sazlina Bte Mohd Sazali[1]
1.Pre-Professional Education Office, Tan Tock Seng Hospital, Singapore

Introduction

Students posted to Tan Tock Seng Hospital (TTSH) must undergo a 60-90 minutes orientation programme prior to each clinical posting. It covers areas such as **code of conduct**, **infection control**, **hand hygiene** 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, mainly due to repeated content coverage. In order to ensure that students retain the knowledge covered in the orientation, TTSH PPEO revamped the orientation programme.

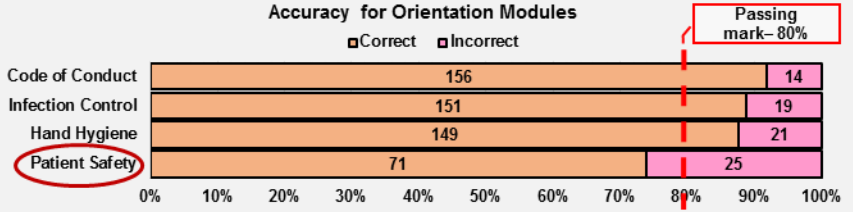
Methodology




PPEO introduced an online platform for students who have already attended at least one such briefing. 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

Modules	Code of Conduct		Infection Control		Hand Hygiene		Patient Safety	
Question	Compliance	Confident-iality	Disposal of biohazard waste	Needle stick injury	Correct usage of alcohol rubs	Bare below elbow compliance	International patient safety goals	Fall risk patients
Total No of Students	85	85	85	85	85	85	54	42
Accuracy	91.8%	91.8%	92.9%	84.7%	83.5%	91.8%	79.6%	66.7%



Conclusion

Results have shown that students answered questions on patient safety with the lowest accuracy rate. This initiative has allowed PPEO to improve the orientation program and focus on content delivery for topics needing reinforcements.

Teaching and Learning Methods for Clinical Reasoning in Undergraduate Medical Education: A Systematic Review

Hongyun Xu[1], Benson WG Ang[1], Jian Yi Soh[2,3], Gominda G Ponnamperuma[4]

[1]Yong Loo Lin School of Medicine, National University of Singapore [2]Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore [3]Khoo Teck Puat-National University Children's Medical Institute, National University Health System, Singapore [4]Centre for Medical Education, Yong Loo Lin School of Medicine, National University of Singapore

Introduction

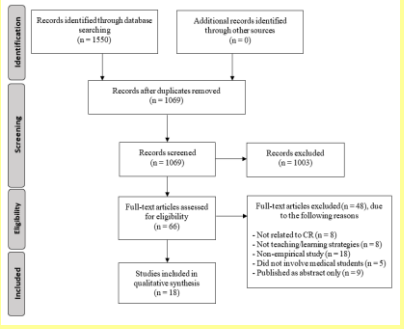
The development of formal instruction in clinical reasoning (CR) is challenging, as it is a complex process and difficult to simplify for teaching to junior medical trainees. In recent years, there have been numerous studies exploring different teaching and learning methods for improving CR in medical students. The objectives of this review are to:

1. Describe the teaching and learning methods for CR used in undergraduate medical education
2. Evaluate the impact of different teaching and learning methods by using New World Kirkpatrick model (KPM)

Methodology

Based on PRISMA guidelines, PubMed, Embase, Scopus and ERIC were searched using keywords related to clinical reasoning, medical students, teaching and learning strategies. Results were screened and evaluated for eligibility. Relevant data were then extracted from the studies that met the inclusion criteria (Figure 1).

Figure 1



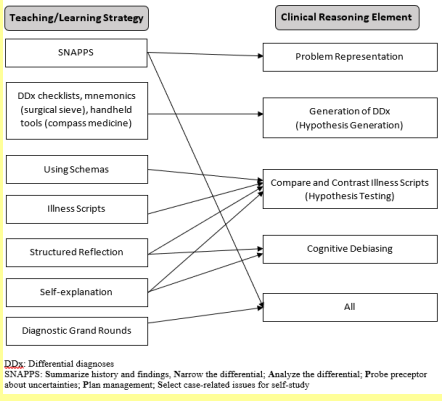
Results

- Sixty-six full text articles were first identified, of which 18 were included. There were 12 randomized controlled studies, of which five discussed structured reflection, four on self-explanation and three on prompts for generating differential diagnoses. There were four quasi-experimental studies and two within-subjects studies. Of these, two 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. Thirteen out of 18 studies reported improvement in clinical reasoning after the intervention.
- Seventeen studies were ranked Level 2 on KPM, while one was ranked only Level 1.

Conclusion

- Several methods are effective in improving CR in medical students.
- Different methods target different elements of the CR process (Figure 2).
- There is a lack of studies comparing the effectiveness of different methods.
- Most studies did not evaluate the transfer of learning to behavior in clinical environment (Level 2 KPM).
- There can be more comparative studies with standardized assessment and evaluation of long-term effectiveness.

Figure 2



A Meta-Analysis for Effective Clinical Teaching

Dr Pin-Hsiang Huang[1], Dr Matthew Haywood[1], Prof Anthony O'Sullivan[1], Prof Boaz Shulruf[1]
[1]Office of Medical Education, University of New South Wales, Australia

Medical Teacher (2019) 41:10, 1129-1142

Introduction

Many factors affect student learning outcomes, 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.

Methodology

The list of influences on educational achievement compiled by Hattie (2012) was utilised to inform a meta-analysis of Effect Sizes (ESs) associated with Teaching-Learning Factors (TLFs) in clinical education.

A literature search was conducted in PubMed to identify articles examining clinically relevant TLFs. Selection criteria were applied to identify learner-focused studies, with subsequent categorization by study design (pretest–posttest or controlled group). The Cohen's ES (d) for each TLF was extracted and a pooled ES determined.

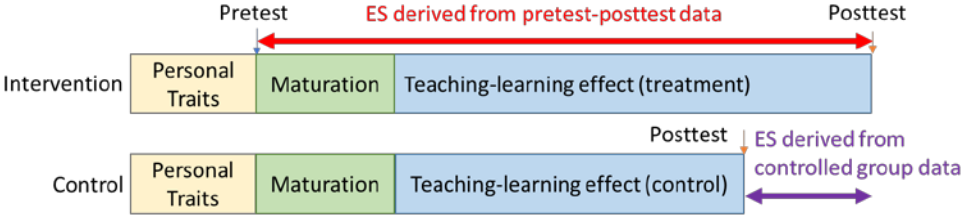


Figure 1. Difference between pretest-posttest and control group data

Hattie J. 2012. Visible learning for teachers: maximizing impact on learning. New York (NY): Routledge.

Results

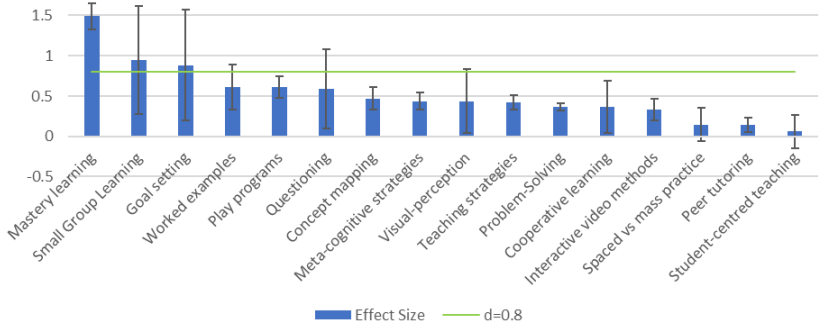


Figure 2. Effect size using control group data

Screening produced 132 articles suitable for analysis from 3454 studies. In general, ESs 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** TLFs possessed the largest effect sizes (d ≥ 0.8).

Conclusion

The most effective TLFs apply a **goal-based focused persistent training** with **student-centred approaches**. Setting proper difficulty levels and monitoring progress frequently may enhance teaching efficacy. The study provides a theoretical foundation for devising new measurement tools, and teachers may use this data to optimise teaching.

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

Chew Khim Thng
Department of Diagnostic Radiology, Khoo Teck Puat Hospital, Singapore

Introduction

Educators play a critical role in guiding students to convert their theoretical knowledge to clinical skills. Despite having to put in more time and efforts to enhance students' learning experience, educators are face with many challenges such as handling clinicals work load and teaching at the same time and feeling undervalued for not being appreciated for their endeavours. Based on rational choice theory to maximize their benefit, these factors may influence the behavior of the educators towards their students. Therefore, it is important to ensure that educators have the correct mentality and attitude for the teaching and coaching process.

Methodology

A semi-structured open-ended interview was performed on seven educators, appointed by Singapore Institute of Technology after undergoing their training to teach students. These educators had at least three years of experience in teaching students.

Data collected had high validity as pilot interviews was conducted to ensure no misleading questions. Data collected has reached its saturation leading to the same claim and was transcribe word by word from the narration of the participants.

The transcribed data was then analyze using thematic analysis.

Results

Educators were motivated to be educators and they benefited from the role. However, they faced challenges especially when the students were not communicating effective with them as they were unable to grasp the student understanding of the topic or mood if the students are not voicing or demonstrating their thoughts. Educators voiced that students having positive learning attitude, adequate competence and communication skills will make their teaching more pleasant.

Conclusion

This study explores the perspective of educators' experience. Educators had their reasons for wanting to teach as they had the desire to groom the next generation of radiographers which will also give them a sense of accomplishment. However, being an educator was surrounded with its benefit and challenges. Hence, students meeting educators' expectations will lead to an effective teaching and learning journey for educators and students.

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

Youhasan P[1], Chandratilake M[2]

[1]Department of Medical Education & Research, Eastern University, Sri Lanka, [2] Department of Medical Education, University of Kelaniya.

Introduction

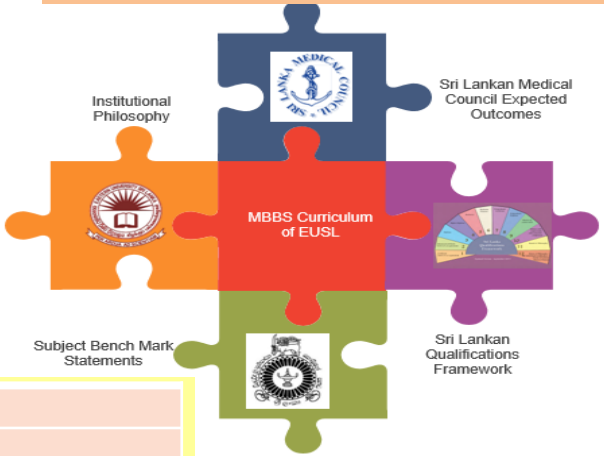
The adequacy of Public Health curriculum in undergraduate medical programme is greatly emphasized by shift of focus in healthcare from curative to preventive medicine.

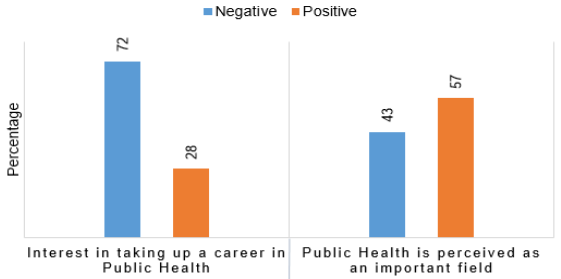
Thus, this study aimed to evaluate the adequacy of the Public Health component in medical curriculum at Eastern University, Sri Lanka (EUSL).

Methodology

Design	Descriptive study
Approach	Mixed Method
Quantitative	**Participants:** MBBS students (N=70), graduates (N=24) and two Public Health teachers. **Instrument:** Self-administered questionnaire **Data Analysis:** descriptive statistics, Chi-square test and qualitative analysis of open comments.
Qualitative	Document analysis of MBBS curriculum at EUSL.

Results





Variable	X2	Percentage	X2	Percentage
Gender	**11.78***	M=18.9% F=9.4%	0.58	M=22.3% F=35.1%
Current Status (Undergraduate /Graduate)	3.57	S=15.9% G=12.2%	**9.74***	S=36.9% G=20.3%

*= p<0.05, M=Male, F=Female, S=Student, G=Graduate

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.

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

Fung Fun Man[1,2], Lee Cheng Jie, Irene[3], Shan Koh Bundgaard[3], Poh Jing Yi[2,4], Robert Kamei[2,3]

[1]Department of Chemistry, National University of Singapore (NUS), Singapore ; [2]Institute for Application of Learning Science and Educational Technology (ALSET), NUS, Singapore, [3]Duke-NUS Medical School, Singapore, [4]Department of Economics, NUS, Singapore

Introduction

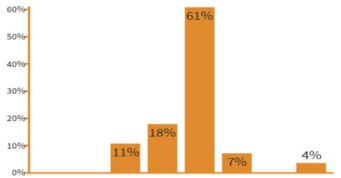
Learning to Learn Better (L2LB) is a course from NUS ALSET that taught learners to identify ineffective learning strategies by constantly reflecting on their existing learning strategies. In line with Skills Future Singapore, a national movement to motivate Singaporeans to develop their fullest potential by pursuing lifelong learning, we have recognized that adult learners may be hesitant or feel challenged when learning new skills. Through SingHealth Duke-NUS Education Conference 2019 workshop, we shared evidence-based methods with medical educators, in the hopes that they can help their learners in applying these learning strategies to learn better. This workshop discussed the learning sciences which support effective strategies critical for learning and teaching; and how various methods can be incorporated into their educational programme.

Methodology

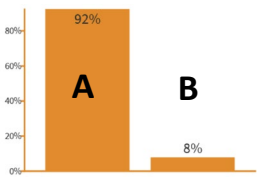
By incorporating hands-on and reflective exercises via TBL, each team consists of 6 members, with 3 members tagged ‘A’ and the other 3 tagged ‘B’. ‘A’ and ‘B’ underwent different treatment during the learning activities to illustrate that what works better for us may be counter-intuitive.

Results

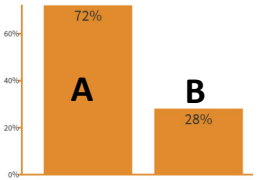
How many new animals were added in the video?



Who remembers the content more?



Who remembers the drawing better?



Conclusion

We conducted a workshop on evidence-based learning strategies for 28 healthcare professionals at the SingHealth Duke-NUS EduCon 2019. In their reflections, participants found usefulness in these strategies—retrieval practice and depth of processing. On reflection, the participants sought to incorporate retrieval practice into their own medical educational programme.

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(2) Karpicke, J. D., & Roediger, H. L. (2008). The critical importance of retrieval for learning. Science.

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Who are ready to collaborate? Differential students' readiness for interprofessional learning in the Philippines

Madonna G. Cervantes-Sudio[1], Fraide A. Ganotice, Jr[2], Jr., & Annalyn T. Navarro[1]

[1]*College of Allied Medical Professions*, Angeles University Foundation, Philippines,

[2]*Bau Institute of Health Sciences Education*, Faculty of Medicine, The University of Hong Kong, Hong Kong

Introduction

This study aimed to examine Filipino students' attitude towards collaboration to inform the IPE program in a university in the Philippines. This cross-sectional study was guided by the following objectives:

- Examine the extent of readiness of students from Medical Technology, Occupational Therapy, Pharmacy, Physical Therapy, and Radiologic Technology; and
- Determine if there are significant differences across **program, year level, and gender** in terms of: teamwork and collaboration, negative professional identity, positive professional identity, and roles and responsibilities.

Methodology

- **Participants: 423 Filipino students** in the prelicensure curriculum (*M* age = 18.8 years, *SD* = 1.18 years; 320 females (75.9%)) who were enrolled in allied healthcare programs in a private university in the Philippines.
- **Measures:** Readiness for Interprofessional Learning (McFadyen et al., 2006). It is a 19-item measure with the following subscales: teamwork and collaboration, negative professional identity, positive professional identity, and roles and responsibilities. Basic personal information such as age, year level, and gender.
- **Data Analysis:** Two-way Multivariate Analysis of Variance (MANOVA; 3 X 3) was used to test if there were significant mean differences among students from programs and year levels in each of the RIPLS subscales. Follow-up one-way analysis of variance (ANOVA) with Bonferroni post-hoc test was used. T-test was used to study gender differences.

Results

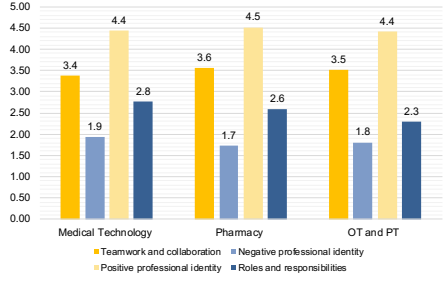


Figure 1. Mean scores of students by program

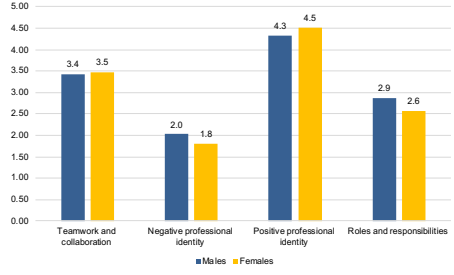


Figure 2. Mean scores of students by gender

There was a significant main effect of program [F (4, 418) = 4.36, p < 0.01). There were significant between-group differences in teamwork and collaboration [F(2, 419) = 7.85, p < 0.001], negative professional identity [F(2, 419) = 4.92, p < 0.01], and roles in responsibilities [F(2, 419) = 11.05, p < 0.001). There were significant program level differences across the competencies. There were significant between-year level differences across the three competencies. There were significant gender differences across the competencies except on teamwork and collaboration.

Conclusion

Using multivariate analysis of variance, we found differences across gender, program, and year level 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 favorable attitude towards interprofessional collaboration.

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

Yvonne Ng Peng Mei[1,2], Doris Fok[3], Emerald Chang Hsin-Fang[4]

[1]Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore
[2]Department of Neonatology, National University Hospital, Singapore [3]Department of Obstetrics and Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore [4]Department of Obstetrics and Gynaecology, National University Hospital, Singapore

Introduction

- The Baby-Friendly Hospital Initiative (BFHI) was launched by World Health Organization (WHO) and UNICEF in 1991 to enable maternity units to be centres of breastfeeding support
- The 20-hour BFHI course was conducted for nurses in the maternity and neonatal departments of National University Hospital to equip them with skills and knowledge to support breastfeeding
- Seventeen courses were attended by 232 nurses from Apr 2010 to Feb 2013
- We aimed to assess effectiveness of the training courses by comparing nurses' breastfeeding practices, knowledge and attitude before and after training

Methodology

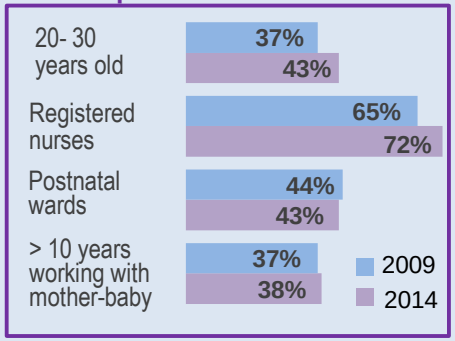
- Nurses completed cross-sectional, self-administered, anonymous surveys in Aug 2009 (pre- training) and in Aug 2014 (post-training)
- Data on respondents' demographics; practices, knowledge, attitude on breastfeeding were obtained
- Differences between the two groups were compared using Pearson chi-square tests (significant p-value of 0.05) using Stata 15.0

Conclusion

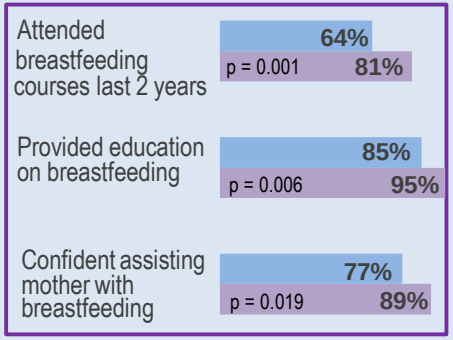
We achieved our aim to increase nurses knowledge and practices in supporting breastfeeding through BFHI training courses. We believe this has enabled NUH to achieve and sustain standards as a BFHI- designated hospital.

Results

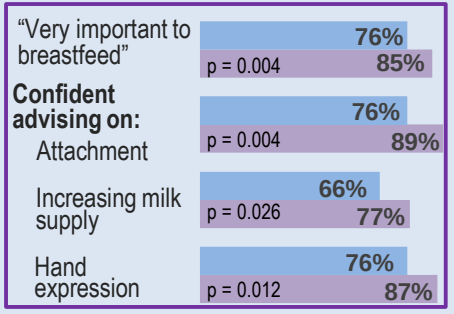
Respondent characteristics



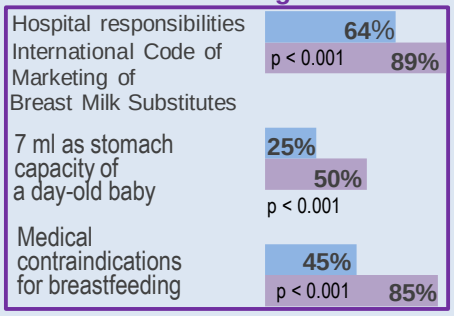
Practices



Attitude



Knowledge



A1054

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

Le M. K[1]., Tan L. L. C.[1,2], Yu C. C.[1], Tierney T.[3], Low J. Y. H.[1,2]

[1]Geriatric Education and Research Institute, [2]Geriatric Medicine, Khoo Teck Puat Hospital, [3]Office of Medical Education, Lee Kong Chian School of Medicine, Singapore

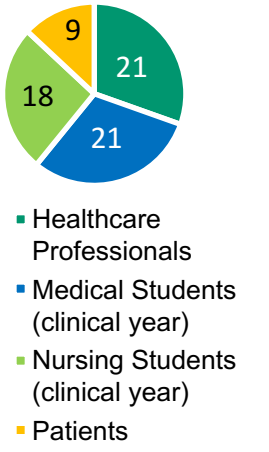
I. BACKGROUND

- Empathy displayed by healthcare workers has been shown to improve care outcomes (Derksen, Bensing, & Lagro-Janssen, 2013; Yu & Kirk, 2008).
- Evidence indicate that empathy levels decrease during medical training and professional practice (Neumann et al., 2011; Pederson, 2010).
- It is important to increase the understanding of empathy development in the healthcare context.
- This study aims to examine how the underlying beliefs and values of the healthcare professionals contribute to the development of empathy.

II. METHOD

Grounded theory approach:

- Simultaneous data collection, coding, memo-writing, and analysis.
- Data collection through focus group discussions.
- Purposive sampling in Singapore from:
  - 2 healthcare institutions
  - 1 medical school
  - 1 nursing school



We would like to thank all team members, Khoo Teck Puat Hospital, Yishun Community Hospital, Ngee Ann Polytechnic, Nanyang Polytechnic, Lee Kong Chian School of Medicine, Alice Lee Centres of Nursing Studies for their support.

III. RESULTS – EMPATHETIC INTROSPECTION CYCLE

BELIEFS & VALUES INFLUENCE EMPATHETIC RESPONSES IN:

THOUGHTS

"[…] let's say a patient with HCC and you know that he's an alcoholic, on the back of your mind we'll be like, "Oh, in a way it's like brought on him- he brought this upon himself right." And then so the element of empathy will greatly reduce cause you'll feel like he deserves it" - MS-02-010

EMOTIONS

"I find it as a challenge for myself to maintain my empathy sometimes when I feel very injustice, like there's a lot of condescending and accusation from family or from patients." - D-06-033

BEHAVIORS

"[…] a more simple thing is like to shift them up to the head of the bed, then some of them would just grab on the shirt and then just pull. But I think that's not the correct thing to do. We should treat them like if we are the one that lying down. […] So I think for me I won't pull the shirt, but I'll usually just grab on their body and shift up." - NS-12-058

EMPATHETIC INTROSPECTION

PROCESSING REACTIONS/FEEDBACKS TO EMPATHETIC RESPONSES

"Then for me the turning point where there is a consequence. Like something happen to the patient, that's when I start to question myself did I perform a good nursing care for the patient? So, therefore, from that day onwards, I just need to tell myself whatever I do, has to come from the heart." NS-09-045

REFLECTING AGAINST EXISTING VALUES & BELIEFS

"[…] one of the best things that somebody ever said to me when I was a younger MSW in the hospital was "if this was your mother right, would you do the same?" That thing really blew my mind and broke my heart completely because I realized that I wasn't being empathetic enough." D-11-054

REVISING & INTERNALIZING VALUES & BELIEFS

"I have the view that everyone has it (empathy) but may lose it or somewhere during a certain point of our lives, maybe a certain experience or something that after that experience, teaches to not bother so much, not to feel so much, not to think so much about another person's point of view." D-11-052

IV. DISCUSSION & CONCLUSION

- This study showed that individual's empathy is constantly evolving with the **Empathetic Introspection Cycle** at the heart of the development process.
- Beliefs & values influence one's responses to a situation/stimulus, which subsequently lead to internal and external feedbacks.
- The processing and reflection upon internal and external feedbacks need to occur for one to develop their empathetic beliefs and values, which leads to changes in empathy and influences future responses.
- Findings from this study may serve to inform the design of interventional efforts aiming at promoting empathetic behaviours in healthcare workers.

Medical Students' Utilization of Online Information Sources for Academic Information Searching

Yen-Lin Chiu[1], Yen-Yuan Chen[1,2]
[1]Graduate Institute of Medical Education & Bioethics, National Taiwan University College of Medicine, Taiwan
[2] Department of Medical Education, National Taiwan University Hospital, Taiwan

Introduction

The increasing adoption of online information has affected medical students' information searching behaviors for task-related medical queries. The ***main purposes*** of this study were to

1) explore medical students' utilization of online information sources for academic information search.
2) examine predictors of their academic information search.

Methodology

Participants

A total of 108 medical students from a medical university in Taiwan were surveyed. They aged from 20 to 43 with an average of 25.79. Among them, 59 were males while 49 were females.

Instrument

1) online academic help seeking questionnaire was used to examine participants' academic search and sources of medical information for academic tasks. 2) Also, motivational beliefs relating to learning medicine were investigated.

Results

■ **Exploratory Factor Analysis (EFA) results**

➢ ***Academic information searching behaviour***

KMO = 0.73, X^2 = 551.51(p < 0.01), total variance explained = 66.39%

3 Factors extracted, namely ***Scholar information search*** (α = 0.85), ***Formal query*** (α = 0.82), ***Informal query*** (α = 0.68)

➢ ***Learning motivation***

KMO = 0.77, X^2 = 526.43 (p < 0.01), total variance explained = 67.66%

2 Factor extracted, namely ***Intrinsic motivation*** (α = 0.85), ***Test anxiety*** (α = 0.92)

■ **Regression Analysis results**

➢ Test anxiety (β = 0.25, p < 0.05)→ informal query

➢ Intrinsic motivation (β = 0.31, p < 0.01)→ formal query

➢ Test anxiety (β = 0.21, p < 0.05), intrinsic motivation (β = 0.57, p < 0.001), senior grade (β = 0.29, p < 0.01)→ scholar information search

Conclusion

Inspiring medical students' intrinsic motivation may lead them to engage in scholar information search and formal query.

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

Ong M
Department of Restorative Dentistry NDCS, Singapore

Introduction

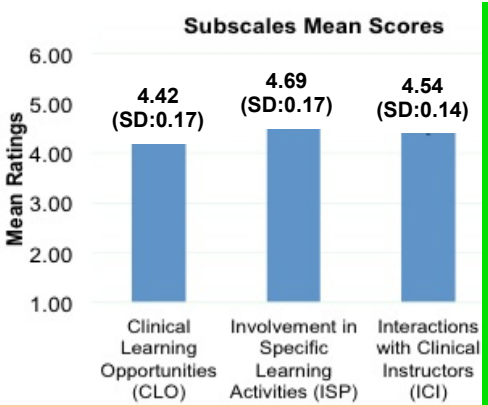
NDCS in collaboration with the Division of Graduate Dental Studies, National University of Singapore Faculty of Dentistry has been running 3-year Master of Dental Surgery Residency Training Programmes (RTPs) in five dental specialities since the 1990s. Until 2015, no specific evaluation of the learning environment in NDCS had been obtained. The aim of this descriptive study was thus to obtain dental residents' quantitative and qualitative perspectives on their NDCS clinical education learning environment.

Methodology

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)] and items related to NDCS Faculty and NDCS RTP. All de-identified data was collated and reported as group data.

Results

Forty-six (94%) residents (19M, 27F) completed the modified survey. The mean scores of the 3 subscales were taken as surrogates to reflect the residents' perspectives of their clinical education learning environment and a mean score ≥4 was viewed as a positive perspective.



Strengths
- Large patient pool with diverse needs.
- Very approachable and nurturing faculty.
- Provides clinical and administrative support.
- Easy access to support from other disciplines for interdisciplinary cases.

Weaknesses
- Patient allocation is an issue.
- Long waiting time for consultation.
- Lack of time to discuss cases with supervisors.
- Lack of adequate equipment and nursing assistance.

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.

Increasing the capacity of the NUHS Family Medicine Residency Programme and Revamping the Programme Curriculum

Tan DHY, Chua PL, Pang J, Chiw K
Department of Family Medicine , National University Health System, Singapore

Introduction

National University Health System (NUHS) Family Medicine Residency Programme has had to increase the number of residents trained per year from 6 to 30 residents per year. The programme previously did not have a primary care/community arm, but with the establishment of National University Policlinics (NUP) as an entity and with it coming under the NUHS cluster, there were more opportunities for residents to be trained.
The sudden increase in numbers lead to a need to revamp the way the curriculum was delivered, as well as to have more physician/core faculty come on board to deliver the educational requirements. Support from the various host departments in the hospitals and buy in from the various polyclinic heads would be needed to help to train the FM residents.
The current method of centralised weekly Friday teaching is unsustainable as it would lead to burnout of residents, faculty and programme coordinators.

Methodology

A curriculum review committee was set up with the aim of:
- Exploration of centralised vs decentralised teaching
- Determining which teaching to be carried out by FM vs specialty departments

New faculty were appointed to increase teaching capacity and to look at how the Clinical Competency Committee sessions could be efficiently carried out with the larger number of residents and faculty

Results

For delivery of teaching topics, 21 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 online and electronic platforms 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.
Educational programmes will need to be consistently reviewed to ensure their relevance, and feasibility even as they grow in numbers.
Stakeholders will need to be consistently engaged and buy-in achieved from all parties.
Ongoing monitoring will need to be carried out to ensure changes achieve the objectives that they were set out to do

Impact of University Examination Stress on Diet, Sleep and Perceived Body Weight among Undergraduate medical students in Trichy, India: A cross-sectional study.

[*1] Prethi .R, Priyadarshini .M[2] , Priyadharshini.B[3] , Priyanka. S[4] , Prabha Thangaraj [5], Rajajeyakumar Manivel [6].

[1,2] Department of Community Medicine, [1-5.] Physiology [6*]

Trichy SRM Medical College Hospital & Research Centre,(Affiliated by The Tamilnadu Dr. MGR Medical University, Chennai) Trichy, Tamilnadu, India – 621105.

Introduction

In recent days, university examination stress is playing a major role in eating and sleep pattern among young adults. There is a paucity of literature on this impact of stress and very few supportive evidence.

Methodology

Objectives:

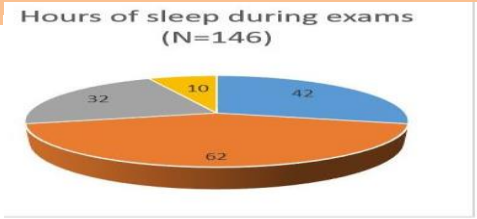
1. To estimate the proportion of medical students with change in dietary habits, sleeping patterns and perceived body weight one month before and during the university examination.

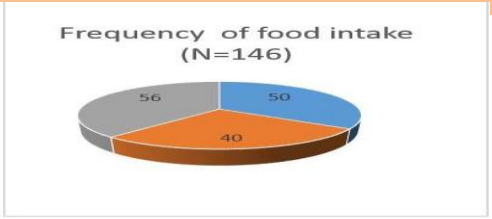
2. To find out the association between perceived stress and the above factors**.**

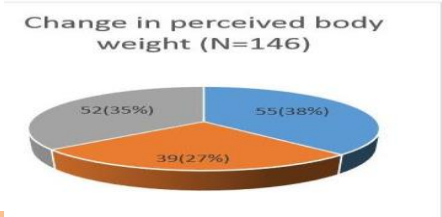
A retrospective type of cross sectional study was conducted among 146 (M=71, F=75) medical students of age between 22-24 yrs. of both genders.

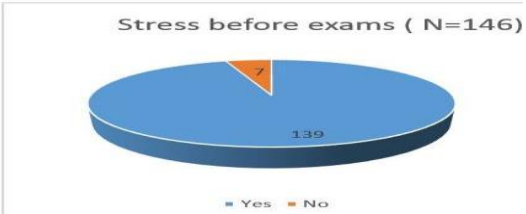
The study was conducted over a period of 3 months from June- August, 2019. They were selected randomly and explained about the study protocol with informed written consent taken from the subjects. A pre validated (validity-0.8) structured questionnaire was used in the study. The questionnaire includes topics about change in dietary habits, sleeping patterns and perceived body weight during and one month before the university examinations.

Results









Conclusion

Our study results show that, high susceptibility of young medical students to developing eating and sleeping disorders warrants further investigation. Early and proper introduction of stress management programme as part of the medical curriculum helps to prevent the negative impact of examination stress over normal diet and sleep.

THE IMPACT OF PRACTISING EMPATHY ON A PHYSICIAN'S PROFESSIONAL IDENTITY FORMATION: A SCOPING REVIEW

Tan HSL[1], Tan HEL[1], Khoo YH[1], Loh VWK[2], Toh YP.[2], Krishna LKR[1, 3, 4, 5]

[1]Yong Loo Lin School of Medicine, Singapore, [2] Department of Family Medicine, National University Hospital, Singapore, [3]Division of Supportive and Palliative Care, National Cancer Centre Singapore, [4]Centre for Biomedical Ethics, NUS, [5]Duke-NUS Graduate Medical School, Singapore

Introduction

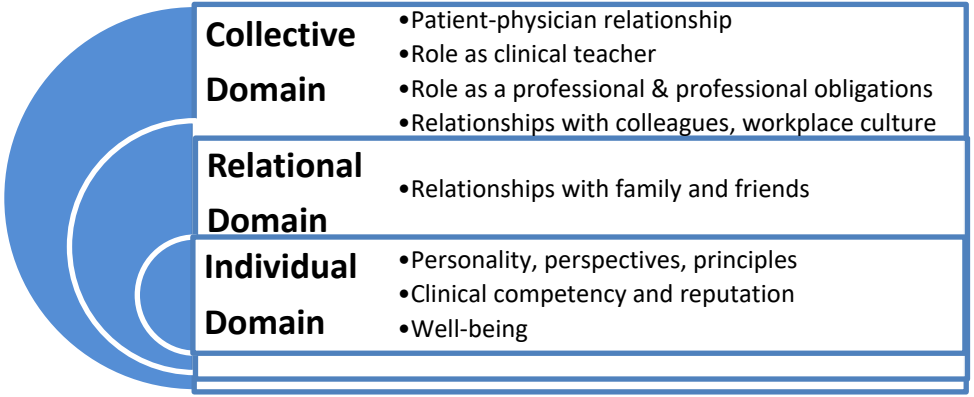
Physician empathy is considered critical to professionalism and physician-patient relationships, suggesting its impact upon elements of professional identity and leading to interest in integrating empathy into professional identity formation (PIF). However, empathy has also been linked to burnout and compassion-fatigue. With little consensus on empathy concepts, determining empathy's influence upon physicians' PIF may provide insight into empathy and its impact, and address concerns regarding burnout and compassion-fatigue to guide support of young physicians.

Methodology

Literature searches of 7 databases (PubMed, Cochrane, Embase, ERIC, PsycINFO, CINAHL, Google Scholar) were conducted till Nov 2018 for articles describing the impact of empathy on physicians' personhood and professional identity. Authors performed independent reviews of articles and thematic analyses. Consensus on themes was arrived after repeated reviews of full texts and team discussions.

Results

16 605 abstracts were reviewed, 467 full-text articles were reviewed and 107 articles were included.



Conclusion

Empathy positively affects the individual, relational and collective domains of a physician's PIF if effectively supported. The 'ripples' of both positive and negative changes with a physician's PIF in turn impact other domains of PIF. Identifying problems with empathy through feedback from patients, colleagues and standardised competency assessments may serve as an early barometer for detecting issues with PIF. Recognising the far-reaching impact of empathy on PIF underlines the need for training curriculums to include empathy as a core competency. Empathy can be enhanced through communication skills training and improvement of working conditions and work-life balance. Empathy training should teach cognitive empathy, perspective taking, self-regulation and breathing and mindfulness exercises. Targeting both perceptive and responsive components of empathy during training has shown to improve both patient satisfaction and physicians' ability to recognise and manage their own emotions.

A1067 # COURSE DEVELOPMENT COMBINING TEAM-BASED LEARNING, VIRTUAL SOFTWARE AND LABORATORY DEMONSTRATION TO DEEPEN THE TEACHING AND LEARNING OF ELECTROPHYSIOLOGY

Tsai K-L

Department of Physiology, School of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

Background and Aims

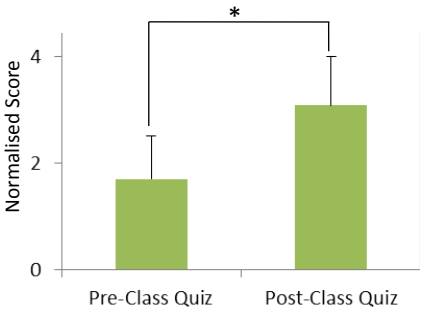
Electrophysiology is an essential part of medical physiology, as many diseases are related to abnormalities in electrophysiological response. However many medical students still have misconceptions and misunderstandings after attending lectures in electrophysiology. Therefore the teaching of electrophysiology should be innovated to strengthen the learning outcome of students. The aim of present study is to combine team-based learning, virtual software and laboratory demonstration to deepen the teaching and learning of electrophysiology.

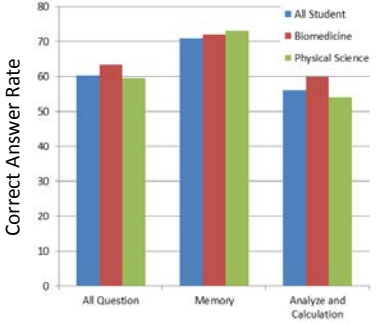
Methods

The study is an action research in which quantitative and qualitative approaches were used to analyze the data of test score, questionnaire, interview and participant observation taken from teacher and students. 63 students participated in the study by attending the course, written examination, laboratory demonstration and responding to a survey with questions about their learning experiences. Statistical differences were compared using Student's *t* test, taking a p value of < 0.05 as significant.

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, the understanding of electrophysiology significantly improved and most misconceptions have been corrected among students. Virtual software and laboratory demonstration further enhanced self-reflection and critical thinking. However, to our surprise we observed that there is no statistical difference between students with biomedicine and physical science background in examination performance of all question types.





Conclusion

It is shown that the innovative course deepens the teaching 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

Lean Heong Foo[1], Marianne Ong[2]
[1]Associate Consultant, [2]Senior Consultant, Department of Restorative Dentistry, National Dental Centre Singapore

Introduction

Team-based learning (TBL) pedagogy is derived from the constructivist learning theory that promotes active learning among learners. This learner-centric pedagogy exposes the inconsistencies in learners' current and new understanding, and subsequently promotes a new mental framework built upon previous knowledge. We designed a TBL workshop to introduce and enhance the knowledge related to periodontal diagnosis in the context of the New Classification of Periodontal Diseases 2017 for National Dental Centre Singapore (NDCS) and Singhealth Polyclinic (SHP) Dental Officers.

Methodology

1 **Pre-reading**
2 articles were given to learners two weeks before the workshop.

2 **I-RAT**
Learners answered 6 multiple choice questions from the pre-reading articles.

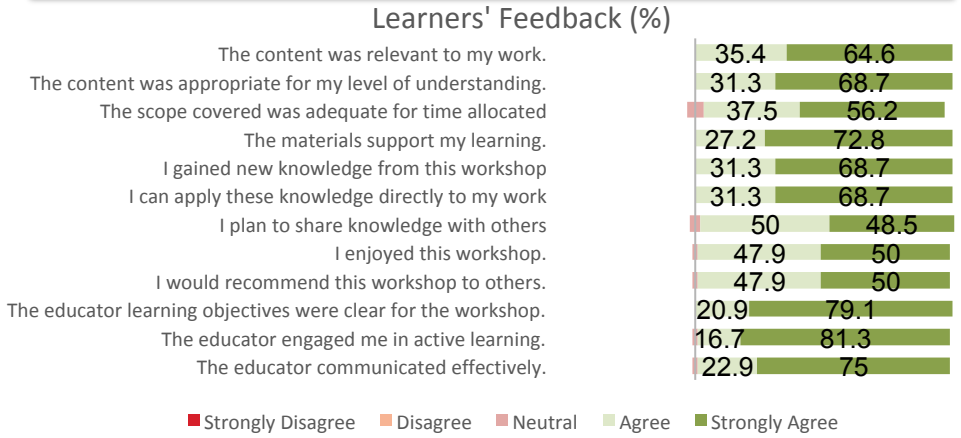
3 **G-RAT**
Learners were divided into 8 groups and discussed answers revealed with the IFAT card.

4 **Application**
3 clinical cases using the **4S** framework – **S**ame Problem, **S**ignificant Problem, **S**pecific choice, **S**imultaneous reporting.

5 **Feedback**
Learners' agreement on the 12 statements based on 5-point Likert Scale (5-strongly agree 1-strongly disagree).

I-RAT – Individual Readiness Assurance Test
G-RAT – Group Readiness Assurance Test
IFAT – Immediate Feedback Assessment Technique

Results



N=48

Learning = 4.65

Educator = 4.77

COMMENT

- Useful clinical cases
- Good,in-depth discussion

Conclusion

This learner cohort found the TBL workshop useful. A TBL pedagogy can be used to promote a more interactive form of learning through feedback and reflection during group discussions.

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

Razali AAF, Cheng R, Tan SK, Ye XR, Toh HC

Acute & Emergency Care Center, Khoo Teck Puat Hospital, Singapore

Background and Aims

Acute exacerbation of asthma is a common presentation in the Acute & Emergency Care Center in Khoo Teck Puat Hospital. The average door to nebulization time (DTN) for walk in patients with symptomatic non life threatening asthmatic exacerbation was long at 44minutes.

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 nebulization on a per-protocol basis. The aim was to evaluate the impact of this training model on the confidence level and competency of the execution of the protocol, empathy with patients and DTN time.

Methods

Using the 'ADDIE' instructional system design process, the model incorporated the flipped classroom methodology and Gagne's 9 events of instructional model.

Gagne's 9 events of instructional model	Examples of Implementation
1. Gain attention of learner	Breathing through straws of varying narrowing to simulate asthmatic exacerbation.
2. Informing learner of objective	To execute nebulization protocol safely and identify wheeze on auscultation
3. Stimulating recall of prior knowledge	MCQ
4. Presenting the content	Interactive discussions with audio integrated clinical scenarios
5. Providing "Learner guidance"	Categorization of exclusion criteria
6. Eliciting Performance	Recollection of content, practice scenario with auscultation
7. Providing Feedback	Ongoing feedback
8. Assessing performance	Summative MCQ & auscultation assessment
9. Enhancing retention & Transfer	Reviewing MCQ answers & discussing anticipated problems

Authentic whole-task training with audio integrated clinical scenario's and training of auscultation on mannequins directed at level 2 and 3 of the Miller's pyramid respectively. Empathy was elicited by asking nurses to breath through straws of varying calibres to appeal to the patient experience.

Several components were measured:

- An online survey 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.
- The nurses competency was measured using scenario based MCQs and practical auscultation assessments.
- Average DTN time was calculated post implementation of protocol
- Empathy was reported on a 5-point Likert scale.

Results based on Kirkpatrick Model	
4b: Benefit to patient	Following implementation of the protocol, the DTN time reduced by 23%(10 minutes).
4a: Change in organizational practice	Nurses are now able to order medication on a per protocol protocol basis.
3: Behavioral Change	Triage nurses auscultated all patients presenting with suspected asthmatic exacerbation
2b: Acquisition of knowledge/skills	The pre-post MCQ test improved from 7.27 to 8.65 ($P<0.0001$) out of a maximum score of 10
2a: Modification of attitude/perception	All nurses who participated in the feedback reported that they could empathize better with patients after the training.
1: Learner reaction	The nurses reported increase in confidence level in implementing the protocol (4.43 to 7.71, $p<0.001$; response rate 43.8%, 21 out of 48)

Conclusion

The experiential outcome- based training model improved the triage nurses' ability and attitude when caring for symptomatic asthmatic patients. The training along with the designed protocol expedited the administration of nebulization and contributed to better patient outcomes. This, in combination with multi-prong efforts to enhance the protocol reduced the total DTN from 44 minutes to 21 minutes.

REDESIGNING CASE-BASED DISCUSSIONS IN COACHING CLINICAL SKILLS FOR THE NOVICE AND INDIFFICULT MEDICAL STUDENTS.

SAOWAPHA SRISAI, M.D.
FAMILY MEDICINE DEPARTMENT, SONGKHLA HOSPITAL, SONGKHLA, THAILAND

Introduction

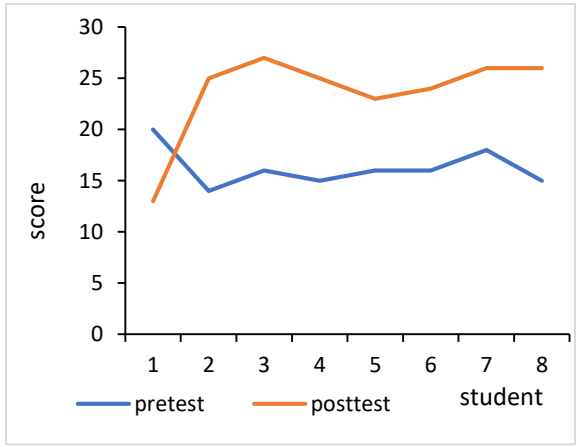
Case-based discussions are an essential skill in clinical practice, usually used in workplace-based assessment for assessing competency in clinical reasoning, clinical decisions and patient management for the inexperienced students.

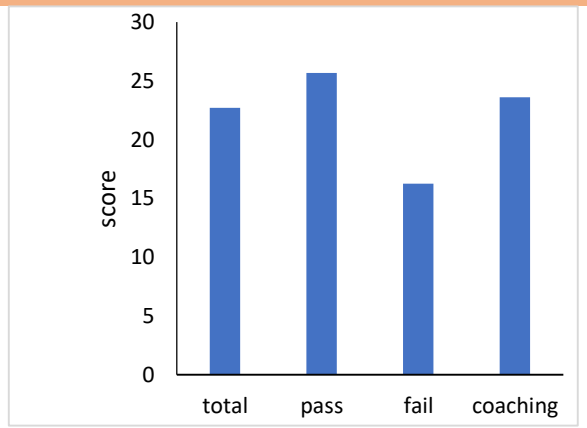
Methodology

The sample population was all 4th year medical students at the Medical Education Center of Songkhla Hospital. After completing the 5-week Introduction to Medicine course, they were assessed by OSCE and a short-case approach. Those who failed to meet the minimum desired level were included in the study.

8 out of 25 medical students were enrolled in the short program. They were asked to practice their clinical skills during their ward work and had to present one case at the weekly student meetings with their supervisor. Their performances were evaluated after the 2-month coaching program.

Result





Conclusion

Case-based discussions can improve the clinical knowledge of medical students. It can also promote a better relationship between the students and their supervisor.

Using case-based discussion and formative feedback to improve students' knowledge is a good addition to any medical training.

What is learned through teaching?

qualitative study about learning of the second year residents who teach the first year residents

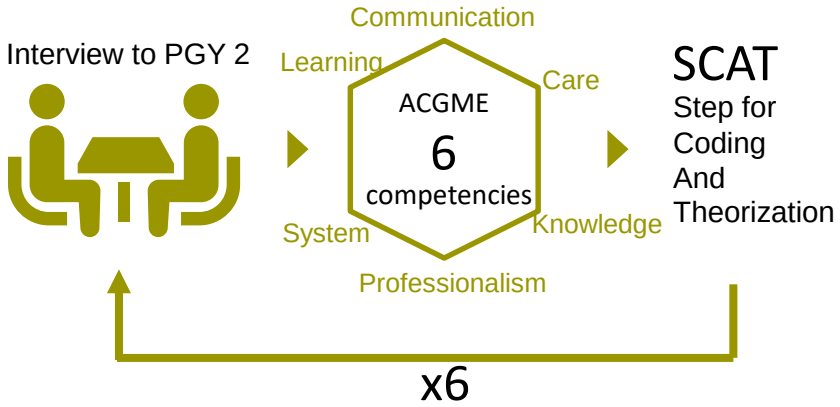
Takeshi Kondo [1], Noriyuki Takahashi, Muneyoshi Aomatsu[3], Juichi Sato [4], Hiroshi Nishigori[1]

1. Center for Postgraduate Clinical Training and Career Development, Nagoya University Hospital, Nagoya, Japan 2. Department of Education for Community-Oriented Medicine, Nagoya University Graduate School of Medicine, Nagoya, Japan 3. Department of Medical Education, Saku Central Hospital, Saku, Japan 4 Department of General Medicine/Family & Community Medicine, Nagoya University Graduate School of Medicine, Nagoya, Japan

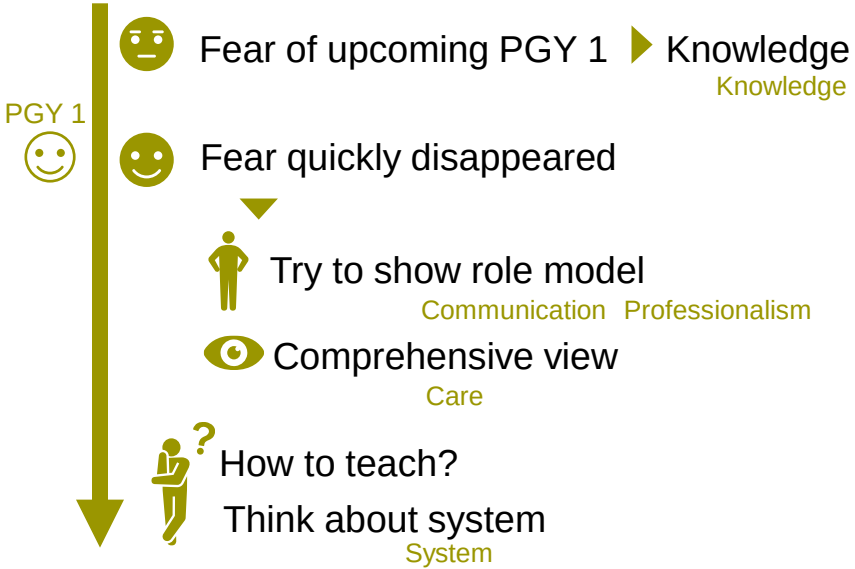
Introduction

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.

Methodology



Results



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.

EVALUATION STRATEGIES OF COMMUNICATION TRAINING IN INTENSIVE CARE UNITS: A SCOPING REVIEW

Goh, S.[1]; Chia, W.Y.E.[1]; Lee, C.Y.C.[2]; Khoo, S.Q.M.[1]; Zhou, X.J.[3]; and Krishna, L.K.R.[1,3]

[1] Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore;

[2] Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore, Singapore;

[3] Division of Supportive and Palliative Care, National Cancer Centre Singapore, Singapore

Introduction

The growing recognition of high communication needs among critically ill patients in Intensive Care Units (ICUs) has brought about implementation of various communication skills training programmes for healthcare professionals (HCPs). Yet, little is known about the gaps in existing strategies to evaluate effectiveness of these programmes. **To provide a comprehensive overview of current evaluation methods and their limitations**, a scoping review was carried out. **Kirkpatrick's Hierarchy for Health Professional Education Evaluation** was used for analysis.

Methodology

Arksey and O'Malley's framework for conducting scoping reviews was used to guide study of the potential size, gaps and scope of available literature on assessing communication training for HCPs in ICUs. 8820 abstracts were identified, 238 full-text articles were reviewed, and 31 full-text articles were analysed by 6 reviewers through independent literature reviews of articles published in PubMed, ERIC, JSTOR, Embase, CINAHL, Scopus, PsycINFO and Google Scholar databases. Using Braun and Clarke's framework, 3 themes were developed- **(1) evaluation methods of communication training programmes, (2) evaluation criteria, and (3) factors affecting the strength of evaluation methods**.

Results

Evaluation methods: The review reveals a wide variety of evaluation methods employed, which include pre- and post- intervention surveys and assessments, observations of communication interactions, interviews, and others.

Evaluation criteria: The 5 levels of Kirkpatrick's Hierarchy for Health Professional Education Evaluation are *Level 1 (participation), 2a (attitudes and perceptions), 2b (knowledge and skills), 3 (behavioural change), 4a (organisation practice) and 4b (patient benefits).* In general, current tools do not sufficiently assess communication training programmes beyond the second level.

Factors affecting strength of evaluation methods: Through analysis of factors including (1) the objectivity of assessors, (2) presence of comparator groups, and (3) inclusion of multiple stakeholders' perspectives, it is evident that there are various gaps that need to be taken into consideration and addressed.

Conclusion

While current evaluation methods are lacking, it is hoped that this scoping review may **guide future research on the design of a holistic and longitudinal evaluation tool with objective measures.** Such a tool may then be used to reliably assess the true effectiveness of communication training programmes, to ultimately aid institutions in implementing and optimising programmes for HCPs in ICUs to achieve long-term benefits in organisational practice and patient care.

EXPLORING YEAR 2 NURSING STUDENTS' PERCEPTIONS TOWARDS CRITICAL THINKING AND CLINICAL REASONING

Wong, S. H. V. [1], Kowitlawakul, Y. [2]
[1]Nursing, Alice Lee Centre for Nursing Studies, Singapore, [2] Nursing, Alice Lee Centre for Nursing Studies, Singapore

Introduction

Critical thinking and clinical reasoning are core competencies emphasized in nursing practice. Nursing students are required to develop and practice these skills throughout their education to graduate as a registered nurse. However, recent studies still report a lack of critical thinking and clinical reasoning in nursing students and fresh graduates. It is important 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 aimed to explore year 2 nursing students' perceptions towards critical thinking and clinical reasoning, and the barriers faced in developing these skills.

Methodology

This study employed a descriptive qualitative design and recruited 20 nursing students using convenience sampling. Individual face-to-face interviews were conducted using a semi-structured interview guide. Interviews were audio-recorded and transcribed verbatim. Upon transcription, thematic analysis was used to analyze the data 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 key components of their nursing practice and described how they used these skills to link their theoretical knowledge to hands-on practice. The strategies used to stimulate critical thinking and clinical reasoning were lab and tutorial simulations, case studies, clinical experience and the guidance from their clinical instructor. Barriers to developing critical thinking included tutor to student ratio, ward culture, and students' individual attitudes towards learning.

Conclusion

This study explored nursing students' perceptions towards critical thinking and clinical reasoning, as well as the barriers faced in developing these skills. These findings have provided an insight into factors that affect the development and delivery of nursing education, which would allow institutions to improve current nursing programs and clinical practice to better support nursing students in developing critical thinking and clinical reasoning skills.

Correlation between Clinical GPA score with National Board Examination in Faculty of Medicine, Pelita Harapan University

Andree Kurniawan, Nata Pratama Hardjo Lugito, Neneng Suryadinata, Liviany Holil, Allen Widysanto, Vivien Puspitasari
[1]Faculty of Medicine, Pelita Harapan University, Karawaci, Tangerang, Banten, Indonesia

Introduction

The National board of medical examination ("UKMPPD) has emerged as a new challenge for medicine faculty in Indonesia in which there are thousands "UKMPPD" re-takers.
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 preclinical and clinical program.
Thus the GPA as a measure of student performance in conducting the curriculum is expected to correlate in achieving the "UKMPPD".

Aims: To determine the correlation between cumulative GPA score of students with achieving the "UKMPPD"

Methodology

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".
Furthermore, the data was analyzed using Pearson and Spearman correlation test.

Results

There were 181 first taker students and 35 re-taker students.
The mean of GPA first taker was 3.39$\pm$0.09.
The mean of CBT first taker score was 77$\pm$5.31.
The mean of OSCE first taker score was 76.95$\pm$4.59.
The CBT first taker was correlated with GPA score ($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$\pm$0.22.
The mean of CBT re-takers was 70.18$\pm$2.15.
The CBT re-taker was not correlated with GPA score ($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.

Andree.Kurniawan@uph.edu

PGY1 Monthly Performance Review
an effective platform for evaluation and supervision of PGY1s in the Department of Internal Medicine, Singapore General Hospital

Mattar S A M, Nadarajan Krithikaa, Seto YW Daniel
Department of Internal Medicine, Singapore General Hospital, Singapore

Introduction

- 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.
- Meeting the SMC requirement for a bimonthly meeting between the Clinical Supervisors and Educational Supervisors is challenging in our large department with about 60 PGY1s rotating through on the average.
- It is therefore imperative that a different approach to PGY1 evaluation was adopted in the department.

Results

- In the year of 2019 between the months of January to July, we identified 11 PGY1s who fell below expectations over the 6 meetings.
- They were 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 PGY1 rotation report : 97% of 119 PGY1s surveyed felt that faculty and staff provide adequate supervision frequently to most of the time which reflects the positive amount of perceived adequacy of supervision they receive.

Methodology

- 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.
- Feedback is collated from senior staff in advance to the meeting by admin executives via email channels.
- Supervisors required to state if the PGY1 falls below, meets or exceeds expectations stating narrative examples especially for PGY1 who fall below or exceed expectations.
- Feedback is openly shared among the ward consultants, clinical supervisors and educational supervisors.
- PGY1s who do not meet expectations are required to meet their supervisor to formulate a remediation plan. They are followed up upon in subsequent meetings to trace for any significant improvements.
- Outstanding PGY1 are also highlighted for recognition and awarding purposes.

Conclusion

- Implementation of a monthly performance review meeting facilitates meeting SMC supervisory requirements for training.
- Proven to be effective for identifying PGY1 individuals who fall below expectations.
- Meeting platform encourages an open, multi-weighted and fair discussion among senior staff to come an accurate consensus on the performance of the PGY1s.

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

Kong M.L[1] , Devi, MK[2]

[1]General Surgery, Khoo Teck Puat Hospital, Singapore, [2] Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore

Introduction

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. The aim of this study is to examine the knowledge and attitude of the nursing students in an undergraduate program towards acute pain management.

Methodology

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

Year of Nursing	Mean	SD
2 (n=89)	58.2	9.33
3 (n=139)	60.2	8.15
4 (n=51)	59.8	9.31

	Year 2 (n=89)	Year 3 (n=139)	Year 4 (n=51)
Gender			
Female	78 (87.6%)	127 (91.4%)	45 (88.2%)
Male	11 (12.4%)	12 (8.6%)	6 (11.8%)
Ethnicity			
Chinese	79 (88.8 %)	112 (80.6%)	46 (90.2%)
Non-Chinese	10 (11.2%)	27 (19.4%)	5 (9.8%)

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 Students Using Scenario Based Interactive Teaching Method

[1]**Seneviratne H.M.T.W.**, Somaratne K.M.K.
[1]Department of pharmacology, Faculty of Medicine, University of Peradeniya,Sri Lanka,[2] Department of Surgery, BH Rikillagaskada,Sri Lanka

Introduction

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 needs 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

Methodology

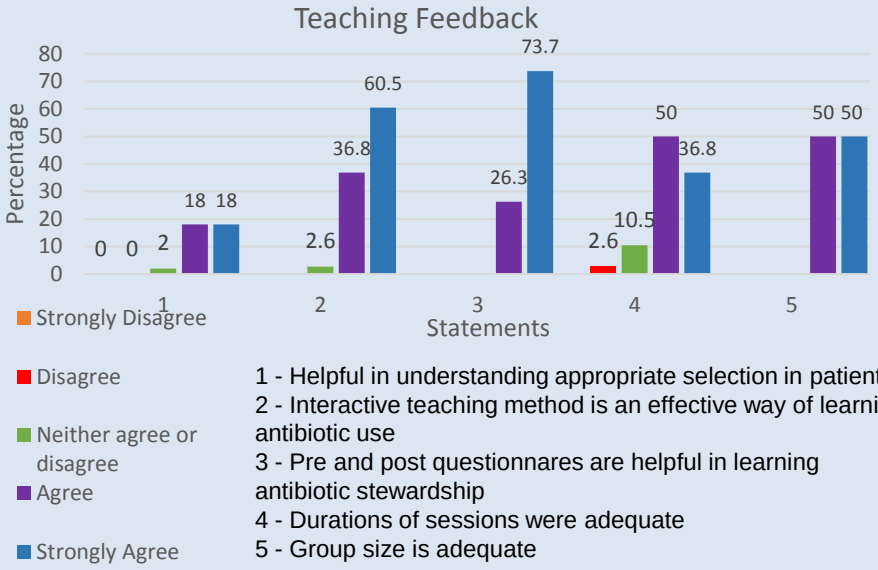
Third year medical students (N=40) of the Faculty of Medicine, Peradeniya, were involved in the study. During June to July 2019.

Groups of 4 to 5 students → Pre test on rational antibiotic use → Interactive teaching session → Post test and teaching feedback

- Scenarios on rational antibiotic use emphasizing antibiotic stewardship

Results

Mean marks for the pre test was 77.7 and Post test was 94.4 . p= <0.001



1 - Helpful in understanding appropriate selection in patients
2 - Interactive teaching method is an effective way of learning antibiotic use
3 - Pre and post questionnares are helpful in learning antibiotic stewardship
4 - Durations of sessions were adequate
5 - Group size is adequate

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.

Tag-on-Call- A Tool to Prepare and Assess House Officers going for First Night Call

Galang, L, Han, YT
Department of Internal Medicine, Singapore General Hospital, Singapore

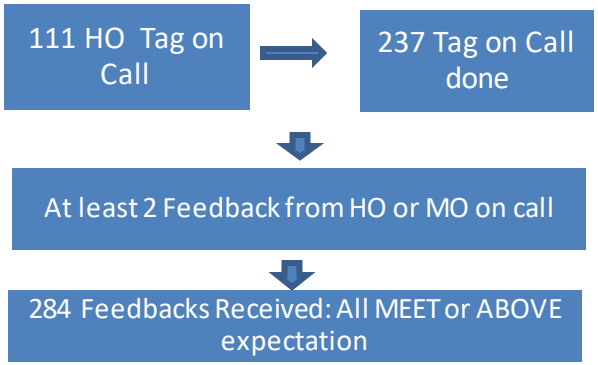
Introduction

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. 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.

Methodology

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 encouraged.

Results



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.

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 Senior Ward Doctors who assess new HOs for a longer period of time.

Developing Standardised Patients (SP) to Shape Healthcare Professionals

Tan K.Y.S[1], Yong S.H[1]
[1]Pre-Professional Education Office, Tan Tock Seng Hospital, Singapore

Tan Tock Seng Hospital
National Healthcare Group

Introduction

Tan Tock Seng Hospital (TTSH) has been using SPs for teaching and training our staff and students since 2010 and Pre-Professional Education Office (PPEO) is currently managing a team of 120 SPs. With an increasing involvement of SPs in our teaching programmes, there is a need to continuously train and develop the SPs to meet the growing demand. Recognising that SPs play a pivotal role to help shape our future healthcare professionals, PPEO held our inaugural SP Fiesta, themed "SPs – **S**haping **P**rofessionals for tomorrow's healthcare" in 2018 and a second run in 2019.

Methodology

Advanced Practice Nurses (APN) were invited to improve SPs' general knowledge of the various case scenarios in the script, such as gout, chronic illnesses and their symptoms. SPs were taught how to de-role after acting in a high emotional scenario through relaxation techniques. They also brainstormed on how they would like to grow and develop themselves. Long Service Awards were also given to the SPs who have stayed with us for 5 years and longer.

How to de-role through relaxation techniques

"How would I like to develop as an SP?"

Learning about gout, chronic illnesses and their symptoms

Long Service Awards

Results

SP's feedback is collected after the session using a 4-point Likert scale.

Figure 1. The topics were applicable to my role as SP

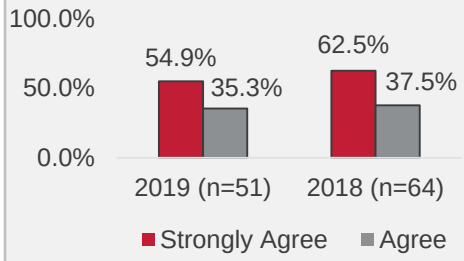
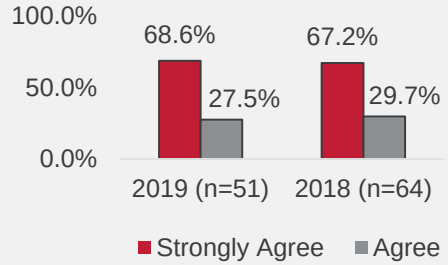


Figure 2. The objectives of the SP Fiesta were met



Conclusion

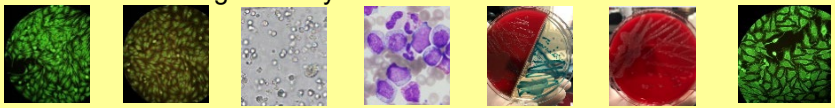
SP Fiesta has met its objective of addressing SP's personal welfare and developmental needs. The intended outcome is for them to help shape our learners to be competent and empathetic future healthcare workers.

Using Interactive E-Teaching System In The Post-Graduate Training In Laboratory Medicine

Hsiao-Ni Yan[1], Shwu-Ing Meng[1], Chih-Wei Yang[2,3], Wang-Huei Sheng[2,4], Yu-Chun Chiu*[2,5]
Department of Laboratory Medicine[1], Medical Education[2], Emergency Medicine[3], Internal Medicine[4] and Pediatrics[5],
National Taiwan University Hospital, Taipei, Taiwan

Introduction

- Young generations are familiar with electronic devices and E-learning. We aimed to analyze the learning effectiveness after using interactive E-teaching system in the post-graduate year(PGY) training in Laboratory Medicine. The system we set-up since 2016.
- Medical Technologist-the eyes for doctors

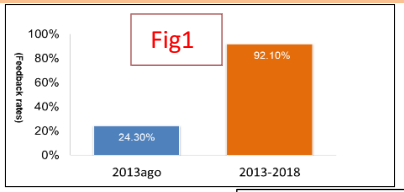


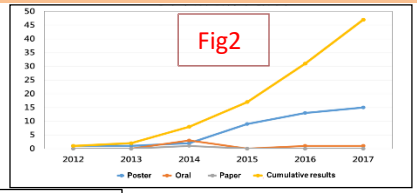
- Lab data – the Ruler of clinical decision
- Cultivate a new generation of Medical Technologist with sensitivity, specificity, and cross-domain communication.

Methodology

- LINE groups :for connection and discussion
- Google forms: evaluate learning/teaching effectiveness and student feedback
- TMS(NTUH Training Management System): lecturing
- TMS(NTUH Training Management System) forms :for fill out the satisfaction questionnaire

Results





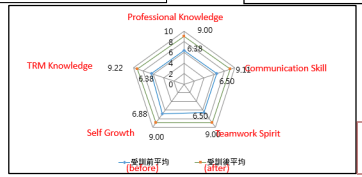


Fig3

Fig1: Student feedback rates increased from 24.3% to 92.1% after Google Forms being paralleled to assessment.

Fig2: Average conference or journal article published by PGY trainees increased from 0.89 (19PGY in 2012-2015) to 1.52 (31PGY in 2012-2017)after integrating interactive E-teaching system in PGY training.

Fig3: PGY trainees Improvements Analysis .

Conclusion

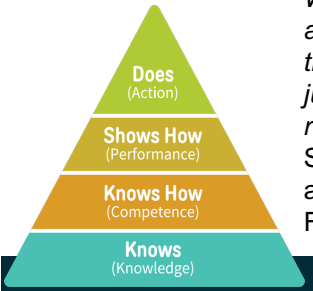
1. Interactive E-teaching system complements the shortcomings of traditional course in immediacy.
2. E-teaching system Forms make student feedback more convenient thus increase the response rate.
3. Interactive E-teaching system motivates students to explore and discuss problems in an unrestricted environment thus is associated with learning benefits and even active learning after training.

Development of an Evidence-Based, Practical and Contextualised Workplace-Based Assessment Framework for General Practice Training and Education

Emily Kirkpatrick[1], Jill Benson[1,2], Shaun Prentice[1], Taryn Elliott[1], Lambert Schuwirth[2]

[1]GPEx Education and Training, Adelaide, Australia, [2] Prideaux Centre, Flinders University, Adelaide, Australia

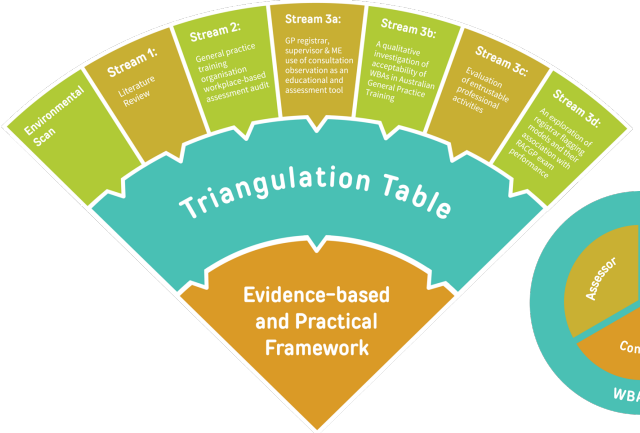
Introduction

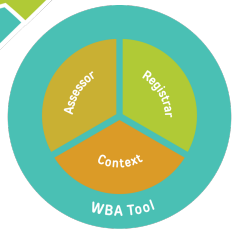


Workplace-based assessments (WBAs) are the tools and the processes used in the collection of data about the trainee's performance in the workplace, and the judgement of their competence by an assessor, for a range of summative and/ or formative purposes.

Six streams of research were undertaken to develop an evidence-based, practical and contextual WBA Framework for General Practice training in Australia.

Methodology

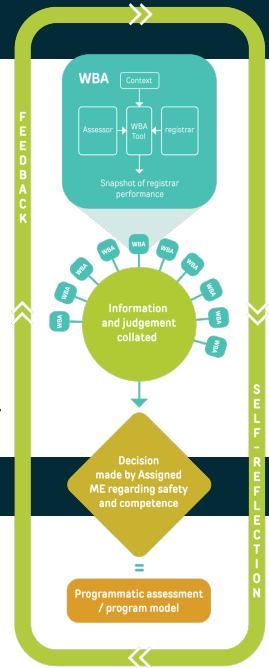




- Safety assessment
- Supervisor direct observation of registrar
- Direct observation of registrar by ME or external clinical teacher
- Direct observation video reviews
- Mid and end-term assessments
- Multi-source feedback
- Learning log
- Procedural skills log
- Random case analysis
- Patient encounter tracking and learning
- Statement of awarded responsibility (STAR assessment)

Results

Recommendations were 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 program that is tailored to their need to become safe, independent self-reflective life-long learners.



Conclusion

Collaborative and comprehensive research undertaken over 7 months across 9 out of 10 GP training organisations. The framework endorses many of the current practices throughout Australia, but is based on 'best practice' research. Achieving success in general practice training is more about standardisation of the **quality** of the workplace-based assessment process and not necessarily about standardising the **method** utilized.

This research project was supported by the Royal Australian College of General Practitioners with funding from the Australian Government under the Australian General Practice Training program.

PRIMARY HEALTH CARE IN THE AGE OF ADVANCED TECHNOLOGY AND MODERN MEDICINE

Ramon Jason M. Javier, MD, MSTM, FPAFP; Christianne D. Cabanos, RMT, MD, FPAFP, Christian G. Betita, MD, DFM
Department of Preventive and Community Medicine, College of Medicine, UERMMMCI – Quezon City, Philippines

Introduction

With the recent passage and signing of the Universal Health Care (UHC) Act of 2019 during the first quarter of this year, primary health care (PHC) in the Philippines was once again re-affirmed as a the main strategy to attain "health for all," that would lead to better health outcomes through a more efficient utilization 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 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.

Methodology

A total of 381 clinical clerks (i.e., fourth year medical students) 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 in the Province of 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, PHC, and primary care as relevant, especially in resource-limited settings, 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 still very much fixated to become clinical specialists, and the idea of general medicine practice 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 sociopolitical 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 marginalized and indigent in the community.

Conclusion

In this age of advanced technology and modern medicine, PHC in the grassroots and resource-limited community levels would need to overcome a lot of sociopolitical and cultural barriers in the entire Philippine healthcare system, if indeed UHC was to be achieved for every Filipino family in the coming years. Champions of patient-centered, 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 realize UHC.

Nurturing Future Doctors with Virtual Integrated Patients

Juanita S.M. Kong[1], Judy C.G. Sng, Zhu Lixia, Edmund J.D. Lee

[1]Department of Pharmacology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

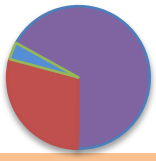
Introduction

Problem: Limited access to real patients, Standardized Patients (SP) workaround, expensive, time consuming & limited.

Aims: Review Virtual Simulators (VS) used in medical education, strengths and recommended improvements. How we have advanced to introduce into medical students' education.

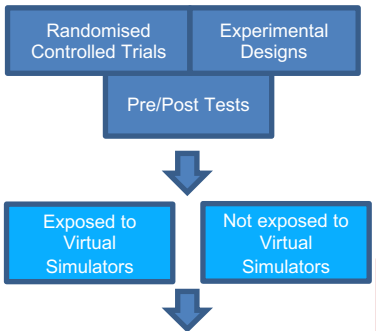
Types of VS models in the market

1. Linear/ Semi Linear (Most)
2. Menu Driven
3. Conversational Technology (Least)



Literature Review

Literature Comparison



Outcomes Measured

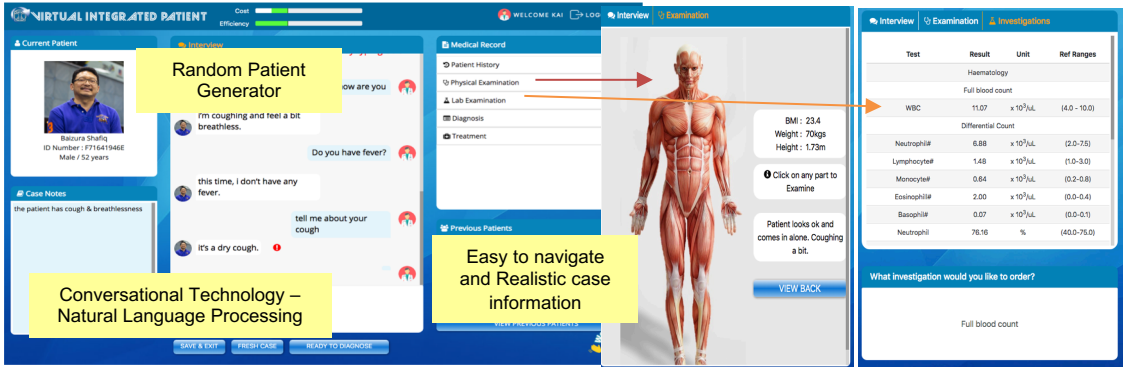
Satisfaction, Engagement, Feedback

Suggested Improvements to current Virtual Simulators

- ✓ Variability of cases
- ✓ Realistic and relatable cases
- ✓ More conversational so that participant does not feel robotic using VS.
- ✓ Customization to fit students' learning needs

"… might be connected with someone's wish to apply open ended questions in order to build trust…"
(Ekblad et al. 2013)

Our Solution = Virtual Integrated Patient (VIP)



Visit our booth table T2 at basement 2 to try it out now! Or if you have further queries, you can contact us at phcelee@nus.edu.sg or phcap@nus.edu.sg

VIP Pilot Study on M2, 2nd year Medical Students.

Survey Results:

*Scores based on survey feedback that strongly agree and agree

- Students felt more confident and ready* — 69%
- Better remembers content* — 87%
- Helps Improve efficiency* — 68%
- Will recommend to others* — 63%

System Usability Scale

Total Score:
Excellent: >80.3
Good: 68.01 – 80.3
Okay: 68
Poor: 51 – 67.99
Awful: <51

69.76 (**Good**)

(Alathas, 2018)

"… ***apply*** *your history techniques. … to consider things in a* ***safe online environment.***"
"…just learned how to take the history. … conditions we were presented were **consistent** with what we've learned …."
"…really **good revision**. … **good way to practice** without feeling the stress."

The Perceived Educational Value of Digital Model Treatment Simulation in Undergraduate Orthodontics Teaching

Soh SH, Lee YHL, Foong KWC
Faculty of Dentistry, National University Health System, Singapore

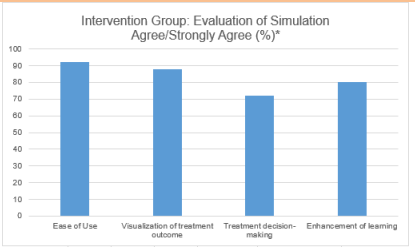
Introduction

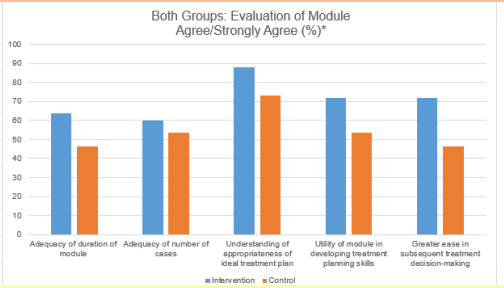
Orthodontic treatment planning is a challenging skill set for undergraduate dental students to develop as it requires visualization of a future outcome from an existing condition. Simulating the clinical outcome with digital dental model set-ups aids visualization and possibly treatment planning.
Aims: To investigate undergraduate dental students' perception of the value of digital dental model treatment simulation on 1) understanding orthodontic treatment principles and 2) developing orthodontic treatment planning skills.

Methodology

Fifty-one Year 3 undergraduate dental students, randomly allocated into Intervention (n=25) and Control (n=26) groups, participated in an orthodontic treatment planning module on a digital platform.
They reviewed ten Incisor Class II Division 1 cases over two weeks. Pre-treatment records and 3 treatment options (with digital simulations for only the Intervention group) were presented. The digital model simulations demonstrated the final outcome of each treatment option. Students then indicated their preferred treatment option. The ideal treatment plan for each case was subsequently revealed with justification for the choice, post-treatment photographs, and a commentary evaluating each treatment option. A user satisfaction questionnaire (with a 5-point Likert Scale) was administered after module completion.

Results





*Questionnaire was based on a 5-point Likert scale; other options given were: *Neutral*, *Disagree*, & *Strongly Disagree*

More than 75% of students felt the digital simulation was easy to use, enhanced the learning value of the module, helped in visualizing the outcome of the treatment options, and in deciding between the options.
The intervention group had a larger percentage of students than the control group, who felt 1) the duration of the module and number of cases were adequate, 2) they understood the rationale for the ideal treatment plan, 3) the module was useful in developing orthodontic treatment planning skills, and facilitated subsequent treatment decision-making.

Conclusion

Digital treatment simulation is perceived by undergraduate dental students as a helpful aid in understanding orthodontic treatment principles and developing their orthodontic treatment planning skills. It also enhanced the perceived usefulness and acceptability of the e-learning module.

DICED: A framework for managing residents in difficulty

Chia FL, Lu QHS
National Healthcare Group Residency, Singapore

BACKGROUND

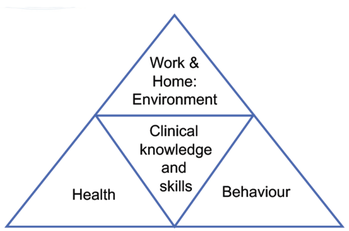
Residency is, without doubt, a very stressful period of training, Supporting junior doctors through this time is of utmost importance, but programme directors and faculty often find managing resident in difficulty one of the most challenging aspects of their work. The Graduate Medical Education Office 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 faculty skills in this area.

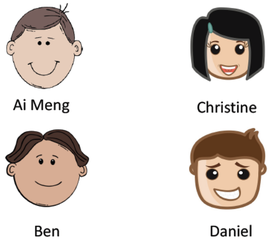
METHODS

A 3 hour workshop was designed to introduce a practical framework to approach a resident in difficulty and apply the knowledge subsequently with group discussion and role play using 4 case scenarios.

D	• Document everything
I	• Identify early
C	• Clarify facts, corroborative history
E	• Explore cause(s)
D	• Diagnose and remediate (bespoke)

The "DICED" framework is an acronym for Identify Early, Clarify facts and corroborate history, Explore causes, Diagnose and remediate in a bespoke fashion, with an overarching requirement to document everything appropriately being the first D.



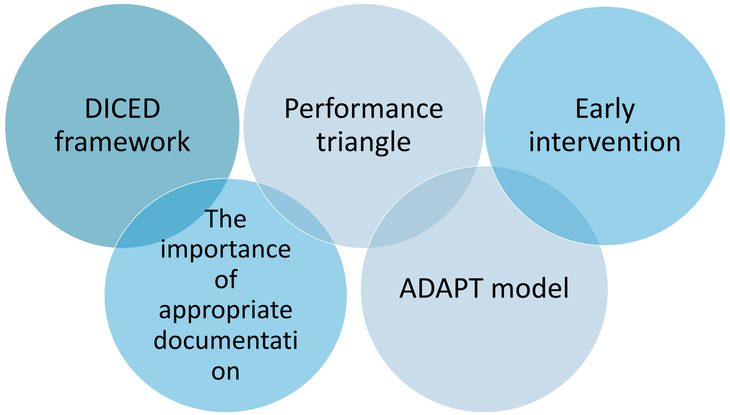


Recognition that poor performance is usually a symptom and not a diagnosis in itself was emphasized, and the concept of the performance triangle was introduced as a guide for causes to explore.

The workshop ended with 4 case scenarios that differentiated academic from non-academic disciplinary processes, and touched upon mental health and fitness to practice. Feedback models and how management must be aligned with institutional policies were highlighted.

RESULTS

Both runs of the workshop were well received with unanimously positive feedback. 78% of participants strongly agreed that the skills learnt were applicable to their work. The top learning points included the following;



CONCLUSION

Having a framework such as DICED allows for a more structured approach to the resident in difficulty

TECHNOLOGY ASSOCIATED COMMUNICATION EDUCATION FOR PHYSICIANS. A SCOPING SYSTEMATIC REVIEW.

Haziratul Zakirah[1], Jeffery Koh Wei Heng[2], Ng Cheng Han[3], Ong Zhi Hao[3], Ying Pin Toh[4], Lalit Krishna[5]

[1]Ngee Ann Polytechnic, School of Life Sciences and Chemical Technology, Pharmacy Student
[2]National Cancer Centre, Division of Supportive and Palliative Care, Pharmacy Student
[3]National Cancer Centre, Division of Supportive and Palliative Care, Medical Student
[4]National University Hospital, Division of Family Medicine, Resident
[5]National Cancer Centre, Division of Supportive and Palliative Care, Associate Professor

INTRODUCTION

Multi-disciplinary team (MDT) is defined as " [a] **group** of people of **different healthcare disciplines**, which **meets** together at a **given time** (whether physically in one place, or by video or teleconferencing) to discuss a **given patient** and who are each able to **contribute independently to the diagnostic and treatment decisions about the patient**." The benefit of utilizing MDTs in patient management is the **holistic approach** provided. However, **effective MDT communication is necessary** to ensure efficient patient management.

METHODOLOGY

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, **17 papers were selected**. The quality of the papers were then assessed using **COREQ and MERSQI.**

RESULTS

a.) Types of devices

Devices used to improve MDT communication are categorized into asynchronous and synchronous. **Asynchronous** devices **include paging and e-mails** whereas **synchronous** devices include **text messaging and video-conferencing.**

b.) Modalities

3 modalities were identified; **Structured educational programs (SEP), Stimulated scenario training (SST) and Experiential learning in clinical practice (ELC).**

- **SEP** includes programs such as **conferences, workshops, online training modules and tests**. The conferences and workshops are usually held **at durations of 15, 30 and 60 minutes** with a **minimum of 2 sessions**. **Hardcopy instructions** are usually provided during the sessions.
- **SST** sites are equipped **with visual recording** equipment such **as Zoom and Google Hangout**.
- **3** studies involved participants who are already experienced with using devices such as **electronic messaging system, video rounding and computer prescription order entry.**

c.) Development

SEP

- To ensure proper use of intervention tools, 24H support by trained nurse peer leaders were provided as well as a 1-week grace period before actual implementation

SST

- Scenario types were designed to model real medical emergencies in the operating theaters. The scenarios can be mannequin-based or standardized patient simulation.

ELC

- Intervention feedback is collected through observations and audio-recorded interviews

d.) Challenges

e.) Outcomes – Kirkpatrick Model

- Generally satisfied
- Improved team communication
- Improved appreciation
- Improved error-catching

CONCLUSION

- Features a list of **common interventions and training** methods
- Underscores **importance** and **complexity** of **improving** multidisciplinary **communication**
- With more studies done to test various interventions, it is the **hope of the educational community** that **optimizing communication** in healthcare ensures **more positive patient outcomes**

Using films to improve students' understanding of psychosocial aspects of medicine

Kadivar M, **Khabaz Mafinejad M**, Jannat Z
Department of Medical Education,Tehran University of Medical Sciences, Tehran, IR

Introduction

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.

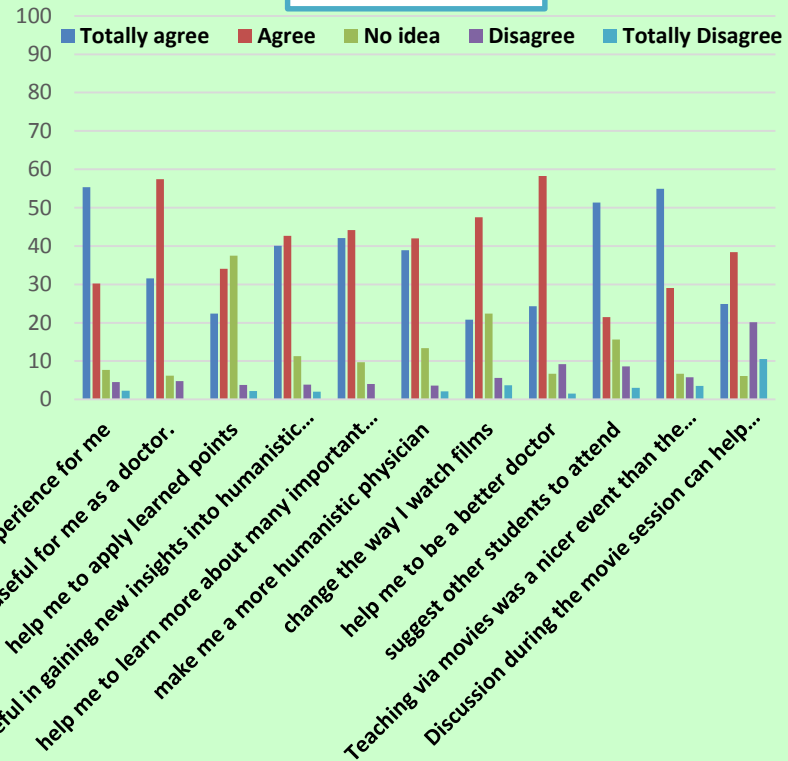
The aim of the study was the use of "cinemedicine" as a tool and technique in teaching psychosocial aspects of medicine to students at Tehran University of Medical Sciences.

Methodology

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 behaviors (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 program objectives. After the show, medicine related points of the film were discussed and analyzed by experts and students. In the end, questionnaires were distributed to assess the students' perceptions.

Chart



Results

Content analysis 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.

Applying Entrustable Professional Activities (EPAs) in Ad-hoc Assessment in Radiation Therapist Training.

Yang CW[1], Tsai SL[1], Chen YY[1], Chiu YC[1], Sheng WH[1]
[1]Department of Medical Education, National Taiwan University Hospital, Taiwan

Introduction

Entrustable Professional Activities (EPAs) and Observable Practice Activities (OPAs) were currently implemented in our training program of radiation therapists. This study was to explore the reliability of applying EPAs and OPAs in daily ad-hoc assessment of trainees' performance.




Methodology

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 α 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 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.

Video #	Cronbach's Alpha	Intra-class correlation coefficient (ICC)
1	0.821	0.919
2	0.855	0.876
3	0.915	0.908

Conclusion

With proper faculty training, EPAs and OPAs can be applied in ad-hoc assessment to provide reliable results.

Insights into Communication Deficiencies in Medical Oncology Training via a Simulated Patient-Family Workshop

Samuel GW OW[1,3], Beatrice NG[2], CHEE Cheng Ean[1,3]

[1]Department of Haematology-Oncology, National University Cancer Institute, Singapore; [2]Medical Affairs (Education), National University Hospital,
[3]Yong Loo Lin School of Medicine, National University of Singapore

Background

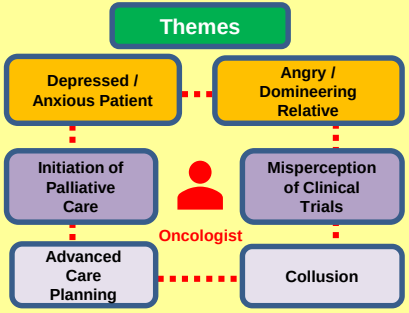
- Effective communication between oncologists and cancer patients is integral to forming a successful doctor-patient relationship
- Medical Oncology training is traditionally focused on building knowledge in cancer management but development of communication skills (CS) is lacking and is a gap which needs to be addressed

Objective / Aim

- A Simulated Patient-Family Workshop was designed to understand the adequacy of communication skills among 6 Senior Residents (SR) in a 3-year Medical Oncology Senior Residency Programme

Methodology

- The Workshop comprised 2 scenarios exploring various themes
  1. Palliative Care in a Patient with Terminal Pancreatic Cancer
  2. Clinical Trials in a Patient with Refractory Breast Cancer

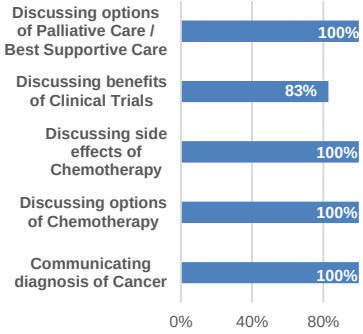


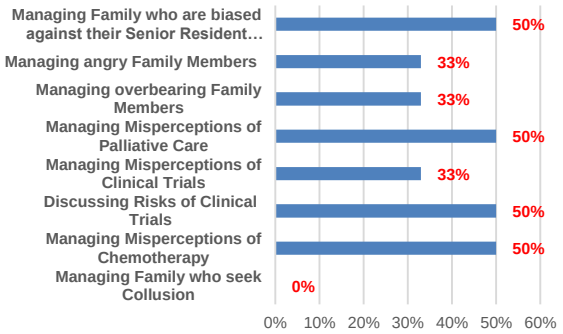
- 5-point Likert scale Surveys were administered post-workshop

Of 6 SRs (median 6y post-graduation),
- 67% had prior CS training
- 50% had experience in Role Play

Results

% SRs indicating Comfortable (C) / Very Comfortable (VC) in Communicating the Following Topics





- Critical Deficiencies in CS identified: Managing the angry Family Member, Misperceptions of Clinical Trials, & Family Members who seek Collusion
- 100% of SRs indicated the Workshop was useful and having both Simulated Patient & Family Member increased the realism of the exercise
- 67% opined CS training should be in the first 2 years of Senior Residency
- Topics highlighted for future Workshops include Collusion, Clinical Trials and Breaking Bad News

Conclusion

- A Simulated Patient-Family workshop revealed Critical Deficiencies which can impact patient care
- Early CS training should be integrated into the Medical Oncology SR program.

Identifying the Ideal Features of the Gifted Program for the Undergraduate Medical Education: A Student Perspective

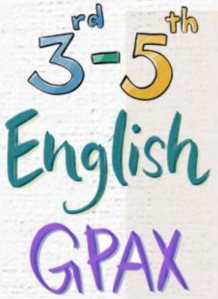
S Techavoranant, T Rianpairoj, T Pataradool, N Srithawatpong, C Udomsub, K Jongmekwamsuk, D Wangsaturaka, MD PhD
Faculty of Medicine, Chulalongkorn University, THAILAND

Background

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 program from the perspective of undergraduate medical students.

Methodology

The project was IRB-approved.



Target population was year 3-5 Chulalongkorn medical students who were competent English users and had high GPAX.

Semi-structured interviews were conducted until data was saturated.

Audio recordings were transcribed verbatim and subsequently coded using Dovetail web application.

Results

Data was saturated after forty-seven participants were interviewed.
Seventeen features were identified and then categorized into five themes.

Mentor
Inspiring
Adequate
Dedicated
Supportive
Experienced
Approachable

Learning Experience
Specific
Authentic
Basic skills
Cooperative

Time
Flexible
Preotected time

Outcome
Explicit
Personalized

Support
Funding
Scholarship
From senior students

Conclusion

A program 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 program management & support. Mentorship is, undoubtedly, a crucial part of this curriculum.

Reference
Harden RM (2018) Ten key features of the future medical school–not an impossible dream. *Medical Teacher* 40(10): 1010-5.

Illustrated by Napat Soonthornchat and Salisa Kongpanyakul

Improving rheumatologists' confidence and knowledge of musculoskeletal anatomy through combined ultrasound and cadaveric dissection

Manghani MK[1], Cheung PP[2], Chew LC[3], Prakash A[4], Mogali SR[5]

1. Department of Rheumatology, Allergy and Immunology, Tan Tock Seng Hospital, Singapore
2. Division of Rheumatology, National University Hospital, Singapore
3. Department of Rheumatology and Immunology, Singapore General Hospital, Singapore
4. Diagnostic Radiology, Tan Tock Seng Hospital, Singapore
5. Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Introduction

There is substantial evidence suggesting that musculoskeletal (MSK) examination is taught superficially, and 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.

Aim: This study aimed to evaluate the effectiveness of teaching anatomy to rheumatologists in Singapore, using a training course combining musculoskeletal sonoanatomy with human cadaveric dissection.

Methodology

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

	Confidence in identifying surface anatomy of joints		Confidence in performing intra-articular injections		Confidence in recognising sonoanatomical structures	
Group	Before	After	Before	After	Before	After
Mean	6.54	8.38	7.15	8.69	6.54	8.31
SD	2.15	1.19	1.73	0.95	1.76	0.86
SEM	0.60	0.33	0.48	0.26	0.49	0.24
N	13	13	13	13	13	13

Results

List of anatomical and sonoanatomical knowledge items answered correctly during the pre and post course quiz.

	Pre-course (N = 15)		Post-workshop (N = 15)		p-value
	#	%	#	%	
Iliotibial band	6	40	11	73	0.180
Pes anserinus	7	47	14	93	0.016
Carpal tunnel boundaries	11	73	14	93	0.250
Flexor wrist tendons	11	73	14	93	0.250
Coracohumeral Ligament	2	13	11	73	0.004
Superior Glenohumeral Ligament	2	13	8	53	0.031
Extensor tendons II	9	60	10	67	1.000
Extensor Tendons V	9	60	15	100	-
Extensor Tendons VI	11	73	15	100	-
Volar plates	5	33	7	47	0.687
AITFL	3	20	9	60	0.031
Anterior Tibiofibular Ligament	11	73	11	73	1.000
Soleus	4	27`	14	93	0.002
Achilles tendon	15	100	14	93	-
Retrocalacaneus bursa	10	67	14	93	0.125
Kager Fat Pad	9	60	13	87	0.125

Conclusion

Combining ultrasound and cadaveric dissection demonstrated positive outcomes in learners satisfaction, confidence and knowledge especially in regions where MSK complaints are common (shoulder and knee). There is 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 a good grounding in anatomy. This leads to accurate early diagnosis and cost conscious, effective and better overall care.

Inter-Professional Education National Institute Health Stroke Scale (NIHSS) Training Using Off-site Simulation Approach

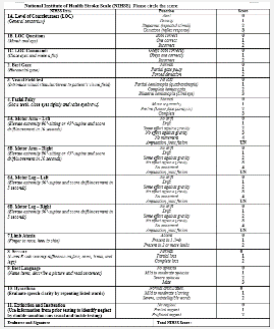
I. F., Tan[1], L, Fu[1,] D.A., DeSilva[2], S. R., Fam[1], W. M., Ng[1]

[1]Department of Neuroscience Nursing, National Neuroscience Institute, Singapore, [2] Department of Neurology, National Neuroscience Institute, Singapore

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.

METHODS

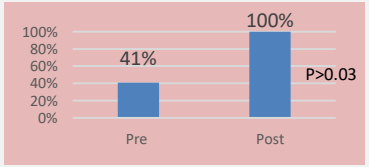


AIMS

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.

RESULTS

There were 5 doctors and 12 nurses who participated in the teaching session. Overall, there is a significant improvement 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.



Self-rated knowledge & skills as "good" to "very good"

	Pre-workshop	Post-workshop
Mean Score	3.53	4.53
Std. Deviation	1.125	.514

Participants' knowledge pre-post workshop

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 pediatric residency program, Qatar

Manasik Hassan, Ahmed Eltayeb , Mohamed Al hajjaji , Alanoud Al Ansari , Ahmed Al Hammadi

AIM

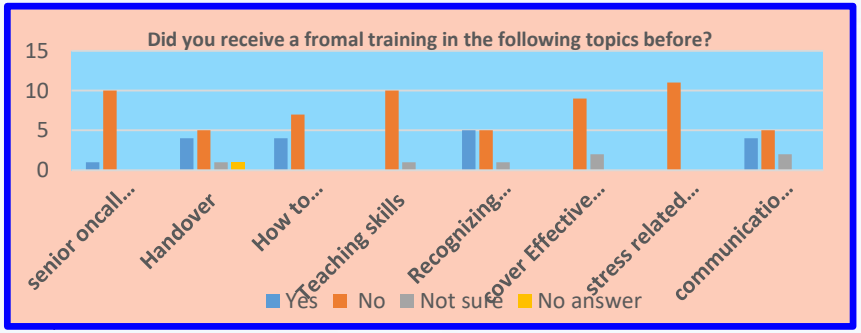
Transitioning into a senior resident is represents a challenge in any residency program. Prior to undertaking their new responsibilities, residents need an organized skilled preparation to overcome struggles that may appear. Formal training session for the new senior residents is an excellent method to enhance their skills and easiness their new senior resident life. Our aim was to explore important themes needed in the new senior residents and to identify the topics that covered in the orientation workshop

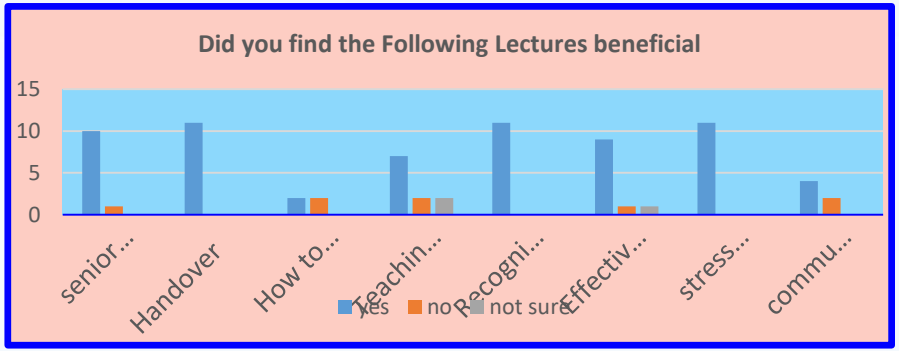
Methods

Cross-sectional prospective study conducted among pediatric senior residents at Sidra medicine in Qatar July 2019.The evaluation survey was paper based pre and post senior workshop orientation .it included all new senior residents in the pediatric program with details of demographics, their perception about training before starting seniority, and the important topics covered in the orientation and their beneficial.

Result

Total 12/15 (80%) of the new senior pediatric resident 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, Recognizing sick patient, cover Effective presentations, stress related to leadership and communication and consultations. A new orientation workshop based on ACGME core competency organized by the residency program in which 12(100%) of the resident stated that 6 out 8 topics covered fully in the orientation workshop except of How to approach senior staff (PEC/PICU) communication and consultations were covered on another date. Up on analyzing the beneficial of the topics were given: 12(100 %) stated that handover, senior on call rules and duties, recognizing sick patients and stress related to leader ship were beneficial however 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 organized and overall rating for the day was ranging between 4 (very good) out of 5and 5 (excellent) out 5.





Conclusion

The study showed none of the senior had formal training before seniority, new additional workshop by the program 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 program 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 smoothing their 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 t the new senior residents life.

MRI-BASED RECONSTRUCTION MODELS OF HUMAN BRAIN INTRIGUE LEARNING

Chien NL[1], Truong DT[1], Dong TQ[1], Anh TH[1]
[1]Department of Physiology, Vietnam Military Medical University

Introduction

Struct. and func. models of human brain are indispensable media that accompany with teaching/learning in anatomy and physiology, especially for the central nervous system.

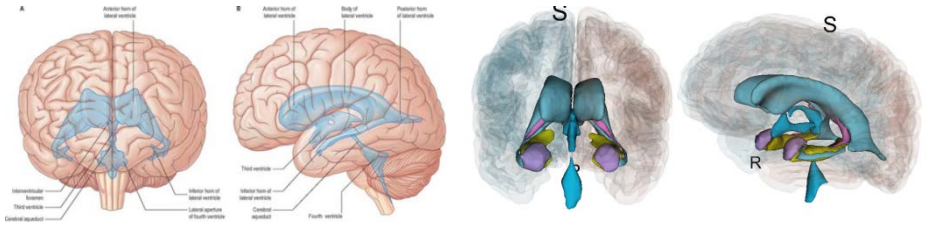
Seldom traditional models, however, could illustrate deep and small cerebral structures.

This study evaluated the retention and interest from learners with a lecture on important brain structs. using MRI-based human brain reconstruction models in comparison with similar learning activities in learners who experienced the lecture using traditional models.

Methodology

- 60 med. sophomores, who would attend a lecture on limbic and ventricular systems, had been recruited into the study.
- Subjects - randomly bisected into the control group (lecture with traditional media, including drawings and 2D images); and the test group (lecture with MRI-based human brain reconstruction 3D models and 3D images).
- Retention and understandings of learners about struct. and func. of limbic and ventricular systems had been scored. The degree of interesting with the lecture had been themselves-estimated.

Results



Control group **Test group**

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 and 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.

EQUIPping an Academic Medical Centre with a Sustainable Clinician QI Capability. Developed for the Clinicians. By the Clinicians.

Dr Poon Keah How[3], Dr Diana Santos[1], Dr Sandhya Mujumdar[1], Dr Chinnadurai Amutha[2], A/Prof Sophia Ang[3], Dr Anita Lim[4], Dr Chai Ping[5], Dr Yvonne Ng[2], Dr Lim Li Lin[6], Dr Amelia Santosa[4], Dr Francis Ho[7], Dr Sangeetha Guruvayurappan[1] and Prof Quek Swee Chye (Advisor)[8]

[1]Medical Affairs-Clinical Governance, [2]Neonatology, [3]Anaesthesia, [4]Rheumatology, [5]Cardiac, [6]Gastroenterology & Hepatology, [7]Radiation Oncology, [8]Paediatrics and NUH Chairman Medical Board

Introduction

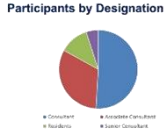
National University Hospital (NUH), an Academic Medical Centre in Singapore, had integrated QI project completion in clinical career milestones. EQUIP (Enabling Quality Improvement in Clinical Practice) was developed to teach NUH doctors as well as to develop QI faculty, with the view to support the National University Heath System (NUHS) cluster's QI training needs in the future.

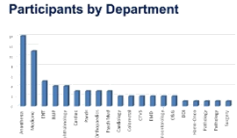
Methodology

EQUIP's goal was to identify, plan and execute improvement projects 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. Leadership support is evident with strict nomination and project approval by the Head of Department.. 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 needle stick injuries, unnecessary prolonged fasting before surgery, reducing radiation exposure), compliance to best practices Overall content grading showed an average of 94% good to excellent rate with very favorable verbatims.





Conclusion

MOH 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 program 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 NCCAOM REQUIREMENT IN THE U.S: A COMPARATIVE STUDY

Regzedmaa D [1], Usukhbayar M [2], Bayarbat G [2], Oyungoo B[2], Tserendagva D[1]

[1] International School of Mongolian Medicine, [2] Division for Educational Policy and Management, Mongolian National University of Medical Sciences

Introduction

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) at MNUMS has become eligible for NCCAOM certification. Therefore, the authors aimed to asses and compare ISMM current curriculum with that of NCCAOM requirements to further increase chances of ISMM graduates to become full-fledged NCCAOM certified practitioners and whether there are any room for improvements in ISMM, curriculum.

Methodology

Momentary descriptive analytic method was used to compare eligibility requirements of the National Certification Commission for Acupuncture and Oriental Medicine to Traditional Medicine degree curriculum of International School of Mongolian Medicine, Mongolian National University of Mongolian Medicine in Mongolia.

Results

While ISMM curriculum adequately fulfills overall NCCAOM requirements, there are several areas where ISMM program 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 standard. 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 requirement. What ISMM curriculum lacks is in the area of Herbology; 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 will bring current ISMM curriculum in 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 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 staff on organ donation

Teo SY, Seah GLA, Ho PY, Seto Y-EJ, Koh YWM, Soh JK, Lim SY, Lee SCJ
SingHealth Duke-NUS Transplant Centre, SingHealth, Singapore

SingHealth DukeNUS ACADEMIC MEDICAL CENTRE
Transplant Centre

Introduction

- Education on organ donation improves not only knowledge but also the attitudes towards organ donation
- The SingHealth Duke-NUS Transplant Centre proactively conducts transplant awareness talks to internal staff
- Aims to increase knowledge, correct misconceptions, and foster positive attitude towards organ donation
- However, the outcome of such talks has not been evaluated

Methodology

- Retrospective cross-sectional study
- Quantitative survey to assess the knowledge and attitude of internal staff towards organ donation
- Internal staff include: doctors, nurses, allied health professionals (AHP), administrators, and ancillary personnel
- Results of 2356 participants who did not attend the awareness talk were compared with 2440 participants who attended the talk
- Quantitative analysis was performed using chi-square test

Conclusion

- Transplant awareness talk is useful in improving the knowledge and attitude of SingHealth's staff on organ donation
- Targeted education effort on organ donation is needed for nurses

Results

Table 1: Knowledge and attitude of internal staff towards organ donation

Participants who	Did not attend	Attended	*P*-Value
1. Answered correctly on the organs/ tissue covered under HOTA	1097 (46.6)	1753 (71.8)	<0.001
2. Answered correctly on the HOTA scheme	1086 (46.1)	1599 (65.5)	<0.001
3. Answered correctly on brain death	1946 (82.6)	2092 (85.7)	0.003
4. Answered correctly on MTERA	1388 (58.9)	2095 (85.9)	<0.001
5. Answered correctly on open casket funeral	1211 (51.4)	2203 (90.3)	<0.001
6. Were supportive of organ donation	1662 (70.6)	1921 (78.7)	<0.001

Values are expressed as *n* (%).
HOTA, Human Organ Transplant Act; MTERA, Medical (Therapy, Education and Research) Act

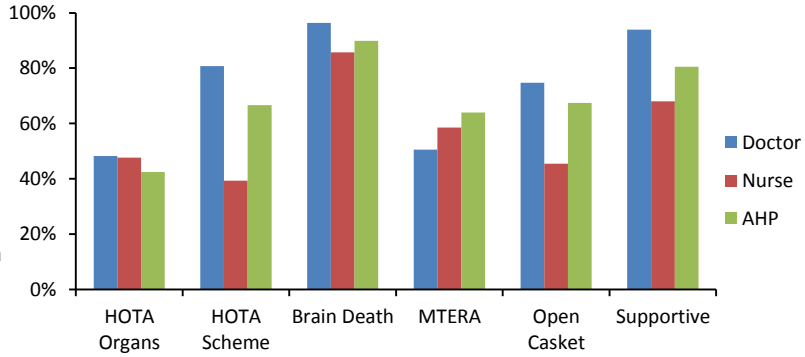


Figure 1: Percentage of healthcare professionals who answered correctly and supportive of organ donation among those who did not attend the talk

REDUCING STRESS AND BURNOUT AMONG SPEECH THERAPISTS - THE 3 GOOD THINGS EXERCISE

Ko, S., Lim, M.
Speech Therapy Department, Tan Tock Seng Hospital, Singapore

Introduction

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.

Methodology

All speech therapists in the department were invited to participate in this study 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 as a baseline score: 1. Brief Resilience Scale (BRS). 2. Steen's Happiness Index (SHI) During the entire exercise, nightly text messages were sent to participants as a reminder to complete the '3 Good Things' exercise. 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, and at 1 month post.

Results

	Baseline (N=34)	Baseline (N=25) – participants who dropped out)	Baseline (N=9) – participants who completed the full exercise
BRS	3.16	3.08	3.42
SHI	54.3	52.7	59.7

N=9	Initial	15 Days	1 Month
BRS	3.42	3.32	3.50
SHI	59.7	61.3	59.3

- Total number of participants = 34. Baseline BRS mean score = 3.16, indicative of normal resilience. Baseline SHI mean score = 54.3 (young adults with similar age demographics SHI score 60.6; people with clinically significant levels of depressive symptoms SHI score 55).
- Baseline mean scores of those who dropped out (N=25) were lower than those who completed the full exercise (N=9).
- No significant difference in BRS (p value=0.98) or SHI scores (p value=0.18) pre and immediately post intervention at day 15 for the 9 participants.
- Happiness scores declined while resilience scores improved 1 month after the completion of the exercise. There were significant differences in SHI scores (p value = 0.04) and BRS scores (p value = 0.02) at 1 month and at 15 days.

Conclusion

High levels of stress can result in lower happiness scores. Adequate resilience may act as a defence mechanism against burnout, but may not be enough in the long term. '3 Good Things' exercise is simple to administer, but it appears challenging to comply with 14 days of exercise and improvements in happiness was not sustained after 1 month. It also appears that resilience levels may not be directly impacted by this exercise and future studies could explore ways to strengthen resilience.

The faculty development program of ethical sensitivity teaching in medical schools

Hou-Chang Chiu, M. D.1, Gin-Hong Lee, Ph. D2, Ting-Chun Chen, M. Ed. 2
1. Department of Neurology, Fu Jen Catholic University Hospital, Taipei, Taiwan
2. Department of Clinical Psychology, Fu-Jen Catholic University, Taipei, Taiwan

Introduction

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 program 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.

Methodology

The instrument development was divided into two 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 "behavior consequences imagination".

Results

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.

The result showed that: (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 program 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's Soft Skill Through CFHC-IPE

Lastdes Cristiany Friday[1,2], Nandyan N Wilastonegoro[2], Gande Retno Rahayu[2,3], Ova Emilia[2,3], Widyandana[2,3]
[2]Community and Family Health Care-Interprofessional Education, Faculty of Medicine, Public Health and Nursing, UGM

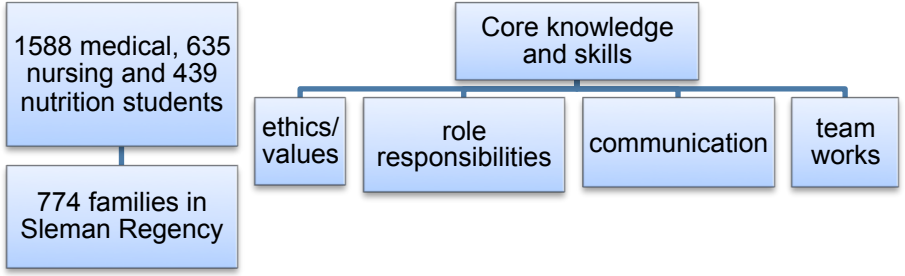
Introduction

Since 2013, we have implemented CFHC-IPE program at Faculty of Medicine, Public Health and Nursing, UGM for our undergraduate students. We set up a seven semesters' field program attaching our students to three families in a group of five. As the intra competencies increases, we set objective of each program 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.

Methodology

This was an implementation study of the CFHC-IPE program. The program 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

Results



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.

Conclusion

As expected, the students are growing and taking lesson learnt through the program. 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

EXPLORING THE USE OF ROBOTIC PROCESS AUTOMATION IN DEANERY AUDIT PROCEDURES

Canny LH Chow[1], Mei Mei Lim[1], Dujeepa D. Samarasekera[2], Tang Ching Lau[3]
[1]Education Division, Dean's Office, Yong Loo Lin School of Medicine, National University of Singapore
[2] Centre for Medical Education, Yong Loo Lin School of Medicine, National University of Singapore
[3]Department of Medicine, National University Health System, Singapore

NUS National University of Singapore | Yong Loo Lin School of Medicine

Background

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 Times 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.

Methodology

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.

Conclusion

RPA has allowed the NUS Medicine to increase the efficiency of critical key processes, boost staff engagement, and improve student experience.

Results

6
Processes automated

1.2K
Hours of labor saved annually

Zero
Errors

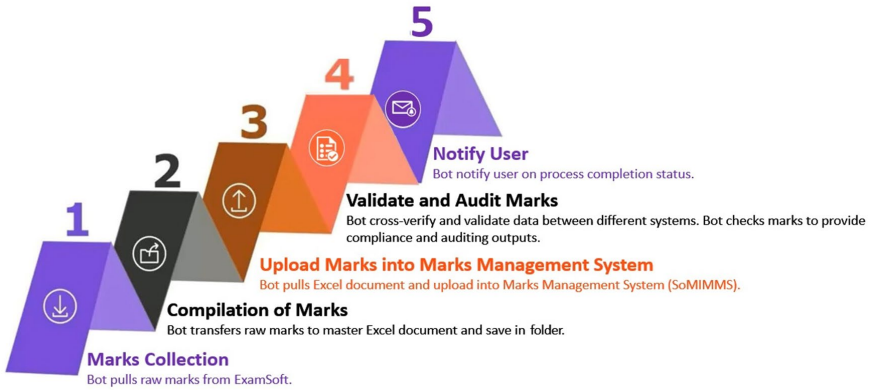


Figure 1: Automation of Marks Management Process Summary

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 system s 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.

Medical Students' Encounter of Death and Dying - A Scoping Review

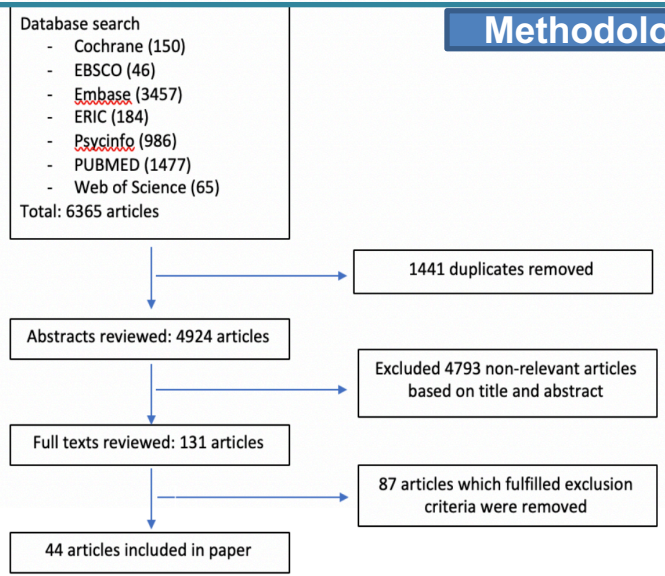
Chia CHJ[1], Ho CY[1], Loh WKV[2], Krishna LKR[1, 3, 4], Toh YP[2]

[1]*Yong Loo Lin School of Medicine, National University of Singapore,* [2] *Department of Family Medicine, National University Hospital*
[3]*Division of Supportive and Palliative Care, National Cancer Centre Singapore,* [4]*Duke-NUS Graduate Medical School, Singapore*

Introduction

- **Facing death and terminal illness is unavoidable** for physicians and medical students
- Physicians frequently encountering death grapple with **death anxiety, compassion fatigue and burnout**.
- Medical students need to cultivate **resilience** in facing death.
- To better support students and nurture resilience
- **This scoping review aims to understand the impact of a patient death on medical students**

Methodology



Results

Open coding independently by two authors & thematic analysis carried out and final themes arrived through multiple discussions to achieve consensus.

Reactions

Anger
Sadness
Helplessness
Guilt/ Failure
Overwhelmed
Relief
Satisfaction
Inspired
Humbled

Coping strategies

Detachment
Avoidance
Self-reflection
Talking to others
Turning to religion

Impact on personal relationships

Recalled death of a loved one
Related experience to own family members

Impact on attitudes

Confronted with own mortality
Associate death with failure
Death as natural progression
Death in inherent in medicine

Effect on professional relationships

Emotionally challenging interaction with patient
Learnt to care for / support patient's family
Struggled if lacking guidance from clinicians
Good experience when supported by superiors

Conclusion

1. Encounters medical students experience with dying patients have a significant impact on their well being

2. Support and guidance from superiors and faculty are associated with resilience

3. There is a need to look into intervention to equip students with resilience in caring for dying patients

THE TIES THAT BIND

Ong CP[1], Zhu SQ[1], Ong DSL[2], Toh YP[1]
[1]Family Medicine, National University Health System, Singapore, [2] Family Medicine, National University Polyclinics, Singapore

Introduction

Family Medicine training is broad-based and far-flung:
- **Multiple quick rotations in hospital medicine**
- **Eventual practice in primary care**

Ingredients for FM success:
- **Contextualization**
- **Integration**
- **Discussion, reflection, support**

Methodology

WhatsApp chat groups
- **Common interest or supervisor**
- **Over the academic year**

What do we chat about?
- **Topics from clinical encounters – updates**
- **Interesting cases – discussion and contextualization**
- **Current ethics or professionalism issues**

Results

Potential Pitfalls!
- **"Uptodate" type of updates**
- **Waning participation over the year**
- **Imbalance of power**
- **Quality of facilitation and engagement**
- **Range of topics: the limits of serendipity**

Bear these in mind:
- **Tone and culture – group norms, ground rules**
- **Topic selection and wise questioning**
- **Length of contributions vs. reader fatigue**
- **The informal curriculum**
- **Keep an academic focus**

Conclusion

Extending the physical small group

Contextualization and integration vs. logistics

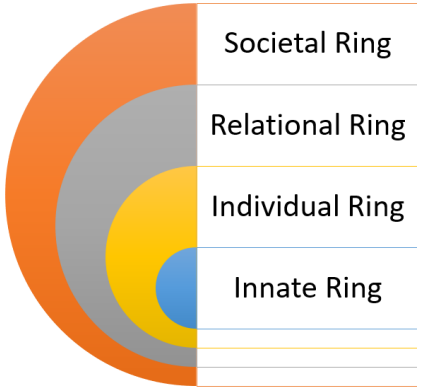
Role modeling, mentoring, development of camaraderie, emotional support…

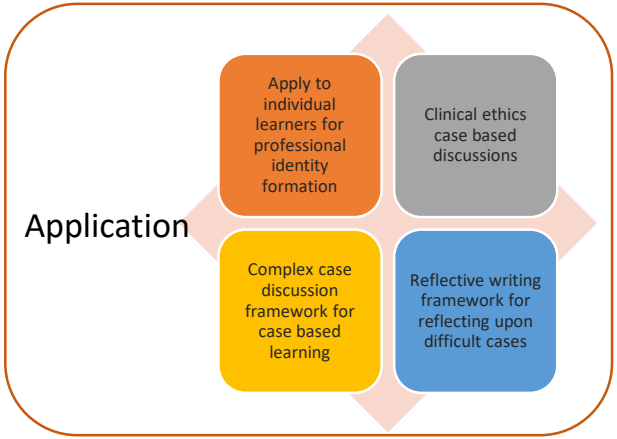
A NOVEL EDUCATIONAL TOOL FOR TEACHING PERSON-CENTRED CARE

Lalit Kumar Radha Krishna[1,2], Toh Ying Pin[3]
[1]Duke-NUS Medical School, [2]National Cancer Centre Singapore, [3]National University Hospital Singapore

Introduction:

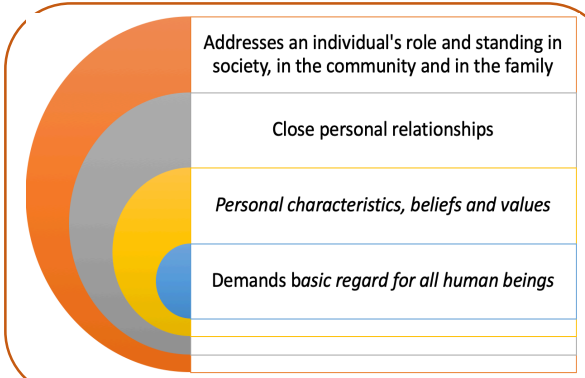
- There an increasing call for the development teaching methods to cultivate humanistic person-centered care attitudes which are context and culturally sensitive, in the community-centric societies
- We propose the locally developed Ring Theory of Personhood (RToP) Tool for application as a novel easy to use tool in medical eduation





Ring Theory of Personhood tool

- A Personhood model developed through local mixed-methods study involving 140 oncology patients
- Studying the concept of personhood in local multi-cultural, multi-racial, multi-religious setting
- Semi-structured interviews and Bishop Merril's 'Defining Personhoo' questionnaire



Future developments

- E-learning application
- RToP as a learner-centered tool for coaching & mentoring
- History-taking tool for appropriate settings
- Education in clinical ethics

Comparing residents of internal and external employment with multi-source feedback (MSF): the experience from Cathay General Hospital

Shu-Chen Chen[1], Heng-Hui Lien[1,2] , Tien-Shang Huang[1]

[1]*Department of Medical Education, Cathay General Hospital, Taipei, Taiwan*

[2]*School of Medicine, Fu-Jen Catholic University, New Taipei City, Taiwan*

Introduction

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

Reyes, M.L.,[1], Mendoza, S.M.[2],Magat, M.U.[3], Alba, A.A.[4], Donato, C.C.[5], Reportoso, C.C[6]
Department of Biochemistry, UERMMMCI, Philippines

INTRODUCTION

> Student portfolios as an alternative learning strategy have been utilized by various medical institutions for more than a decade. The challenge for educators is how to make this approach acceptable and also comprehensible to both professors and students alike, who are more accustomed to traditional forms of learning & assessment.

> For the past 7 years, portfolio surveys were conducted among students to gauge if such activities facilitated student appreciation for lifelong reflective learning.

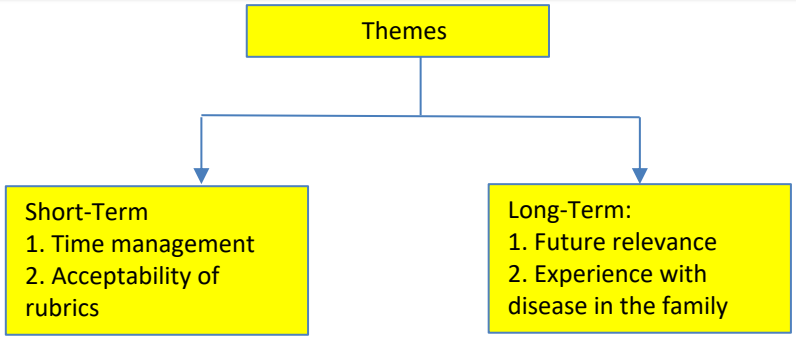
METHODOLOGY

> Student portfolio survey responses were analyzed and examined in the **light of narrative reflections or responses that are given as additional comments in the questionnaires.**

>Several items in the questionnaires also included student attitudes toward learning, and if the portfolio making was considered as useful or detrimental to their learning process

> Frequent responses or terms that figured in the narrative comments were also evaluated by thematic analysis or grouping.

RESULTS



Short term areas of concern were more predominant : time management of students, acceptability of the g**rading rubrics, comprehension of the learning objectives, and the manner by which students are evaluated (subjectivity of grades). Some students expressed appreciation for** the portfolio in their narrative reflections.

CONCLUSIONS

Implementation of student portfolios in our curriculum has met with mixed **success, but there is an increasing trend in more recent years for the approach to become more acceptable to students. This could be a consequence of the gradual evolution of outcome-based education and its level of acceptability in our local setting.**

Project HOPE – Simulation-Based Workshop for House Officers On-Call to Improve Confidence and Competence

Yee JX[1], Hoe R[1], Hong R[1], Teng A[1], Kee XLJ[1]

[1] Department of Internal Medicine, Singapore General Hospital, Singapore

Introduction

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 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).

Methodology

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 to 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 knowledge-based questionnaires pre and post workshop in our next workshop the later part of 2019 to see if there is objective improvement Through these interventions, it is hoped that the transition from medical student to HO can become smoother one.

RIPLE Effects: Reverberating Educational Outcomes from an Overseas Community Involvement Programme

Lim J[1], Tan K[2]

[1]Nursing Service, Tan Tock Seng Hospital; [2]Department of Neurology, National Neuroscience Institute, Singapore

Tan Tock Seng Hospital
National Healthcare Group

Background

Since 2015, a team of doctors, nurses and pharmacist have been volunteering yearly at Mae Tao Clinic (MTC), a community-based organisation 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.

Objectives

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 healthcare team consists of physicians, senior nurses and a pharmacist. During the attachment, the physicians and nurses worked with the MTC healthcare team who are known as medics to provide patient care. The medical students and APNIs joined different healthcare teams in the inpatient and outpatient settings.

The learners practiced history taking and conducted physical examination on patients, many of whom had clinical conditions and signs that they would not have encountered 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.

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.

Bridging Teaching and Research through a Biomedical Transdisciplinary Team Project Common Core Course

Mei Li KHONG[1], Julian Alexander TANNER[1]
[1]School of Biomedical Sciences, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong SAR, China

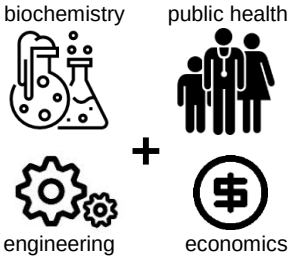
INTRODUCTION

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'

We address these aims by developing a teaching-research nexus through a biomedical transdisciplinary team project (TTP) common core course

METHODOLOGY

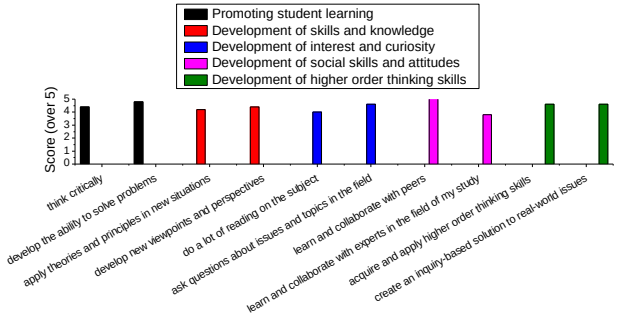
Design of TTP:
This student-led TTP brings together students from different disciplines to work on a project with potential for impact in wider societal concerns. Within the team, some students are engaged in direct research, others in service work, knowledge exchange with community, or building local and international collaborations.



Evaluation Methods:
Quantitative & qualitative evaluation through perception questionnaire, and measure of impact from students' project output.

RESULTS

Representative Quantitative Data:
Likert-scale questionnaire (1: strongly disagree – 5: strongly agree). Students perceived that TTP encouraged / enabled them to:



Qualitative Data:
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 labor**; all of which enabled the following student achievements

Students' Project Output:
Students investigated public's awareness of Hepatitis C. They also developed a cost-effective & rapid 3D-printed diagnostics for HepC early detection. Findings were communicated through **conferences**, education **workshops**, academic **publication** & **website**.

A research-teaching nexus promotes learning in the highest cognitive domain

Reducing duration of in-house calls for residents to improve mental well-being – a pilot study in the Hematology – Oncology Department

Winnie ZY Teo[1], Hon Lyn Tan[1], Nesaretnam Barr Kumarakulasinghe[1], Michelle LM Poon[1], Joanne SX Lee [1]
[1] Department of Hematology-Oncology, National University Cancer Institute, Singapore

NUHS National University Health System

Introduction

Junior residents rotating through hematology-oncology (HO) posting in National University Hospital (NUH) are 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.

Methodology

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 – 730pm) 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

Implementing changes to busy call schedules can be a challenge in tertiary hospitals with increasing workload, but it should nonetheless be a priority to optimize mental well-being and productivity of residents.

Mahidol University
Faculty of Medicine
Siriraj Hospital

Comparisons of educational factors between students who changed and did not change their VARK learning style from the 1st to the 2nd preclinical year

Vasu Lertsiripatarajit[1], Chantacha Sitticharoon[1]*, Punyapat Maprapho[2], Issarawan Keadkraichaiwat[1], Nipith Charoenngam[3], Pailin Maikaew[1]
[1]Department of Physiology, [2]Department of Medical education, [3]Department of Internal Medicine,
Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Introduction

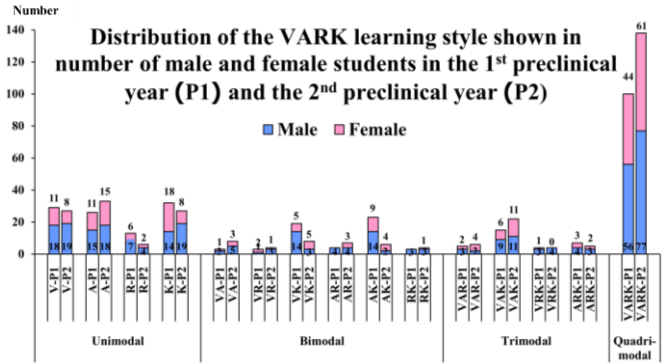
VARK, visual(V)-auditory(A)-reading/writing(R)-kinesthetic(K), is one of the most used learning style models. This study aimed to 1) determine changes of the VARK learning style from the 1st (P1) to the 2nd (P2) preclinical year and 2) compare academic factors and stress level between students who changed and did not change their learning style.

Methodology

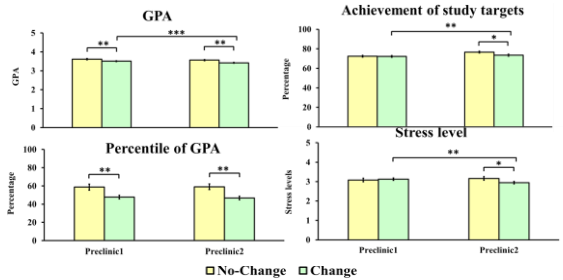
The study questionnaire and VARK questionnaire version 7.8 were sent to students at the end of P1 and P2 with 87.20% (286/328) and 92.99% (305/328) being returned, respectively. Students who changed and did not change their learning preference from P1 to P2 were allocated into 2 groups, the “change” (69.3%) and “no-change” (30.7%) groups, respectively.

Results

Most students were multimodal learners (65.03% in P1 and 69.51% in P2).



For the mean VARK score, K was highest followed by V, A, and R, respectively, in P1 while V was highest followed by K, A, and R, respectively in P2.



Data are shown as mean (S.E.M.), *p < 0.05 **p < 0.01, ***p < 0.001 compared between groups.

Conclusion

Most students changed their learning style from P1 to P2. Students who did not change their learning style had a better academic outcome and ability to maintain their achievement of study goals than students who changed. Students who changed their learning style had lower stress level compared to theirs in the previous year. Thus, students who changed their learning style might need to adapt to the new skill leading to lower academic capability but be less stressful while using a new learning style.

Lessons on Resilience: Learning from Paediatric Critical Care Nurses

Khoo MSQ[1], Lim GEY[1], Dong YH2, Krishna L[3], Toh YP[4]

1 National University of Singapore, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 2 National Cancer Centre Singapore, Singapore 3 Department of Family Medicine, National University Hospital, National University of Singapore, Singapore

Introduction

Caring for dying children in NICU and PICU takes an immense emotional toll on nurses as they provide round-the-clock care for critically ill children and build a professional relationship with their families.

Nurses have demonstrated resilience in a clinically demanding setting which allow them to both adapt and find satisfaction in their work.

Methodology

Objectives: To determine what factors have been reported on how nurses cope in NICU and PICU, to identify key factors accounting for resilience and derive lessons

Databases

PubMed | Embase | ERIC | CINAHL | PsycINFO | Cochrane Library

Inclusion criteria

- Nurses
- Dying patients in ICU
- Emotional outcomes and Behavioural changes

Exclusion criteria

- Other healthcare professionals
- Systemic and literature reviews

9148 titles retrieved from databases → 105 full texts evaluated for inclusion → 49 papers for independent analysis

Results

Nurses were found to have developed coping strategies to deal with stress, grief, burnout, moral distress, compassion fatigue and hence achieve resilience.

Key Lessons Identified

- Peer support is the most crucial influence when coping with emotional hardship .
- Grief must be embraced as part of the human experience in order to overcome it.
- Professional boundaries between the nurse and the patient's family need to be identified early on.
- Adverse patient outcomes result when nurses face distress or do not participate in decision-making.

Conclusion

Resilient nurses have been shown to contribute to patient care and their participation improves outcomes. These findings may serve to inform the development of an effective resilience building program for not only medical students, but all healthcare professionals, form recommendations on self-improvement strategies to improve resilience among medical students and identify those who may be at risk of adverse emotional outcomes.

RESIDENTS AS EDUCATORS IN THE BASIC SUTURING SKILLS TRAINING: IMPACT AND CHALLANGES

Zaw Lwin [1], Sashikumar Ganapathy [1]
[1]Department of Emergency Medicine, KK Women's and Children's Hospital, Singapore

Introduction

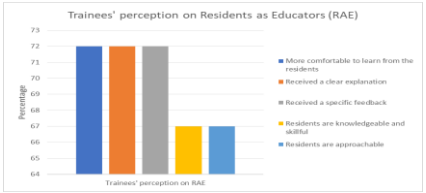
- The four-component instructional design (4C/ID) methodology adopted for use in the basic suturing skills training for medical officers.
- Crucial role of the facilitators to provide just-in-time (JIT) information
- The senior residents play the role of educators in the demonstration of skills and provision of corrective feedback to trainees.
- This study aimed to explore the impact and challenges of RAE in basic suturing skills training.

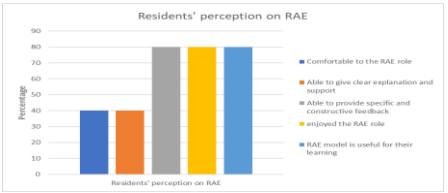
Methodology

- The survey was conducted after a 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 and an option for qualitative input.
- **The perception of the senior residents** on their roles as educators in the practice session was also assessed by using the another questionnaire with five points Likert scale.
- The free text comments and reflection of the trainees and that of the educators were also evaluated.

Results

Response rate : Trainees (82%), Educators (71%)





Challenges
- Being a good role model
- Ensuring a clear explanation in the procedural skills

Conclusion

- Significant positive pedagogical impacts to both the trainees and the educators
- Further training of the RAE is essential to overcome the challenges.

Application of the mini-CEX in clerkship formative assessment at 5 UMPs in Vietnam

Tran Thong V[3,4], Duong David B[1,2,4], Le Bao N[3,4], Nguyen Trung Q[3,4], Osman, Nora Y[1.2.4]

[1]Harvard Medical School; [2]Brigham and Women's Hospital; [3]Beth Israel Deaconess Medical Center, Boston, USA; [4]HAIVN in VN

Introduction

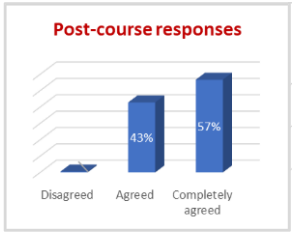
Mini Clinical Evaluation Exercise (mini-CEX) is a widely-used instrument that allows faculty to observe and assess the performance of learners in specific clinical domains. This study examined the process of applying the mini-CEX in 5 Vietnamese universities of medicine and pharmacy (UMPs) as one element of a comprehensive redesign of undergraduate medical education, assessment and feedback.

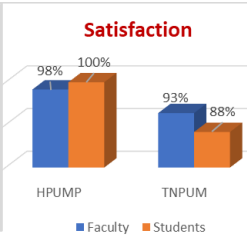
Methodology

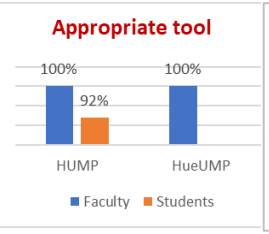
The implementation of the mini-CEX occurred in three phases.

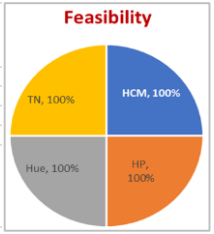
+ **Phase one**: Harvard Medical School (HMS) faculty trained 52 core clinical faculty of 5 UMPs to use the mini-CEX and related tools at a 3-day clinical education reform workshop.
+ **Phase two**: these trained faculty disseminated this approach to 240 faculty members to test the application of the mini-CEX using the plan-do-study-act (PDSA) cycle.
+ **Phase three:** 4 UMPs presented their mini-projects on mini-CEX implementation. This structured feedback session allowed faculty to share ideas and solicit comments from each other and HMS experts to revise their implementation plans at their own institutions. 50 faculty and 201 students participated in the mini-projects.

Results









The results showed consistent satisfaction among participants. There were also consistent challenges in applying mini CEX 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, 4 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 before the clinical course, and to advocate for ongoing UMP's commitment and systemization of the application of mini-CEX.

HOW STUDENTS EXPERIENCE INTEGRATION AND PERCEIVE DEVELOPMENT OF THE ABILITY TO INTEGRATE LEARNING

Dr Shalote Chipamaunga[1], Prof Detlef Prozesky[2]

[1]Department of Health Professions Education, University of Zimbabwe, [2] Department of Medical Education, University of Botswana

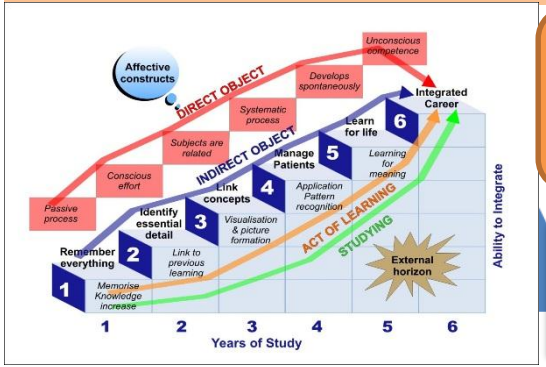
Introduction

One of the cornerstones of current medical education programme reform in the world is "integration": the horizontal and vertical integration of content from relevant basic science and pathological, humanistic and clinical disciplines. The merits of integrative learning in promoting better educational outcomes are not questionable. However, there is scanty evidence on how students experience it and how they develop the ability to integrate learning. Integration requires correlation of knowledge from various disciplines and adjusting lesson plans and course schedules. In this paper, undergraduate medical students' experiences of integration are explored.

Methodology

Using phenomenography, 16 in-depth interviews and 3 FGDs were conducted with 25 students and 10 teachers. Students were interviewed to reveal their experiences on how they integrate learning and teachers were interviewed to determine their perceptions on how students integrate learning. Using the "Anatomy of Awareness" framework, the analysis revealed the "outcome space" – a collective of students' experiences.

Results



That foundation gets laid in your fifth and sixth year…as you go higher and higher in the years you pull in more resources, compacting them into your categories or boxes… [**Student 6, MBBCh 6**]

…around integration I think that every day is a journey… [Student 4, MBBCh 4].

Analysis revealed five hierarchical "conceptions" with increasing sophistication of integration and the abilities to achieve it. There are hierarchies in students' concepts of what integration of learning is; in their affect towards it; in the abilities that they need to implement it; and in the methods they use to achieve it. The learning environment plays a key role.

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. To facilitate integrative learning, starting earlier in the programme, intentional contextually directed interventions are needed. If these recommendations inform curricula design, students' journey through their programmes will ease.

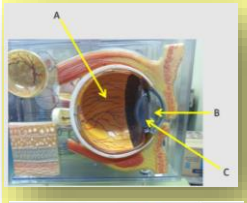
Empowering Blended Learning by Real-Time Data Visualization and Timely Feedback

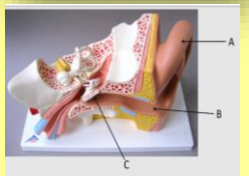
Eugenie Phyu Aye Thwin[1], Jason Chui[2], Cally Ng[2], Zhen Zhen Leow[2]
[1]School of Health and Social Sciences, [2] School of Information Technology, Nanyang Polytechnic, Singapore

Introduction

- Tracking students' learning in a classroom is a challenging task
- A responsive e-learning lesson in a blended learning environment was created to monitor students' learning in real-time and to provide instant feedback

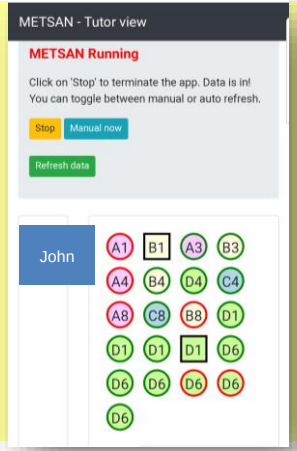
Methodology





- Anatomy practice questions were created by responsive web design and integrated with Bb
- Real-time activities of a control and an experimental group of nursing students were tracked by an online database
- Traffic light codes to identify students needed help
- Fisher Exact test for the relationship of real-time data capturing and number of students needed support
- An online survey to explore students' perception

Results



- Students' activities in an experimental group were tracked by the main author and by the co-authors in a control group
- Number of students identified by the colour codes in an experimental group was higher than that in a control group ($P<0.05$)
- Most students from an experimental group had positive perception of support and feedback from the teacher
- Areas for improvement in the content (e.g. to use 3D images) and design (e.g. some navigation errors) were identified

Conclusion

- This collaborative pilot project demonstrated a potential of real-time learning analytics in checking on students' learning and providing constructive feedback

TEACHING ETHICS IN MEDICAL SCHOOLS: A SYSTEMATIC REVIEW FROM 2000 TO 2018

Wu J.[1], Wong M. K.[1], Cheong C. W. S.[1], Toh Y. P.[2], Krishna L. R. K.[3]

[1] Yong Loo Lin School of Medicine, National University of Singapore, Singapore, [2] National University Hospital, Singapore, [3] Division of Palliative Medicine, National Cancer Centre Singapore, Singapore

Introduction

Teaching ethics in medical curriculum has been described as an “act of hope” (Sokol, 2016). The impact of teaching ethics is unclear, compounded by a lack of consensus on the topics and when and how they would be taught. This systematic scoping review studies existing strategies to nurturing ethics knowledge, skills and practice amongst undergraduate medical students.

Methodology

Arksey and O’Malley (2005)’s and Levac et al. (2010)’s methodological framework for conducting systematic reviews was adopted. Databases PubMed, Embase, PsycINFO, and ERIC were searched for articles concerning teaching ethical knowledge, skills and application of ethical knowledge. Based on agreed upon inclusion criteria, the authors sieved and retrieved final articles for open coding and thematic analysis.

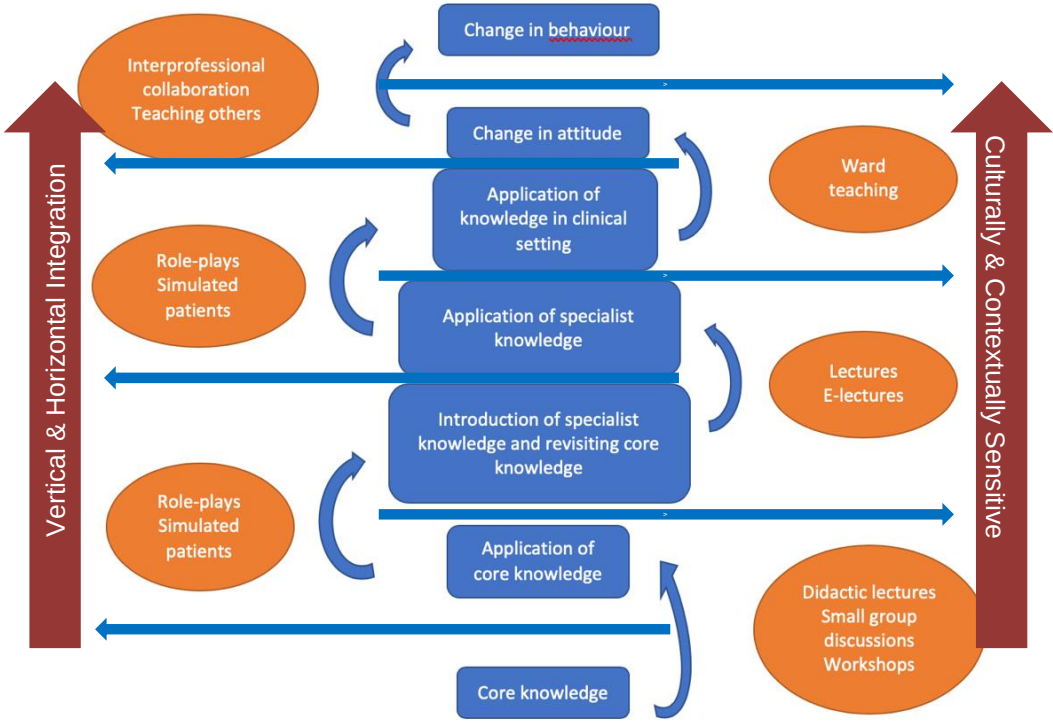
Results

128 articles were included and thematically analysed. Initial review of the data suggested five themes: goals, content, pedagogy, tutor and enabling factors. Subsequent directed content analysis identified three themes: goals, stages and facilitators and obstacles.

Conclusion

There is still much to be done to advance ethics training, but we believe that the data provided here will facilitate the first steps towards a consistent training approach and cement its place in formal medical training programs.

Discussion



FIRST YEAR MEDICAL STUDENT NUTRITION FORUM AND ITS IMPACT ON THE HIDDEN CURRICULUM

Reyes, M.L.,[1], Madarcos, F.B.[2],Magat, M.U.[3], Balcueva, L.L.,[4], Carlos, M.A.F.[5], Faustino, K.M.[6]
Department of Biochemistry, UERMMMCI, Philippines

INTRODUCTION

- This explores the hidden curriculum that has become a theoretical buzzword for "What is not directly taught, but learned" in a subject perceived to be one of the most difficult in medical school: Biochemistry
- Aspects of the hidden curriculum may be revealed through student evaluation of a creative teaching learning strategy in the form of a Nutrition Forum
- Student involvement in the preparation, documentation & learning of clinical nutrition cases became a process of discovery for both students & faculty alike.

METHODOLOGY

Nutirtion Forum: cases with guide questions given to students

↓

Whole day menu preparation with poster presentation & budget

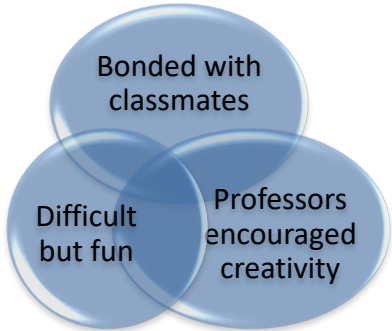
↓

Conventional grading criteria expanded to include palatability, sustainability, eco-friendliness and affordability

↓

Narrative feedbacks were requested of the students

RESULTS



There was overwhelming positive feedback from the students. Common themes that emerged were the welcome opportunity to bond with classmates, realization that nutrition was essential to wellness, and realizing that Biochemistry can be "difficult but fun".

CONCLUSIONS

While student-directed nutrition forums are not a novel concept, the positive impact of these activities on the hidden curriculum can be appreciated in terms of promoting student camaraderie and improving student perception of faculty as role models, hence leading to the cultivation of a nurturing learning environment

Teaching for Multilevel Learners: Introduction of Small Group Interactive Sessions to Residents and Medical Officers

Galang, L, Chong, CJ
Department of Internal Medicine, Singapore General Hospital, Singapore

Introduction

Department of Internal Medicine caters to a variety of multilevel learners. Targeted Teachings have evolved to cater such learners. In addition to DIM 2x/week teachings, PGY1 HOs have Foundation courses and AIM SR training have a teaching curriculum. The MO/Junior Resident have no sessions catered to them. Attendance of these group to DIM teachings are usually lower. We, therefore introduced Small Group Interactive Sessions for Junior Residents Year 1-3 and MOs during clinical posting in DIM.

Methodology

Small Group Interactive Sessions titled **MOST (Medical Officer Specialty Teachings)** occurring 2x/month was introduced from November 2018 to present. 1-2 DIM faculty conducts each session.

1. Evidence based Medicine and Critically appraised Topics
2. Journal Watch
3. Core Knowledge Review
4. Initiation of Palliation and Terminal discharge
5. Approach to Critically Ill patient
6. Review of new and landmark guidelines
7. Complex case discussion
8. MKSAP Question Bank
9. Teaching the Teacher: Strategies for teaching

Results

The following results were noted during MOST Sessions:

1. Better attendance
2. Junior Residents and Medical Officers interact more. They ask questions and share experiences regarding their difficulties especially in the wards .
3. General feedback from MOs and junior residents found Topics 4 and 5 most useful (Initiation of Palliation and Approach to Critically Ill)
4. MOST sessions also help junior doctors feel engaged and part of the DIM team rather than just working for a department with a heavy workload.
5. The Faculty also get to know more of the junior residents/ MOs and their learning needs.

Conclusion

Department Teachings often combines all learners at different levels. Generally the lessons learnt from it is individualized 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?

Seek WN[1], Goh S[2], Chia FL[3]
[1]Group Education, NHG, Singapore, [2] Group Education, NHG, Singapore, [3] Rheumatology, Allergy & Immunology, TTSH, Singapore

Introduction

Many published studies suggest that being female is a risk factor for training attrition, and that female residents tended to leave residency programmes for family reasons more so than their male counterparts.

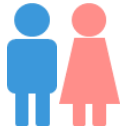
We sought to see if this was also true in National Healthcare Group (NHG) Residency, where restrictions on time away from training and strict maximum candidature rules are in place.

Methodology

Resident attrition data of the NHG Residency since the inception of residency in 2010 to academic year 2018/19 was examined.

Findings

Higher attrition rate in male residents



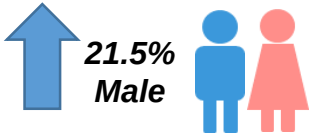
64.8% ***Male***

35.2% ***Female***

Reasons for Leaving Residency

1. Change in career interest
2. **Family Commitments**
3. Specialty / Programme related issues
4. Performance, Professional and Disciplinary issues
5. Personal Reasons

More female residents leave due to family reasons



21.5% ***Male***

39.5% ***Female***

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, allowing part-time training or extension of maximum candidature for young parents to return to training.

PRELIMINARY STUDY OF STRESS DOMAIN USING MSSQ

Mona Marlina[1]
[1]Medical Education Unit, Faculty of Medicine Pelita Harapan University, Indonesia

Introduction

Providing the best teaching program for students is certainly the main focus of every lecture. However, it is necessary to consider the stressors that may be facing 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 in medicine.

Methodology

Cross-sectional univariate measurement using MSSQ. Total statements are 40 (Present randomly). Data was calculated manually.

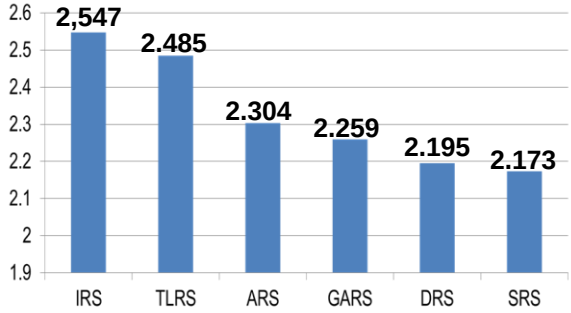
Amount of the statements from each stressor domains are:

- Academic Related Stressors (ARS): 13
- Intrapersonal and Interpersonal Related Stressors (IRS) : 7
- Teaching and Learning Related Stressors (TLRS): 7
- Social Related Stressors (SRS): 6
- Drive and Desire Related Stressors (DRS): 3
- Group Activities Related Stressors (GARS): 4

Answer the statements with rating scale:

0: causing no stress at all
1: mild stress
2: moderate stress
3: high stress
4: severe stress

Results



Stress intensity	
Mild	0-1.00
Moderate	1.01-2.00
High	2.01-3.00
Severe	3.01-4.00

The study was conducted on 30 medical students batch 2016 (8 males and 21 females), age around 16-18 years old. One of the respondent was excluded. All the stressor domain were in the high stress level. The highest level was IRS domain (2.547) and the lowest was SRS (2.173).

Conclusion

IRS contributed as the highest stressor domain. However all the stressor domains were in high level. Based on the result we do want to do further research to know the result on bigger population and details of the sources from each domain.

LMU KLINIKUM DER UNIVERSITÄT MÜNCHEN | CAMPUS INNENSTADT | INSTITUT FÜR DIDAKTIK UND AUSBILDUNGSFORSCHUNG IN DER MEDIZIN | DAM

DEVELOPMENT OF STATISTICAL LITERACY AND SCIENTIFIC REASONING & ARGUMENTATION SKILLS IN MEDICAL DOCTORS

Schmidt FM [1], Zottmann JM [1], Sailer M [2], Fischer MR [1], & **Berndt M** [1]

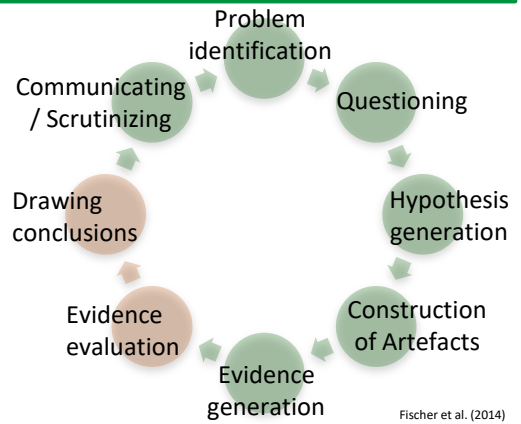
[1] Institute for Medical Education, University Hospital of LMU Munich, Germany, [2] Department of Psychology, LMU Munich, Germany

Introduction

- Statistical literacy (SL) and scientific reasoning & argumentation (SRA) are needed for evidence-based practice.
- There is evidence that both skills are underdeveloped.

Research Questions:

- What is the status quo of medical doctors in statistical literacy and SRA skills?
- How, when, and where do medical doctors acquire these skills?

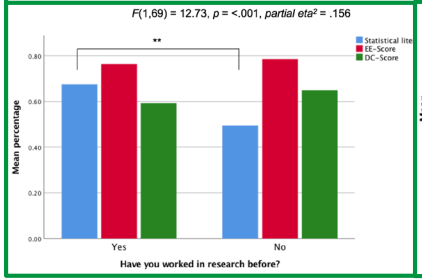


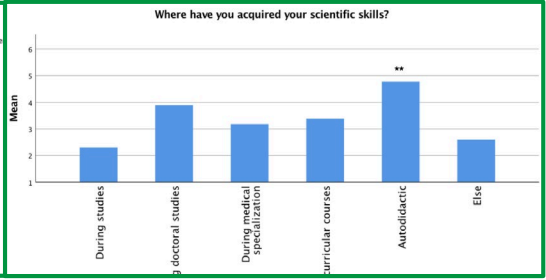
Fischer et al. (2014)

Results – Sample size *N* = 71 practicing physicians, 48.9% female

Significant predictors for

- SL: Number of publications, β = .355 ± .020, *p* =.002
- SL: Time spent in research, β = .280 ± .082, *p* =.018
- SRA: Has to conduct studies at current workplace, β = .333 ± .001, *p* =.005





Methodology – Online measurement tool, 45 min, Cronbach's α = .74 - .77

- Biographical / demographical items
- Statistical literacy, 13 items

Decision-making scenario

- SRA – rating of 4 authentic evidences
- SRA – provision of arguments

Control variables

- Subjective statistical literacy, 6 items
- Willingness to learn, 10 items
- Logical Reasoning, 13 items
- Epistemological beliefs, 18 items

Conclusions – Statistical Literacy and SRA were acquired

- Mostly outside and after formal medical education and autodidactically.
- Through exposure to and active participation in research.

→Fostering of statistical literacy and SRA need to be implemented in medical education curricula.

→Medical students need to be more actively involved in research.

ENHANCED MEDICAL STUDENT PLACEMENTS: A MODEL USING UNIVERSITY-EMPLOYED CLINICIANS IN AUSTRALIA

Dr Susan Roberts and **Associate Professor Mark Morgan**
Bond University, Australia

The Problem: Busy hospital clinicians, hesitant students

Our Solution: Generalist doctor with no clinical role

What Happened: Bedside teaching, facilitated peer-to-peer teaching and intern-readiness skills

Enhancing Novice Mentoring in Medicine: Combining Near-Peer, Peer, and Electronic Mentoring – A Systematic Scoping Review (2000-2018)

Kylie Ho[1], Tay Kuang Teck[1], Lim Wei Qiang[1], Lalit Kumar Radha Krishna[2]

[1]Yong Loo Lin School of Medicine, National University Health Systems, Singapore, [2] National Cancer Institute of Singapore, Singapore

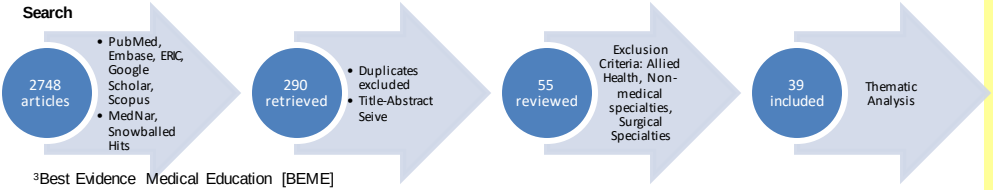
Introduction

To overcome a shortage of mentors in novice-mentoring (between experienced clinician and junior doctor(s) or medical student(s)), some programs have begun incorporating e-mentoring and peer- or near-peer mentoring elements (termed Combined Novice- and Electronic- Peer-mentoring, or CNEP mentoring). However, such an approach has yet to be reviewed, warranting concerns regarding its viability and credibility, hence cuing the need for this review.

Methodology & Results

Arksey and O'Malley (2005)'s framework and PRISMA-ScR guidelines structured this systematic scoping review, which included peer-reviewed and grey literature published between 2000 and 2018 in 5 databases.

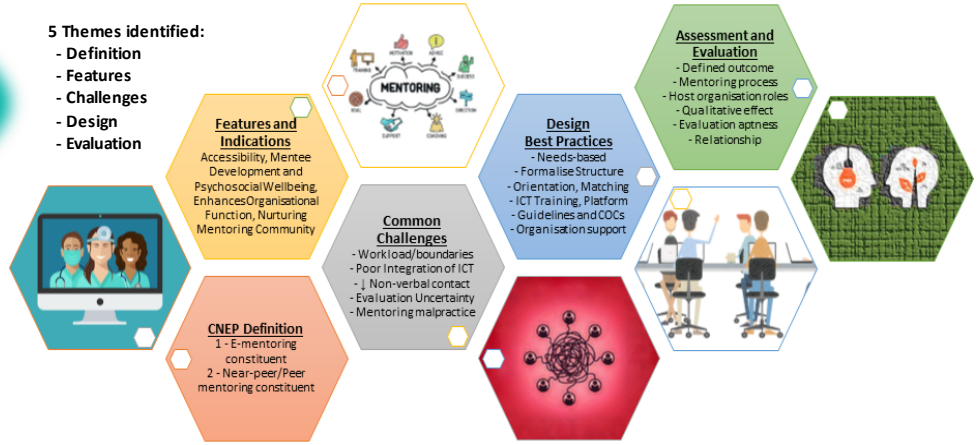
Research was confined to publications in Internal Medicine, and employed Braun and Clarke (2006)'s approach for thematic analysis of prevailing accounts of CNEP mentoring. 5 independent reviewers, overseen by an experienced senior reviewer made up the research team. BEME[3] Collaboration guide and STORIES[4] statement guided the narrative formed.



[3]Best Evidence Medical Education [BEME]

[4]Structured approach to the Reporting In healthcare education of Evidence Synthesis [STORIES]

Thematic Analysis Findings



Conclusion

Current literature for CNEP is optimistic, advocating it as the future in novice medical mentoring with an incoming technologically-savvy millennial workforce and advanced info-communication technologies. More in-depth qualitative studies are needed to accurately and holistically assess the CNEP mentoring process, relationships, dynamics, and evolution. Many programs would benefit from more structure, oversight, support, and better assessment strategies, by employing a needs-based approach and designing a structured mentoring system with established guidelines and code of conduct. Lastly, host organizations play a key role in the success of such programs.

APPLICATION OF COPUS AS A TOOL TO SUPPORT ONGOING CURRICULUM IMPROVEMENT

Pham Xuan Truong[1,2], Duong Thi Hao[1,2], Nguyen Minh Hoang[1,2], Johanna Gutlerner[3], Lisa Cosimi [1, 2, 4]

[1.] Beth Israel Deaconess Medical Center, Boston, USA. [2.] The Partnership for Health Advancement in Vietnam, Hanoi, Vietnam. [3.]Harvard Medical School, Boston, USA, [4.]Brigham and Women's Hospital, Boston, USA.

Introduction

- We are providing faculty development and technical assistance as part of a national effort to reform undergraduate medical education in Vietnam.
- New pre-clinical curricula aims to incorporate adult learning theory by:
  - integrating basic and clinical science in the earliest years
  - increasing interactive instructional strategies
  - fostering self-directed student learning
- The Classroom Observation Protocol for Undergraduate STEM (COPUS) is a standard protocol to collect and measure data on student/faculty interaction in the classroom (Smith et. al. 2013)
- We introduced COPUS to monitor and improve the outcomes of reform at four Vietnam Universities of Medicine and Pharmacy

Methodology

Training Continuous Quality Improvement (CQI) teams:

- Introduction to the tool, its codes, and how to implement
- Hands-on practice using standardized videos
- Practice in live classes to standardize use across team members

Development of School Quality Improvement Plans:

- Implementation of COPUS in minimum number of class sessions
- Routine data review along with student and faculty feedback
- Identification of areas for faculty development/curriculum improvement.

Results

- We trained 26 faculty and staff at 4 universities to use COPUS
- Trained faculty used COPUS to assess 63 pre- and 103 post-reform class sessions.

	Pre-reform	Post-reform
Time spent in active learning:	21.2%	34.8%
Use of active teaching methods:	28.2%	46.7%

- CQI teams used individual university data to:
  - characterize teaching and learning across lectures and courses
  - identify challenges to reform efforts and set goals to increase active learning and interactive teaching methods
  - plan faculty development initiatives to reach these goals
- Aggregated data were not widely shared with teaching faculty
- No faculty received feedback on their individual session

Conclusion

- COPUS is a feasible method to identify areas for ongoing faculty development and curriculum 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.

A1190

Practice using a Latex Simulation Model Results in Skill Transference to Performing Vascular Anastomosis in Rat Vessels in Laboratory-Based Microsurgery Training

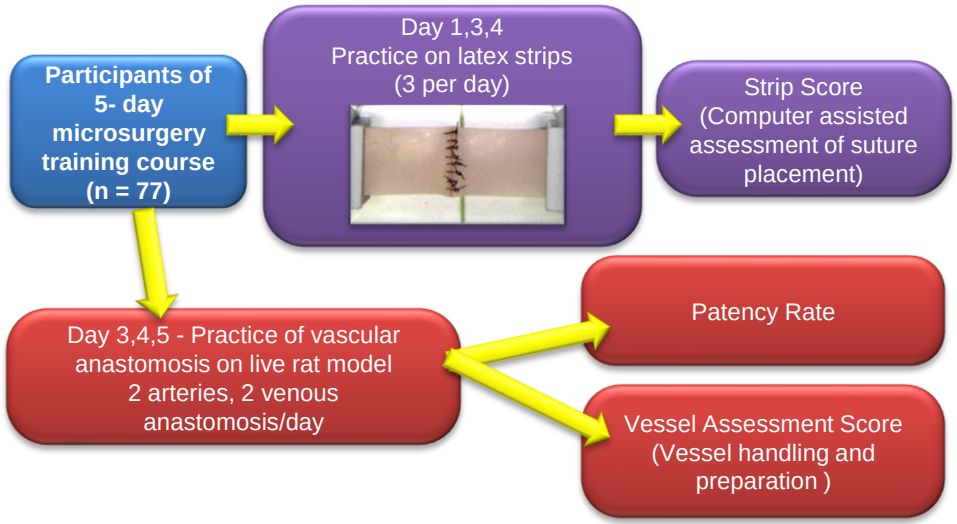
Lim Jin Xi[1,2] , Wendy ZW Teo[2], Khadijah Yusoff [2], Lahiri Amitabha [2], Chong KS Alphonsus [2,3]

[1] Department of Orthopaedic Surgery, Ng Teng Fong General Hospital， [2] Department of Hand and Reconstructive Microsurgery, National University Health System, [3] Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore

Introduction

Surgical residents pursuing a career in microsurgery must successfully acquire microsurgical skills via repeated practice in order to achieve vascular patency in patients. Our hypothesis is that there is a positive correlation between the scores attained on a latex model and the patency rate of vascular anastomosis of rat vessels in a laboratory setting.

Methodology



Results

	Day 3	Day 4
Strip Scores vs Vessel Patency	R = 0.28 ($p < 0.05$)	R = 0.39 ($p < 0.05$)
Strip Scores vs Vessel Assessment Score	R = 0.15 ($p = 0.186$)	R = 0.54 ($p < 0.05$)

Table 1. Correlation between Microtrainer (MT) Strip Scores, Vessel Assessment Scores and Vessel Patency Rate

Conclusion

Microsurgical practice in a latex model results in skill transference to vessel anastomosis in a live rat model. This model offers a more practical and accessible training resource for residents in all specialties involving microsurgical procedures.

A1214

National Neuroscience Institute
SingHealth
DukeNUS Medical School

Through a Glass, Qualitatively: examining Enablers and Barriers to Interprofessional Collaboration using Institutional Ethnography

Kevin TAN[1,2], Nigel CK TAN[1,2], Jai RAO[1,3], Yang Yann FOO[1]

[1]Duke-NUS Medical School, Singapore; Departments of [2]Neurology & [3]Neurosurgery, National Neuroscience Institute, Singapore

SingHealth DukeNUS Academic Medical Centre
NEUROSCIENCE

BACKGROUND

Interprofessional collaboration (IPC) improves patient care and outcomes. The common assumption is that interprofessional education (IPE) leads to IPC. Current literature, however, indicates that atheoretical models focusing only on educational activities may not foster IPC (1).

To understand the IPC landscape at the National Neuroscience Institute (NNI) in a theoretically rigorous way, we selected Bronfenbrenner's (2,3) ecological systems theory for its multi-system approach to identify and address factors that enable or inhibit IPC.

METHODS

Our ongoing ethnographic study began in May 2019. We observed healthcare professionals' (HCP) interactions and also interviewed some of them using purposive sampling. All interviews were audio-recorded and transcribed. Thematic analysis was conducted and the findings were triangulated with observation memos and notes. Ethics approval was obtained.

CONTACT INFORMATION

Dr Kevin Tan. National Neuroscience Institute, 11 Jalan Tan Tock Seng, Singapore 308433. Email: kevin.tan@singhealth.com.sg

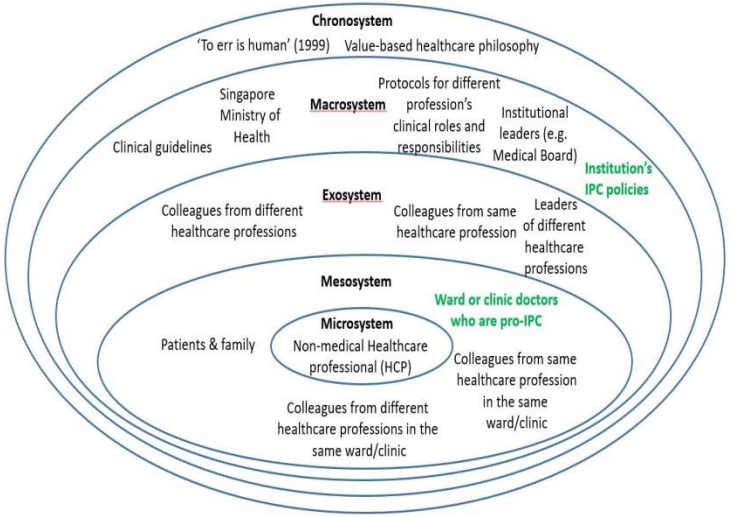


Fig 1. Interprofessional Collaboration Ecology in NNI

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RESULTS

We observed **52 hours of interactions** among patient service associates (N=4), allied health professionals (N=7), nurses (N=10) and doctors (N=39) in inpatient and outpatient settings. We **interviewed 16 participants totaling 19.5 hours** (PSA=2; nurses=5; doctors=9).

Analysis using Bronfenbrenner's theory showed that **different forms of leadership influenced IPC** (Fig 1).

- At the **mesosystem level**, when doctors were respectful and collegial with their non-medical HCP team members, patients and their family trusted the non-medical HCP more. In turn, non-medical HCPs also contributed more actively to patient care.
- At the **macrosystem level**, institutional leadership support was crucial. Examples included institutional policies giving prescribing rights to non-medical HCPs, or policies providing protected time for non-medical HCPs to participate in IPC activities.

CONCLUSIONS

- Bronfenbrenner's ecological system theory is a useful framework that allows us to gain a theoretically-grounded understanding of factors that enable or inhibit IPC.
- Leadership was an important factor for IPC at the meso- and macrosystem levels.

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TRAINING MEDICAL STUDENTS TO OBTAIN VALID INFORMED CONSENT: A SINGLE CENTRE MEDICAL SCHOOL STUDY

Mak TWC[1], Futaba K[1], Chong C[1], Wong C[2]
[1]Department of Surgery, The Chinese University of Hong Kong, Hong Kong SAR, China.
[2] Jockey Club School of Public Health, The Chinese University of Hong Kong, Hong Kong SAR, China.

Introduction

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.
This study aims to assess the usefulness of an organized teaching workshop for valid informed consent.

Method

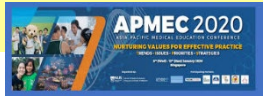
From 2015 to 2019, 4th year medical students from the Chinese University of Hong Kong were given didactic lectures and communication workshops on valid informed consent. Main components of capacity and volunteeriness were taught and discussed. Students were examined summatively at the end of year OSCE 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 structure interactive teaching programme, students can develop skills early in their medical career.



USING PSYCHOMETRICS TO INFORM EPA

Liu TH[1]

[1]Department of Medical Education, Taipei Tzu Chi Hospital, Taiwan

Introduction

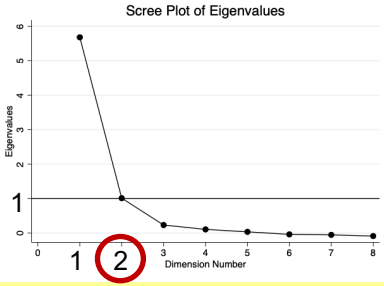
Competence-based medical education (CBME) has become a recent trend in medical education reform to enhance the effectiveness of clinical education. In Taipei Tzu Chi Hospital, Taiwan, we have piloted an Entrustable Professional Activity (EPA) program for trainees in their first postgraduate year (PGY-1) 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 in our first cohort.

Methodology

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 also examined the dimensionality by factor analysis.

Four EPAs and 19 competencies were checked. To illustrate, we would use the EPA 1 (handling patients with common complaints, which includes 8 competencies) as an example. 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.

Results



Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Factor4
Gather History	0.8993	-0.3529	-0.1576	-0.0236
Physical Exam	0.8403	-0.3377	-0.0702	0.2335
Lab & Image	0.8635	-0.3130	0.1052	-0.1970
Differential Dx	0.9054	0.0513	-0.2722	-0.0632
Give Orders	0.8877	0.2795	0.0886	-0.0594
Write Charts	0.8126	-0.2406	0.2753	0.0477
Explain Plans	0.8087	0.4435	0.1581	0.0653
Educate Patient	0.7070	0.5852	-0.1043	0.0192

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 8 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. A single EPA can measure up to two dimensions of clinical competence and may need some rearrangement in its competencies.

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)

Jason CH Yap, Preventive Medicine Residency Programme, National University Health System, Singapore

Background

Singapore moved towards American-style residency system in 2010.

- Preventive Medicine was with first movers, made a national programme, with sites across three Sponsoring Institutions (NHG, NUHS, SHS) and other organisations (MOH, MOM, SAF, HPB, HSA, AIC, others).

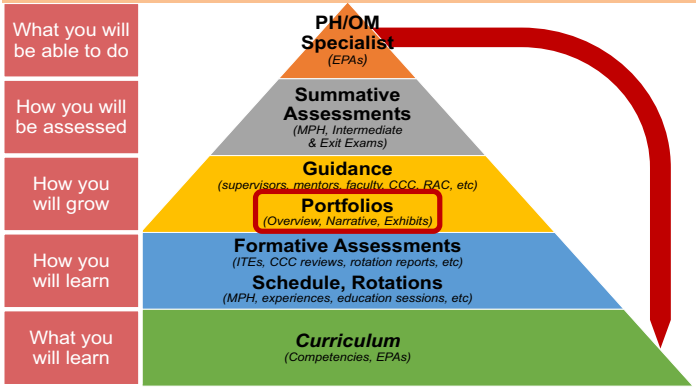
Many benefits but also many teething (and ongoing) problems.

- Merged separate Public Health and Occupational Medicine programmes.
- New approach was clinically-oriented, bottoms-up, granular, unwieldy.
- Funding norms, operational procedures designed for clinical specialities.

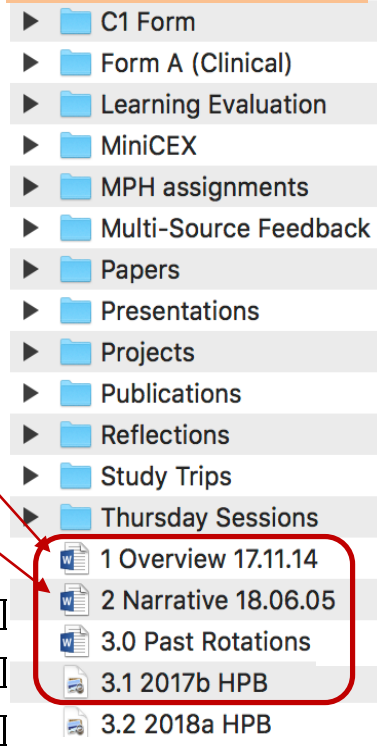
Then, MOH required the Exit Examination (hitherto an intense two-hour paper critique/project viva by a panel) have more testing modalities.

- As part of the revision, RAC asked the programme to incorporate "portfolios" but left the details and implementation to the programme.

Training Framework



Portfolio Design



Chronological logbook

Development on 13 EPAs

Incorporation into Training Trajectory

ASSESSING THE FACTORS INFLUENCING MEDICAL STUDENTS' CAREER CHOICES: A NATIONAL SURVEY

Hosseini Dolama R[1], Arabi M[1], Rezaei A[1], Khabaz Mafinejad M[2]
[1]School of Medicine, Tehran University of medical Sciences, Iran
[2] Department of Medical Education, Tehran University of medical Sciences, Iran

Introduction

The uneven distribution of physicians across different specialties and the subsequent challenge of providing easy access to the needed care 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 favorable specialties. 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 development

Materials and Methods

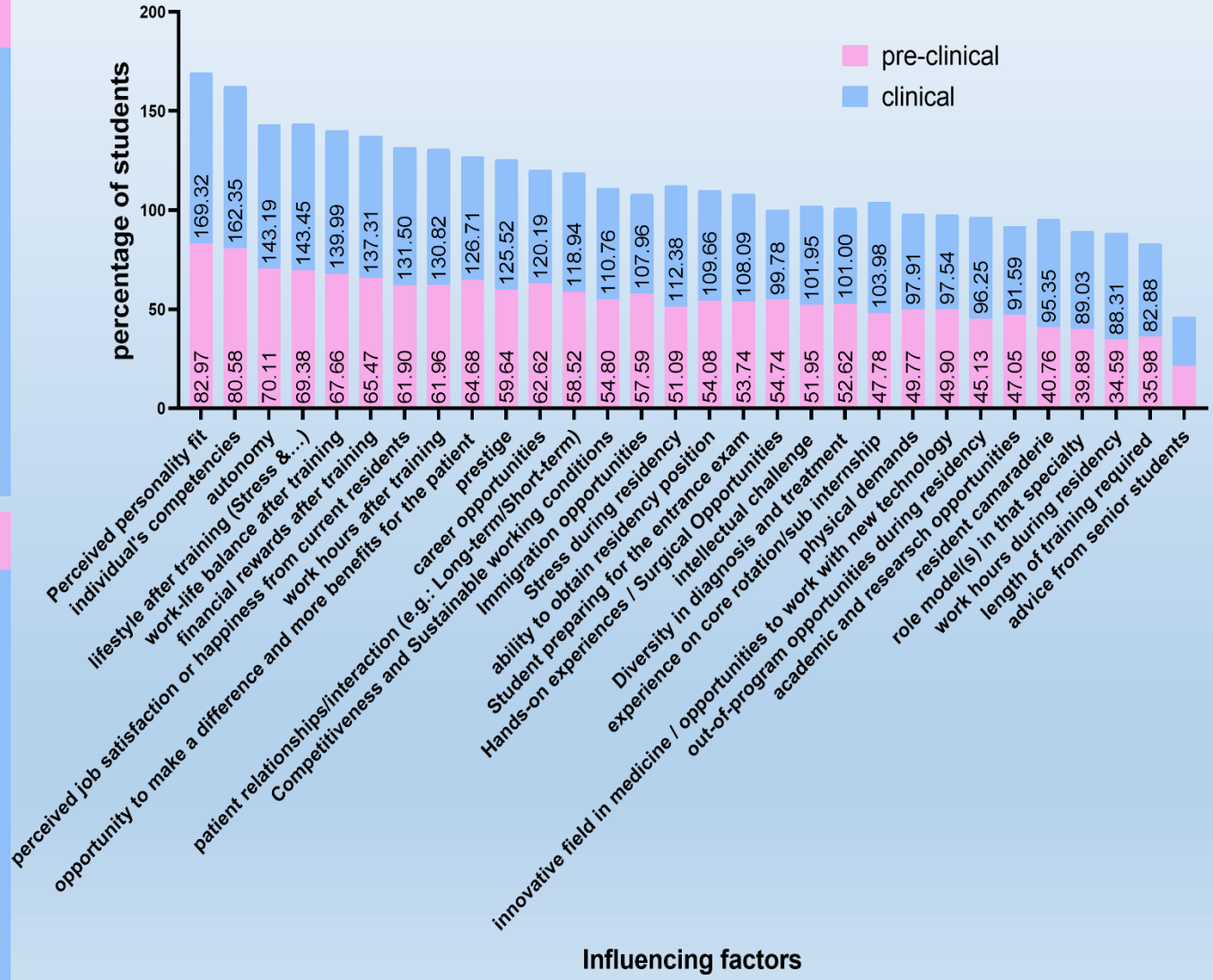
A multi-site cross-sectional survey of medical students was conducted using a valid questionnaire. The questionnaire consisted of three parts including demographic data, students' interests, and influencing factors which quantified the role of 30 different factors in 6 categories using a 5-point Likert 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. 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.



GAMIFICATION OF MEDICAL EDUCATION VIA A MAZE? ISSUES AND IMPLICATIONS

Choo Jia Yi[1] Lee De Zhang[1], Ng Li Shia [2] Chandrika Muthukrishnan[1], Ang Eng Tat[1]
Department of Anatomy, Yong Loo Lin School of Medicine[1] NUHS,
Department of Otolaryngology[2], NUH, NUHS

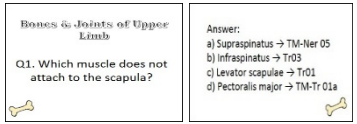
INTRODUCTION

Gamification when administered judiciously could capture the attention and imagination of the millennia medical students. Adding gaming elements to the anatomy education process could result in better academic results (proven). How did this come about? Was it due to increased motivation or some other psychometric construct changes? Tracking a group of medical students over 3-4 years with the PRO-SDLS has provided more insights. Additionally, the Partial Least Squares path model (PLS-PM) and paired T-test was used to assess the change in these constructs with the maze as an intervention.

MATERIALS AND METHODS

All students (n=172) to complete the **pre-survey** (PRO-SDLS) before the maze.
The tutorial group was then divided into subgroups of 3, and tasked to complete the maze as a team.

-Maze comprises of **10** stations
-At each station, students have to pick up a cue card with a question (MCQ) to be answered.
-Choosing the correct option will lead them to the next station
-At each station, specific structure are also highlighted to students on a checklist.
Example:



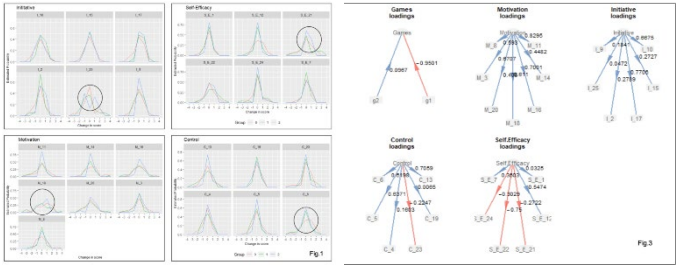
Students' CA results were collated and analysed. This was then compared to the cohort.

All students to complete the **post-survey**.

Qualitative comments regarding the maze were also solicited.

PLS-PM and the Paired T-Test

RESULTS



DISCUSSION AND CONCLUSION

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 fully decipher the complex mechanistic workings of anatomy education. This is probably due to the many variables involved. "**Motivation**" per se was not found to be statistically 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 active learning. We also noted that the type of self reporting scale used will produce different outcomes. Student's interest (positive emotions) will also determine the eventual academic results. Lastly, metacognition might be improved with script concordance testing as well.

Identifying the Critical view of safety during cholecystectomy: Results of a didactic training module

Danson Yeo[1], Aaryan Koura[1]
[1]Department of General Surgery, Tan Tock Seng Hospital, Singapore

Background

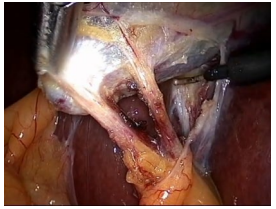
Laparoscopic cholecystectomy is a commonly performed surgical procedure. Demonstration of the critical view of safety (CVS) is paramount to minimizing complications.

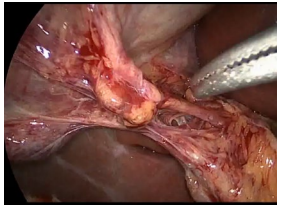
The aim of this study was to measure correct identification of the CVS, quantify observer variability, and the impact of a didactic training module on these measurements.

Methodology

- 10 images of dissected hepato-cystic triangles chosen, and the completeness of the dissection in the images was graded.
- 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.
- Immediately after the lecture, all the participants were 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 analyzed using paired t-tests. Inter-observer agreement within the resident and consultant groups was analyzed 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.
- 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 the training module, however they still fared poorer than the consultants.
- Didactic training modules are important in surgical training, but they cannot replace operative experience.

Impact of Continuing Education for Pharmacists in Optimising Glycemic Control

CHAN X X[1], WAN M Q[1], FAN S W[1], Chung Y L[3], MOK S F[2]

[1]Department of Pharmacy, National University Hospital, Singapore, [2] Division of Endocrinology, National University Hospital, Singapore, [3]Faculty of Medicine, University of Queensland, Australia

Introduction

Glycemic derangements prolong inpatient stay and pharmacists play a role in stabilizing inpatient blood sugars. To empower ward pharmacists in making recommendations to optimize patient blood sugars, the NUH Diabetes team facilitated a case-based tutorial series in small group discussion format.

Methodology

3 topics were selected based on a survey on the needs of ward pharmacists. “Lucky 7” steps were formulated to simplify the process in obtaining relevant diabetes-related information. Each session was planned to be interactive and based on real case scenarios.

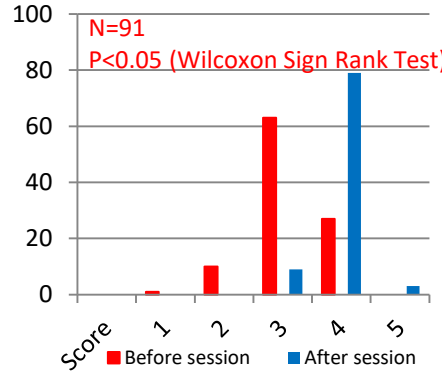
Lucky 7 steps
1) Glycemic trend
2) Medication Records
3) Food intake
4) HbA1c trend
5) Relevant case notes
6) Laboratory results
7) Analysing your data

Topics
- Introduction to “Lucky 7” steps in Glycemic Management
- Management of Hyperglycemia
- Steroid Induced Hyperglycemia

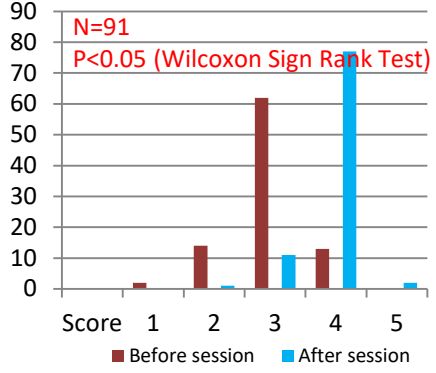
Assessment
- Pre- and post self-rated survey to assess user’s confidence via 5 point
- Wilcoxon Sign Rank test for Statistical analysis
- Qualitative feedback obtained with thematic analysis of free-text comments in surveys

Results

Self-rated confidence in reviewing clinical information (Likert Scale)



Self-rated confidence in recommending changes (Likert Scale)



Thematic analysis identified learners’ poor self-efficacy in initiating and titrating insulin and lack of confidence in managing more complex patients, with a lack of time amidst heavy clinical workload. These former 2 gaps were addressed by the training sessions via use of realistic scenarios with the systematic use of the 7 step framework. The sessions were well-received with calls for more sessions on specific clinical situations.

Conclusion

Case based discussion sessions can be adopted to educate healthcare professionals in the complex tasks of inpatient diabetes management, which the aid of realistic examples and simplified frameworks. These are shown by increase in learner’s self-rated confidence scores.

CADAVERIC DISSECTION SHOW THE ROPES BEYOND ANATOMY

Chandrika M, Jayabharathi K, Sara K R, Satish R.L, Ng Y K
Department of Anatomy, National university of Singapore, Singapore

Introduction

Many studies have revealed the importance of learning anatomy by dissection method. Considering this, the elective dissection module was introduced to the students after their year one final assessment. Beyond gross anatomy, students are encouraged to explore other aspects of medical science such as clinical anatomy, pathology and pathophysiology. The students explored the human body by performing layer by layer dissection. The samples for histopathologic studies were retrieved from specimens of interest and discussed with our pathology colleagues.Surgical anatomy tutorials conducted by our surgical colleagues enlightened the students.

Methodology

The students attended the elective dissection module for a period of six weeks. They were given a brief introduction on human dissection, proper handling of surgical instruments and safety precautions at the beginning of each session. Students turned spotlight on the intriguing pathological organs. They reviewed the possible causes for these abnormal features in these organs with the tutors. The suspected specimens were identified, photographed and histopathologic samples were sent for analysis. The clinical relevance of the abnormal findings were further discussed with visiting consultants.

Results

Out of 20 silent mentors deployed in the elective dissection module in 2019,nearly 15 of them had succumbed to cancer. Hence students had the opportunity to pursue the pathophysiology of tumor and its spread. For instance, Silent mentor A had died o f breast cancer. Though mastectomy had been performed in this silent mentor, the mucinoid infiltrated lungs, enlarged nodular liver and metastatic lymph nodes helped the students to correlate with the final diagnosis. In another silent mentor B ,the chest wall was adhered to the underlying structure. On further dissection, the heart with a triple bypass graft was identified.The atherosclerotic vessels were also made out. This helped the students to correlate the stroke which had been the cause of demise of this silent mentor. Many pathologic findings were highlighted during dissection.The applied anatomy and pathophysiology of those findings were underscored by the surgical colleagues on the dot.

Conclusion

Cadaveric dissection has corroborated applied anatomy to the students. In addition, students learned the principles of surgical anatomy and pathophysiology. The clinical relevance emphasised by the surgeons in context with the dissected specimens were well conceived by the students. The dissection module ended up with suturing of the dissected parts of the silent mentors. The introduction of surgical suturing techniques fascinated the students and also encouraged them to pursue further skills. On the whole, this elective dissection course has definitely given an insight into the intricacies of anatomy and way beyond it too.

MONGOLIAN TRADITIONAL MEDICAL CURRICULUM IN INNER MONGOLIA, CHINA AND MONGOLIA: A COMPARATIVE STUDY

Wu Qi Zhu [1], Amarsaikhan D[2], **Regzedmaa D [2]** ,Tserendagva D[2], Oyungoo B[2]
[1]Medical University of Huhhot, Inner Mongolia , [2]Mongolian National University of Medical Sciences

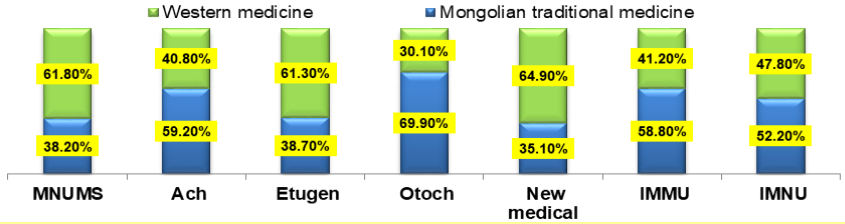
Introduction

Mongolian Traditional Medicine is a comprehensive system of medical and scientific knowledge that is accumulated through hundreds of years of rich history of nomadic civilization and way of life. A study comparing Mongolian Traditional Medicine curricula with that of international standards is deeply needed. Therefore, the authors aimed to assess and compare between Inner Mongolia, China and Mongolian universities current curriculum.

Methodology

Concept, structure and contents of Mongolian Traditional Medicine curricula of International School of Mongolian Medicine (ISMM), Mongolian National University of Medical Sciences 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 analyzed utilizing momentary descriptive modeling.

Results



Mandatory credit hours of universities in Mongolia range from 90-97% while in Inner Mongolia, PRC they range from 57-65%. Difference is, once again, observed in percentage of mandatory credit hours of total credit hours. Percentage of lecture, practical training, seminar and homework also differ. For example, lectures range from 15.1% at ISMM, MNUMS of Mongolia, 73.9% at IMMU of PRC, to 85.2% at IMNU of PRC. In Inner Mongolian universities, dovetailing high percentage (24.7-26.2%) clerkship training, share of mandatory coursework is low.

Conclusion

Mongolian Traditional Medicine curriculum of ISMM, MNUMS of Mongolia is relatively unflexible, lagging in both electives and clerkship opportunities compared with other universities. Diploma of Mongolian Traditional Medicine curriculum should be organized in accord with international standards.

ENHANCING PERSONAL & CLINICAL VALUES THROUGH OVERSEAS PLACEMENT EXPERIENCES

Jones, L.E. Health and Social Sciences Cluster, Singapore Institute of Technology, Singapore

Background and aims

The author has a range of previous overseas education experiences. The most recent, as a physiotherapy mentor in remote Nepal. Aim of study was to capture student reflections from this experience.

Methods

Four students participated in an inter-professional humanitarian camp. They were briefed on what to expect including information from a Nepali physiotherapist. They worked with local translators to assess and provide exercise to the villagers and to educate the local health workers. Fieldwork notes, and two focus groups (1 month and 6 months post-trip) provided the main data sources. Presented here is a reflexive summary by the researcher.

SIT IRB 2018124

Results

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 sociopolitical 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.

Conclusions

Some important elements of the experience:

- 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

Acknowledgements: Dr Kumaran Rasappan, Dr Gayanthri Nadarajan and Project Aasha Team, and Mr. Jazimin Haron and Ms. Manisha Shrestha (Physiotherapists)

EMBED TEACHING

Associate Professor Wayne Hazell [1,2], Dr Mai Su[2], Dr Edmund Kang[2]
[1] Northside Clinical Unit, University of Queensland, Australia, [2]The Prince Charles Hospital Emergency Department, Queensland, Australia

Introduction

Medical education assessment has changed over recent times & drives learning. Real patients have been removed from examinations and replaced by standardised patients played by actors. **Standardised patients 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 and the recognition of the critically unwell and/or deteriorating patients. It is important for junior doctors to have the **trained skill of rapid end of the bed assessment to enable escalation of supervisor involvement, prioritisation of patient care & allocation of the patient to an appropriate department area.**

Methodology

EMBED teaching ("End-of-the-multiple-bed-ogram teaching in ED") involves medical students observing multiple patients in an adult Emergency Department from the end of the bed *alone* and reporting back to an expert clinical supervisor, who has also done the observation, with regard to features of concerning clinical severity or risk of possible deterioration.

Our aim was to explore the literature and the web to see if there was any similar teaching method or research in this area. A search was undertaken around the concept of the **"end of the bed-ogram"** including other terms end of bed, assessment, examination, observation, clinical signs, emergency medicine, intensive care & nursing. Formal numerical scales were excluded such as triage, EWS and illness severity.

Result

The initial review of the literature evolved other related terms: **"clinical intuition", "visual triage", "eyeball triage", "initial impression", "ill looking", "worry factor" and "clinical gestalt".** Only 5 articles of specific, main subject, sole, high relevance were found at the time of submission: Nursing (2), Emergency Medicine (2), Surgical (1). One theme was its predictive value for higher morbidity and mortality either alone, in comparison with, or added to, another assessment.

Active web references included an intensive care network (ICN) based in Sydney that has a 3-case video based teaching section intitled "end of the bed-ogram" and 1 nursing website "Injectable Orange". Some Mnemonics were found.

We found no similar teaching technique to EMBED described. Outside of short case teaching literature it was difficult to find any guidance on the best methodologies &/or observation inclusion lists, for teaching end-of-the-bed-o-gram skills alone. Clinical experience, exposure and expertise was reported as required for learning this skill.

Conclusion

EMBED is an innovative technique not described in the literature, as far as we are able to identify, which may provide positive learner cognitive interactions and pattern recognition. We intend to **research medical student's perceptions** of this teaching activity in relation to other course learning opportunities and intend to **formalise its process. There may be relevance to nurse education. Collaboration would be welcome.**

THE PERCIEVED OF UNDERGRADUATE STUDENT AND TEACHER IN IMPLEMENTING FORMATIVE ASSESSMENT

Sari MS[1], Inayati I[2], Djajasasmita D[2]
[1]Department of Medical Education Jenderal Achmad Yani University Indonesia
[2] Department of Biomedical Science Jenderal Achmad Yani University Indonesia

Introduction

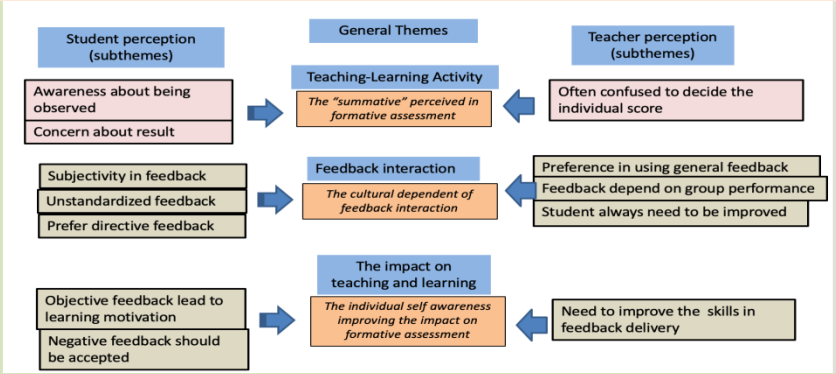
The concept of "***assessment for learning***" has been widely define as a model of assessment that facilitate learning improvement through longitudinal approach of repeated measurement together with constructive feedback. Some studies adapt this concept in the formative assessment. The problem rise from the implementation especially lack of standardization and cultural dependent approach. The aim of this study is to explore the perceived of students and teacher about formative assessment and its impact on learning and teaching.

Methodology

This study used **qualitative design with phenomenology approach** to describe the phenomena from student and teacher lived experience about formative assessment and the impact on teaching and learning.
We conducted semi structured focus group discussion with students and in-dept interview with teachers. Data collection saturated in four FGD (twenty-nine students) and five in-dept interviews with teachers. We used the content analysis to construct the theme and sub-themes from the transcript. To achieve the trustworthiness of our date, we performed the member-checking, data and method triangulation.

References:
Al-Kadri HMA et al The student perceptions of the impact of assessment on approaches to learning: a comparison between two medical schools with similar curricula. Int J Med Educ. 2011; 2: 44-52.
Sanjib D et al. Impact of formative assessment on the outcome of summative assessment- a feedback based cross sectional study conducted among basic science medical student enrolled in MD program. Asian Journal of Medical Science 2017; 8: 38-43.
Suhoyo Y, Van Hell EA, Prihatiningsih TS, Kuks JBM & Schotanus JC. Exploring cultural differences in feedback processes and perceived instructiveness during clerkships: Replicating a Dutch study in Indonesia. Medical Teacher 2014; 36: 223–229

Results and Discussion



From our content analysis, we corresponded the student and teacher perception and identified three general themes which lead us to the phenomena such as the "**summative-perceived" in formative assessment, the collectivist feedback interaction and self awareness.**

Conclusion

In this study, we described the student and teacher perception on formative assessment that would become our underlined aspect for formative assessment development. Further research can find deeper understanding about the feedback interaction and develop action research in implementing formative assessment.

the Effectiveness of Interprofessional Practice Activities at a Medical Center in Taiwan

Yung-Sung Wen[1], Yi-Cheng Liao[2], Jhin-Long Jiang[3], Chin-Yi Huang[3], Jen-Hung Yang[4]
[1]Center for Faculty Development, [2]Center for Evidence Based Medicine, [3]Teaching Department, [4]Chief Education Director,
Changhua Christian Hospital, Taiwan

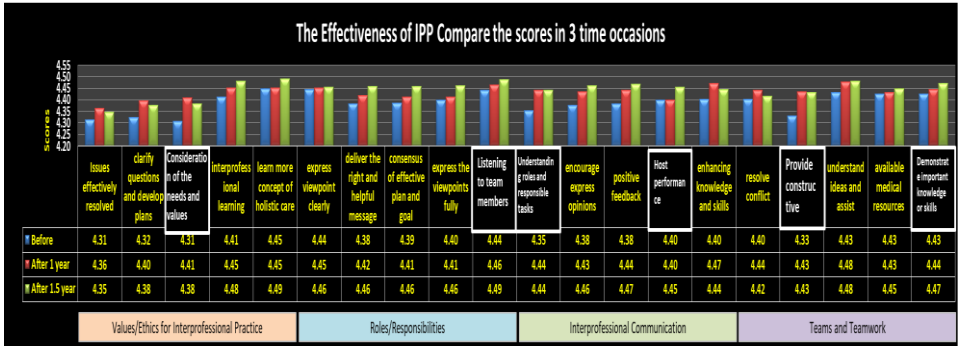
Introduction

Conservative or suppressive attitudes influence the performance of interprofessional practive in eastern country. To improve the awareness, values, team communication and operations of medical program directors and teams engaged in interprofessional practice and teaching. we developed an enhanced interprofessional training activities based on the core competencies by the Interprofessional Education Collaborative (IPEC) and evaluative the effectiveness of these activities.

Methodology

1. Develop a “Questionnaire for Interprofessional Practice Training Effectiveness” to evaluate the effectiveness of medical program directors on implementation of IPP.
2. 4 domains (20 items abstracted from 38 items of IPEC) including "Value and Ethics"(5 items), "Role Perception and Responsibility"(5 items), “Team Communication” (5 items), "Team Operations"(5 items).
3. The **questionnaire** scored with Likert 5-point scale, 1 indicates strongly disagree and 5 indicates strongly agree. **Carried out** at 3 different time occasions: before, one year after and enhanced activity in one and a half years. **Data** was compared with T test.
4. We provided immediate feedback to our participating faculty in IPP conference after each questionnaire session.

Results



1. 6 Items revealed positive significance, P < 0,05 (item in white characters)
2. No negative significant item.
3. Most items revealed increasing score.

Conclusion

1. An enhancing interprofessional training activities may improve some items of core competences in a medical center of Taiwan.
2. Our interprofessional training program showed improving short term effectiveness but needs longer evaluation.

APPLICATION OF THE MINI-CEX AND QUICK FEEDBACK FOR MEDICAL STUDENT IN HUEUMP

Le Van Chi[1], Le Nghi Thanh Nhan[2], Le Minh Tam[3], Bui Binh Bao Son[4]

[1]Internal Medicine, [2]Surgery, [3]Ob-Gyn and [4]Pediatrics Depts, Hue University of Medicine and Pharmacy (Hue UMP), Viet Nam

Introduction

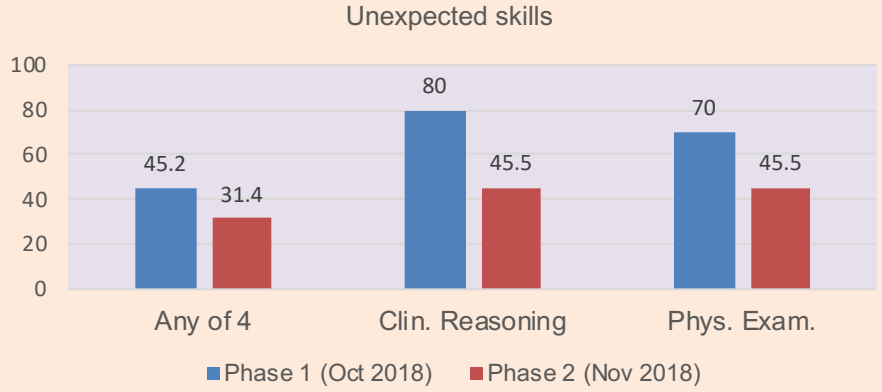
Application of the Mini Clinical Evaluation Exercise (mini-CEX) integrated with feedback has been conducted among selected students of year 4 who are participating in clerkship rotations to enhance developing the clinical skills.

With technical supports from Harvard Medical School within the framework of 2 projects (HPET and IMPACT-MED) 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 HueUMP.

Methodology

The formative assessment trial of mini-CEX integrated with feedback using the plan-do-study-act (PDSA) cycle.
80 Y4 students in clerkship rotation for 8 weeks in 4 disciplines of Internal Medicine, Surgery, Ob-Gyn and Pediatrics.
The 15-minute mini-CEX observation (4 clinical skills: history taking, physical exam, professionalism and clinical reasoning) based on health problems required for student Y4 to obtain the "interpreter" level of the RIME framework.
A quick feedback followed the observation for the students' improvement.

Results



Faculty survey showed a positive feedback 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 Y4 students to identify unsatisfied clinical skills to make plans for improvement. Y4 stds respond positively to better learning the required clinical skills.
For faculty involvement: a strategy/policy to allocate time to conduct more formative assessment and feedback is needed

UTILIZING 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

Huang Z[1] , Hui C[2] , Lim J[3] , Kang J[2]

[1]Department of O&G, NUS/NUHS, Singapore, [2] Department of O&G, KKH, Singapore, [3] Department of O&G, SGH, Singapore

Introduction

The levonorgestrel intrauterine system (IUS) is essential for many gynaecological complaints and an effective treatment for heavy menstrual bleeding as well as contraception.

- Its use is limited to mainly gynaecologists → an invasive procedure of inserting the IUS into the uterine cavity with associated risks to the procedure e.g. uterine perforation resulting in infections, bleeding, further visceral injuries.
- Therefore clinicians (specialists or non-specialists) should receive formal training and gain confidence before attempting the procedure on a woman.

Aim: To determine if years of clinical experience and a prior experience will benefit from simulation training

Methodology

Participants: Clinicians of all experience and years of training to attempt the simulator by performing a survey pre and post-utility of the simulator.

Pelvic stimulator: Employing VirtaMed GynoS™ IUD placement mobile set up simulator to all public institutions and private institutions with gynaecology services.

- 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
- Whole procedure takes about 15 minutes with a designated trainer who is familiar with the use of the simulator

Survey: 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
- 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

Utilizing 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

Johnson K, **Bullock S,** and Leversha A
School of Rural Health, Monash University, Australia

Introduction

Pharmacology is an important component of medical student preparation, contributing to the knowledge necessary for good prescribing practice. In previous studies, medical students perceive themselves as unprepared for their future roles in pharmacology and prescribing[1].

Methodology

This study uses a mix of qualitative and quantitative research methods. The target population was the 2016 Victorian medical intern cohort. Invitations to participate in an anonymous online survey were sent by the Victorian Postgraduate Medical Council to all Victorian Interns and also made via Medical Educational Officers or Intern Co-ordinators at hospitals. Focus group interviews were conducted with five participants, recruited via the online survey.
The study questions focused on the following domains: pharmacology/therapeutics content, dosages, drug interactions, medication chart work, high risk medications and patient education.

Results

Upon graduation, only 35.5% of intern respondents agreed or strongly agreed that the timing of teaching was given at the correct stage of the course. Further to this, only 22.1% felt prepared to calculate dosage correctly, 47% felt unprepared to prescribe medications and 55.9% felt particularly underprepared to prescribe high-risk medications. Forty percent of respondents indicated they received adequate opportunities to use their knowledge of drug interaction during clinical placements and felt that medication chart practice was sufficiently taught. The focus group respondents particularly indicated dose calculation as an area that needs additional learning opportunities.

Conclusion

Interns indicated the least confidence in high risk medications, dosages and drug prescribing. It was repeatedly emphasized that, in medical school, timing of the teaching could be improved, with additional teaching required during the clinical years.

MONASH University

MONASH RURAL HEALTH

[1] Bullock S and Leversha A (2019) ' Medical student perceptions of their knowledge and skills in pharmacology in their first and final clinical years ' *MedEdPublish* . https://doi.org/10.15694/mep.2019.000042.1

Palliative Care Training: Beyond Hospital to Community; Beyond Specialist to Generalist

Xu Yi[1], Alethea Yee Chung Pheng[2,3], Liu Fang[3], Lim Su Fee[1]
[1]RHS Community Nursing, Population Health and Integrated Care Office, Singapore General Hospital;
[2]Lien Centre for Palliative Care, Duke-NUS Medical School, Singapore; [3]Assisi Hospice, Singapore

Background

- Imperative to meet the needs of ageing population and rising incidence of cancer and organ failures in Singapore
- Community Nursing service to **bridge the gap** between hospital and community care, and complement palliative care services provided by the hospice care teams
- A structured training to equip community nurses with **"generalist"** knowledge and skills to support patients with lower symptom intensity in early palliative care
- More complicated cases will be referred to the community palliative **specialists** for appropriate interventions

Basic Community Palliative Care Training

★ **The Lien Centre for Palliative Care (LCPC)** collaborated with **Assisi Hospice (AH)** to develop a de novo training program in basic palliative care for SGH Community Nursing in November 2018

★ **3** runs of training conducted for **31** community nurses over 8 months

Basic Training
- The End of Life Nursing Education Consortium

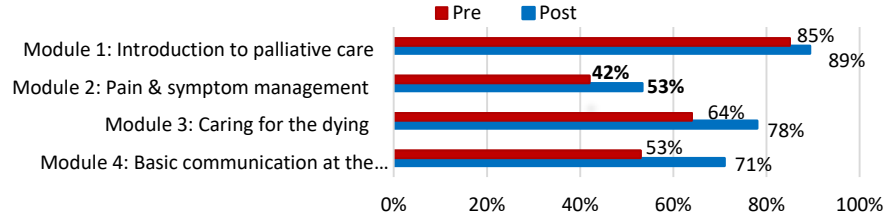
Blended Learning
- LCPC eLearning & Face to face sessions

Clinical Placement
- AH Inpatient, Day Care, Home Care
- Competencies

Continual Education
- Case discussion
- Journal club

Results

Figure 1: Average Test Score (Pre/Post) after e-Learning



- The e-learning post-test evaluation showed an overall improvement in knowledge, more emphasis on **symptoms management** are needed
- The face to face interactive workshops & clinical placement provided nurses with **different perspectives** on palliative care and deepened their knowledge through '**on-the-job' learning**

"Greater self-awareness, personal growth, experiences and perceptions in the process"

Conclusion

★ This training program is a **1st 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 nurse specialists in palliative care and an **ecosystem** of collaboration with hospital 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

Loo ME[1], Krishnasamy C[1], Chong R[2], Tan H[3],
[1]HOMER, National Healthcare Group, Singapore; [2] Pre-Professional Education Office, Tan Tock Seng Hospital, Singapore;
[3] Occupational Therapy Department, Tan Tock Seng Hospital, Singapore

Introduction

According to Johnson and Johnson (2002), five basic elements are essential for a cooperative situation to occur:

1. *Positive interdependence (PI)*
2. *Individual accountability (IA)*
3. *Promotive interaction (PrI)*
4. *Social skills (SS)*
5. *Group processing (GP)*

Aims:

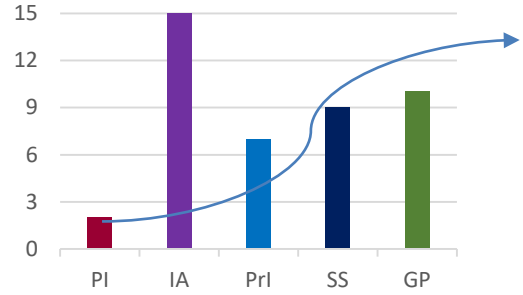
- To investigate if the five essential elements of cooperative learning are present during the placements conducted in a 2:1 (student: educator) format
- To understand how the five essential elements were perceived to be present or absent

Method

- Ethics approval was obtained, and participation was voluntary.
- All OT and PT students who attended 4 runs of placement from June to August 2019 were invited to complete an online survey on their experiences.
- Descriptive statistics were used to report the survey results.
- Open ended questions were sorted into categories.

Results

- **15** students completed the questions on cooperative learning.
- None of the students reported a presence of all five elements of cooperative learning in their individual clinical experience.



"We are graded separately as individuals and not as a pair… However, our combined presentation was a grade issued for the both of us so our grade was dependent on both of our performances." (PT18)

Conclusion

- If all the elements are essential for cooperative learning, educators should consider how activities for students could be structured for them to cooperate during their clinical placements.
- Future work could investigate the effects of each element in in a similar context.

Reference: Johnson, D. W., & Johnson, R. T. (2002). Learning Together and Alone: Overview and Meta-analysis. *Asia Pacific Journal of Education*, *22*(1), 95–105.

COMPUTER-BASED LEARNING OF RENAL FUNCTION IN MEASURING LABORATORY URINE FLOW RATE

Hoa NT[1], Due NTH, Si NQ, Chien NL, Anh TH
[1]Department of Physiology, Vietnam Military Medical University

Introduction

The computer-based learning (CBL) has been proved its strengths in medical training for years. This study has been implemented in order to evaluate the CBL's efficiency in a laboratory physiological practice on renal functions.

Methodology

40 sophomores have been recruited and randomly bisected into control and CBL groups. Students had to perform their practices, gather and analyze experimental data of ureter flow rate from rabbit suffering from some stimulants to clarify their roles to kidney function, then they had to make reports and submit to lecturer.

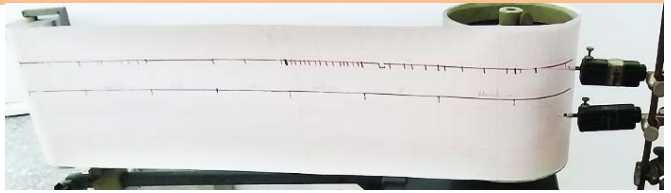
-Control group: practice in class-working scale with electric kymograph, paper-tape, ink-writing levers and electromagnetic markers;

-CBL group: same work in small team-working scale of 5 students with supported of a web-based program which had been developed on Labtutor system (AD Instruments, Australia).

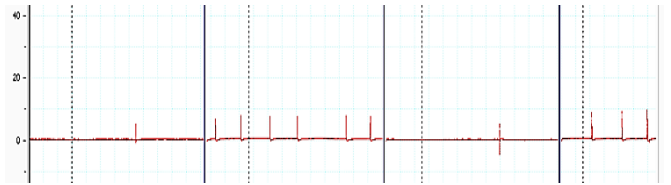
The reports then reviewed and marked with scale 0-10 by same lecturer.

Results

Control group



CBL group



The CBL group conducted the experiment with higher performance, analyzed results more correctly on factors that affects kidney function on urination, and showed more interesting to the experiment than those of control group.

Conclusion

Self-organised of team working in physiological computer-based practice may motivate students. This method encourage the self-training ability and increase student's interested in learning.

A Case Report Curriculum to Improve Scholarly Activities for Medical Students

Desmond Teo[1], Joo Wei Chua[2]
[1]National University Hospital, National University Health System, Singapore
[2] Alexandra Hospital, National University Health System, Singapore

INTRODUCTION

- Scholarly activity is an important component of medical school training and it is compulsory for Year 4 medical students from Yong Loo Lin School of Medicine, National University of Singapore (NUSMed) to participate in a scholarly project during their elective period.
- Barriers to scholarship include inexperience, insufficient time, lack of formal training, research curricula or mentorship and uncertainty of it.
- Case report is an ideal introductory and accessible form of scholarship.
- We piloted a case report curriculum for students who are keen on working on a scholarly project during their elective posting.

METHODS

- We conducted the case writing curriculum over 3 sessions in a 2-week period during their elective including:
  - ❖ Pre-reading materials,
  - ❖ Small group teachings and discussions, and
  - ❖ Pre- and post-workshop quizzes.
- Cases were identified by the authors. The students either worked individually or in pairs, and they had opportunities to share their work and reflections in the last session.

RESULTS

- 9 NUSMed Year 4 students participated in the case report curriculum.
  - ❖ None had formal training nor written case reports.
  - ❖ 7 had minimal or no prior experience with scholarly activities.
- Median scores for pre- and post-workshop quizzes were 6 (range 3 - 8) and 7 (range 5 - 9) respectively.
- 5 case reports were written with 1 abstract and 1 publication till date.

- All students agreed that this curriculum had been helpful and are inspired to engage in research in the future.

CONCLUSION

- A case report curriculum is an excellent way for medical students, especially research amateurs, to acquire useful skills in a structured and time-limited manner.
- A longitudinal follow-up can further evaluate the long-term effectiveness of this curriculum.

EXISTING PEDAGOGIES OF MULTIDISCIPLINARY EDUCATION FOR UNDERGRADUATE MEDICAL STUDENTS: A SCOPING REVIEW

C. Bok[1], Ng C. H.[2], J. Koh[2], Ong Z. H.[1], L. K. R. Krishna[3]

[1] Yong Loo Lin School of Medicine, Singapore, [2] Pharmacy, Faculty of Science, Singapore, [3] Division of Supportive and Palliative Care, National Cancer Centre, Singapore

Introduction

Medical students typically study in isolation from other healthcare disciplines but are expected to collaborate and communicate effectively within multidisciplinary teams (MDT) in clinical training after graduation. We seek to identify existing evidence in improving multidisciplinary communication and teamwork so as to inform the design of a multidisciplinary curriculum for undergraduate medical students.

Methodology

Using PRISMA guidelines, an initial search in 8 databases revealed 17,010 titles and abstracts. 250 full-text articles were reviewed and a total of 70 articles were included for thematic analysis in this scoping review. The quality assessment of the studies was done using the Medical Education Research Study Quality Instrument (MERSQI) and the Consolidated Criteria for Reporting Qualitative Studies (COREQ).

Results

Type	Examples	Development	Limitations
Curriculum based	Didactic lectures, learning seminars	Reflect upon contributions	Inexperienced teachers
Simulation based	Ward simulations, family meetings	Training MDT communication	Low participation
Experiential based	Clinical attachments, home visits	Longitudinal, hands-on tasks	Busy clinic timings

Quantitative evaluation results were obtained from surveys and self-reported outcomes, as well as facilitator measurements. Qualitative results were collected via Focused Group Discussions or through responses to open-ended questions in surveys.

Conclusion

Education interventions for students in MDT would require great support from relevant departments, and evaluation methods must be robust using both qualitative and quantitative methods with a longitudinal follow-up.

ATTITUDES OF HP STUDENTS TOWARDS IPE

Anna Karenina Vicencio-Causapin, MD, MHPEd
College of Medicine, Manila Central University (MCU), Philippines

Introduction

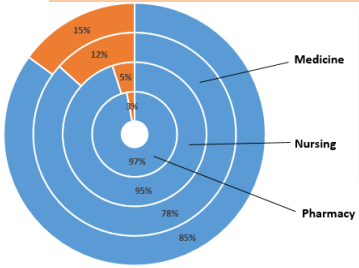
There have been **limited reports on IPE in the Philippine setting**. Studies in the local setting have shown that there is exposure on IPEC in the HP students' clinical rotations, though not explicitly stated.

Objectives: : (1) **determine the awareness** of the health professions (HP) students about IPE; (2**) describe the attitudes** of the different HP students toward IPE; (3) **describe the differences in attitudes on IPE** based on **sex, course, year level, prior clinical and/or IPE experience, and level of moral development**; and (4) determine which of the following variables can **predict the attitudes** of HP students on IPE – sex, course, year level, prior clinical experience, and level of moral development.

Methodology

Correlational study was done in one of the universities in Manila, offering HP courses since 1917. **Stratified random sampling** was done among the students from **1st year to 4th year** in the Colleges of **Medicine, Nursing, and Pharmacy**. Strict implementation was followed in the collection of data using a three-part validated instrument, **IPE Attitude Scale (IPE-AS)**. The scores were coded, tabulated, and analyzed using SPSS version10 for Microsoft. **Descriptive and inferential statistics** were used to analyze the distribution according to the different variables.

Results



	Sex	Course	Year Level	Prior Clinical and/or IPE Experience	Level of Moral Development
p	0.56	**0.0005**	**0.001**	0.81	**0.0001**

Majority of HP students **(84.9%) are aware** of IPE. Likewise, majority **(85.6%) have favorable attitudes** on IPE. Attitudes of HP students showed significant differences ($p<0.05$) according to **course, year level, and level of moral development**. Multivariate regression analysis showed that these three factors **have predictive values** in the determination of attitudes of HP students towards IPE

Conclusion

HP students are **aware** about and have **favorable attitudes towards IPE**. There is no significant difference in their attitudes based on sex and prior clinical and/or IPE experience. **Medicine students showed the most favorable attitudes** compared to nursing and pharmacy students. HP students in the **lower year levels and those in the postconventional level of moral development showed the most favorable attitudes**. The **course, year level, and level of moral development have 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).

[1]**Ding J,** [2]Yip CC, [3]Thng ZX, [3]Gan NY, [3]Tan JCH, [1]Yap ASJ
[1]Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore
[2]Department of Ophthalmology & Visual Sciences, Khoo Teck Puat Hospital, Singapore
[2]Department of Ophthalmology, Tan Tock Seng Hospital, Singapore

Introduction

Repetitive practice is essential to master clinical examination skills.
- Challenges: teaching manpower, time, environmental constraints.

Mental rehearsal (MR)
- Visualizing steps without physical movement.
- Enhances complex tasks performance.
  - Athletics, simulated surgery, music training.
- *Guided mental rehearsal **(GMR)** may benefit novices.*

Objective
- To evaluate the efficacy of GMR to improve CVFE learning in novices.

Hypothesis
- GMR improves the **cognitive** & **psychomotor** aspects of the **Confrontational Visual Field Examination (CVFE)** in novice learners.

Methodology

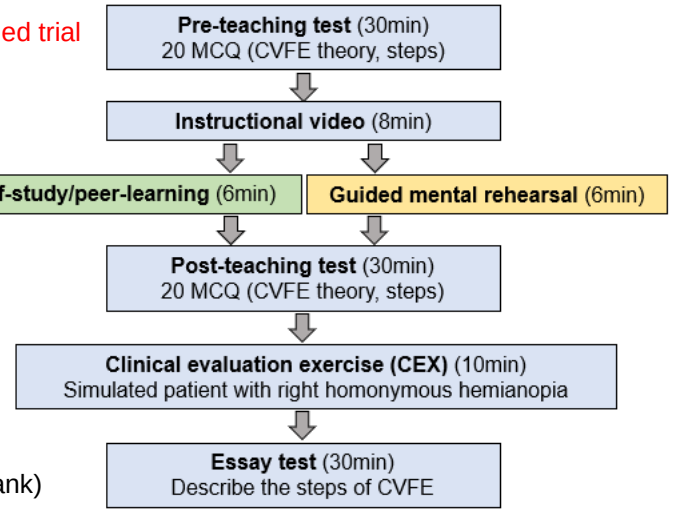
Design
- Single-blinded randomized controlled trial

Subjects
- 3rd year medical students (n=37)
  - Control (n=18)
  - Intervention (n=19)

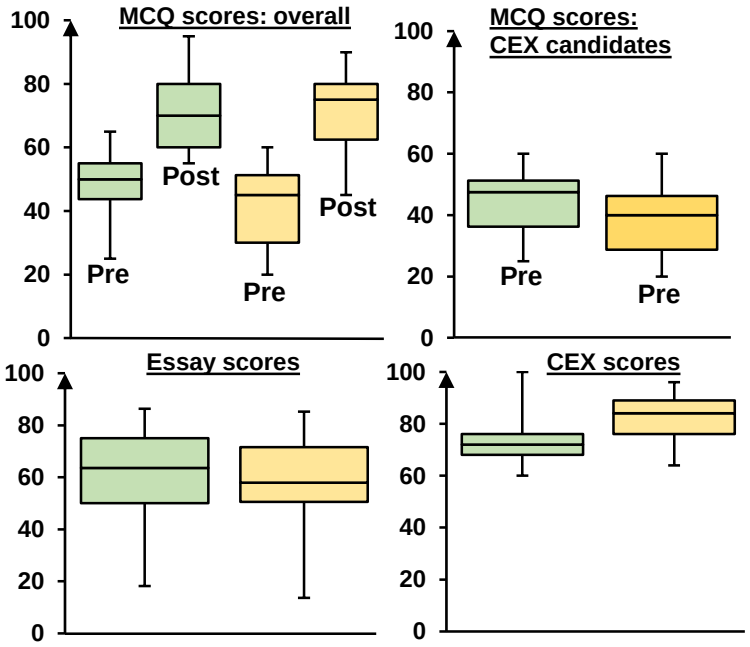
Assessment tools
- *Cognitive*: MCQ & essay tests
- *Psychomotor*: CEX
  - 10 candidates per group

Statistical methods
- Non-parametric tests

(Mann Whitney U, Wilcoxon signed-rank)
- α =0.05



Results



	Control	GMR	p-value
Pre-teaching	50.0%	45.0%	0.0708
Post-teaching	70.0%	75.0%	0.492
p-value	<0.01	<0.01	

Control vs GMR similar pre & post-teaching scores
- Significant improvement post-teaching

	Control	GMR	p-value
Pre-teaching (CEX candidates)	47.5%	40.0%	0.129

Subgroup analysis
- CEX candidates similar pre-teaching scores

	Control	GMR	p-value
Essay	63.6%	58.0%	0.756

Control vs GMR similar essay scores

	Control	GMR	p-value
CEX	72.0%;	84.0%	0.0205

GMR significantly higher CEX scores.

Discussion

Single GMR session resulted in **superior psychomotor but not cognitive performance.** GMR may:
- Reinforce the neuro-circuits of physical practice.
- Improve automation of recurrent aspects of tasks.

Application
- Part-task practice in instructional designs.
- Cost-free method of independent, self-paced learning.

Conclusion

GMR may be an **adjunct to e-learning** as it::
- Enhances acquisition of procedural knowledge.
- Improves actual performance of CVFE.

Repetitive, deliberate practice with GMR may:
- Further enhance skill mastery.
- Transit to independent MR.

GMR's long term benefits await future investigations.

IUCD INSERTION TRAINING
– EFFECTIVENESS OF VIDEO ASSISTED E-LEARNING MODULE

Ng LP, E Koh, Ma Zar, Lee JY, R Lim
Singhealth Polyclinics, Singapore

Polyclinics SingHealth

PRIME TRAIN+EQUIP+DEVELOP

Introduction

Procedural skill training has been challenging. We explore the extent of knowledge and skill transfer of a video-assisted E-learning module on IUCD insertion.

Method

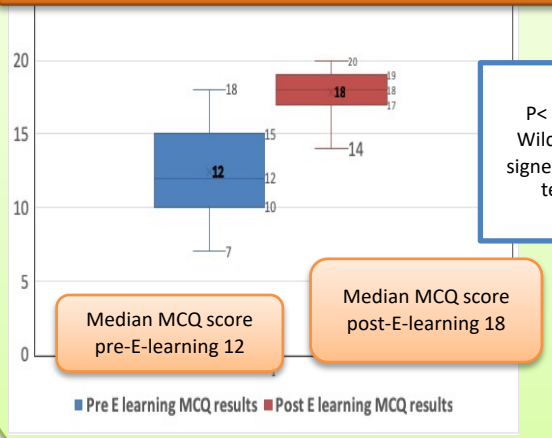
Quasi-experimental one group pre/post-test study.
31 primary care doctors recruited.

Pre E-learning	Knowledge test 20 MCQ (single best)
E-learning module (15-minutes)	E-learning design: Mayer's multimedia principles Content:-Procedural skill teaching framework Video-assisted -animated 3D video of procedure
Post E-learning	Knowledge test 20 MCQ (single best)
	Skill test Demonstrate steps of Nova T insertion on plastic model – video-taped, blinded grading by 2 raters using procedural checklist

Results

Knowledge
Significant increase in MCQ score post E-learning

Figure 1:- MCQ score pre and post E-learning



P< 0.01 Wilcoxon signed-rank test

Skill
Only **65%** attained minimal pass score for procedural checklist post E-learning

Procedural checklist
- Conjunctive standard setting for checklist score
- Minimal passing score (MPS): 14/18 with accurate performance of 2 critical items
- Interrater reliability:- perfect kappa coefficient 1.00 (p<0.001) for attainment of MPS.

Satisfaction
26 out of 28 (93%) participants agreed/strongly agreed that they are 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

Conclusion

The E-learning module is effective in imparting knowledge. Psychomotor skills, however, may not be achieved by E-learning alone. It has to be supplemented with hands-on learning.

SingHealth Academic Healthcare Cluster
PATIENTS. AT THE HEART OF ALL WE DO.
Singapore General Hospital · KK Women's and Children's Hospital · National Cancer Centre Singapore · National Dental Centre Singapore · National Heart Centre Singapore · National Neuroscience Institute · Singapore National Eye Centre · Polyclinics SingHealth · Bright Vision Hospital · Sengkang Health
Partner in Academic Medicine DUKE-NUS

Acknowledgement:- This project received AMEI Education Grant 2015

TEACHING ACTIVE EMPATHIC LISTENING (聽) IN GP CONSULT - A CASE REPORT

WM Wong
Dept. of Family Medicine, NUHS Residency, Singapore

D1001

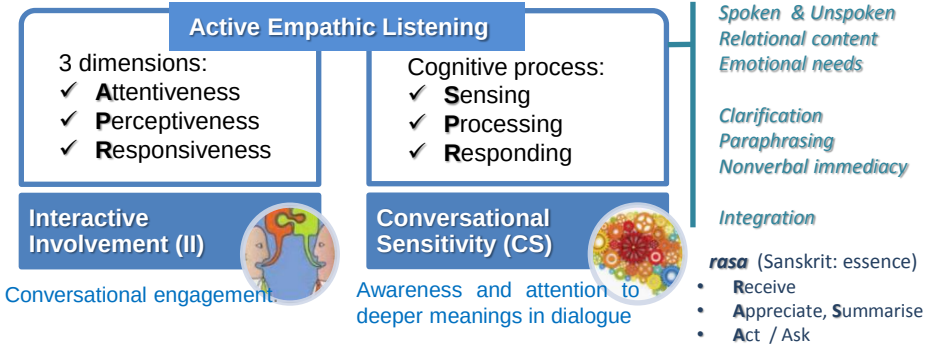
Introduction

Active empathic listening (AEL) (聽) is a crucial skill set for connecting to and understanding patients; the fundamental to the doctor-patient relationship (情). It increases patient satisfaction, improves patient well-being, and is deemed by patients as good quality care. Despite a plethora of literature on empathy and communication, there are few on AEL. Pedagogical methodology in communication has been diverse, with limited evidence to support each method. Currently, medical students are taught how to communicate and behave in a consult. However, little attention is paid towards training students in the art of listening (spoken and unspoken messages). Here we present a case report of a novel approach to teaching communication skills to undergraduate medical students.

Methodology

Undergraduate medical students rotating through their general practice (GP) preceptorship were given an opportunity to sit in with a faculty member running a GP clinic. During these sessions, students were encouraged to observe the patients as they enter the consult room and the consult conversation; paying attention to body language, tone and words used. After each consult, the faculty member guided the students using a series of questions towards perspective taking, and to reflect upon both spoken and unspoken cues. Students were also guided to observe how patients responded to what the doctor said, and to be mindful of the need to adapt the conversations moment by moment while considering the patient's ideas, concerns and expectations.

Results



Students were given a flavor of the 2 domains of AEL: II and CS. They also developed the skill of interpreting (RIME framework); building competency in detecting deeper meaning in words spoken, perceiving power, 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 given to the art and skill of AEL.

It is crucial that physicians-in-training learn how to listen actively to distil the *"rasa" (रस, essence)* in any consult conversation. This not only enable accurate diagnoses, but also build therapeutic relationships which facilitate shared decision-making towards holistic person-centred care.

STUDENT PERCEPTION ON THE EFFECTIVENESS OF DIFFERENT TEACHING LEARNING METHODS USED IN GENERAL PATHOLOGY

Z. Mansoor, AAH Priyani, GG Ranaweera, DJB Dumbutuge, HD Wijesinghe, MVC de Silva
Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka

Introduction:

Different innovative teaching learning methods(TLM) are perceived differently by students. A wide range of TLM are used in the Faculty of Medicine, Colombo to teach general pathology to second-year medical students in the Foundation Module which runs over a period of nine weeks. These include lectures, practicals, tutorials, clinical lecture discussions (CLD) and virtual learning environment (VLE) activities..

Objectives:

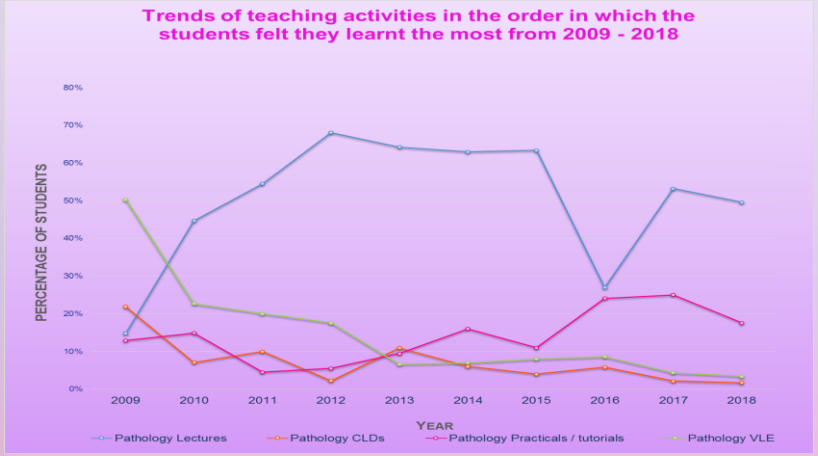
To determine medical students' perceptions on different TLM used in the teaching of general pathology.

Methodology:

- 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 lectures (Pathology and other subjects) as combined lectures series.
- From 2014 onwards lectures were analyzed as separate individual subjects for more validity and accuracy of the evaluation.
- The teaching activity from which they learnt the most and the activity that they found most interesting were assessed.

Results:

Lectures, practicals/tutorials, VLE, and CLD comprised 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 (Mean 50.25%, Range 14.80% - 68.10%) followed by practical/tutorials (Mean-14.10%,Range 4.50 - 25.00%) .

VLE was selected as the most interesting activity from 2009-2018 (Mean-38.39%, Range 3.40% -50.30%) .
Following introduction of team based learning during practicals in 2016, students selected practicals as the most interesting activity (Mean-22.70%, Range 7.10% - 50.20%). The preference for this activity increased from 24.80% in 2015 to 36.64 % in 2016 (P= 0.092). Trend analysis of practicals showed a linear increase whereas the trends of VLE and lectures fluctuated.

Conclusions:

- Pathology lectures are the TLM 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 TLMs.

Development and use of 3-dimensional printed tube thoracostomy task trainer

Chen W.H.[1], Radzi S. [1], Chiu L.Q.[2], Yeong W.Y.[3], Mogali S.R.[1]
[1]Lee Kong Chian School of Medicine, Nanyang Technological University, 11 Mandalay Road, Singapore 308232, Singapore
[2]Department of Emergency Medicine, Tan Tock Seng Hospital, 11 Jalan Tan Tock Seng, Singapore
[3] Singapore Centre for 3D Printing, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

Introduction

- Thoracostomies require technical expertise due to clinical urgency and potentially serious complications, thereby necessitating rigorous training.
- Current simulation modalities lack anatomical details, and suffer from logistical, ethical, religious and cost concerns.
- **Aim:** to develop and evaluate a cost efficient, anatomically accurate thoracostomy task trainer using 3D printing technology.

Methods

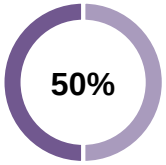
Anonymised computer tomography data of a patient's thorax was segmented and processed using 3D slicer software.

The main frame was printed using fused deposition modelling with polylactic acid and thermoplastic urethane. The replaceable piece was printed with material jetting using VeroWhite and Tango Plus. Skin coloured silicone was then applied.

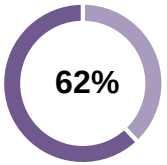
25 emergency physicians tried and evaluated the task trainer based its anatomical fidelity and effectiveness as a learning tool using a 5 point Likert scale. Mixed method analysis was used to process the data.

Results

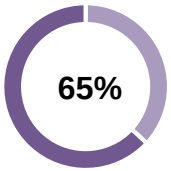
Figure 1. Benchtop model of the main frame (left). Closeup of the replaceable piece (right)



Agree it is anatomically accurate



Agree it is an effective learning tool



Overall satisfaction

- A complete trainer costs ~ SGD $130 (USD$97), plus 120 hours of printing time.
- Junior learners rated more favourably compared to senior learners, especially in dissection, suturing and overall satisfaction.

Conclusions

- Our task trainer is cost efficient, provides adequate anatomical detail, and was well received by physicians. It is convenient to store, reproducible and avoids many ethical or religious considerations.
- As a part task trainer, we found that junior physicians would likely benefit more from its use compared to experienced learners.
- Future improvements include exploring new materials in order to create a thicker chest wall and simulating the haptics of puncturing the pleura. With further development, this task trainer can be a viable adjunct in teaching thoracostomies.

Mode and Timing of Feedback preferred by Radiology Residents

Dr TANG Phua Hwee
Department of Diagnostic and Interventional Imaging, KK Women's and Children's Hospital, Singapore

Introduction

Previous survey of radiology residents in KK Women's and Children, Hospital, Singapore, showed that that feedback from radiologists was highly valued, coming in 2nd, just 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 it most preferred.

Methodology

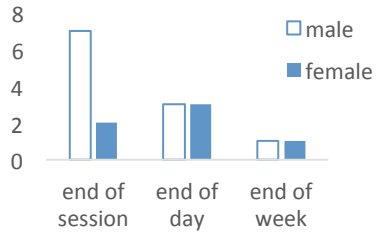
Radiology residents rotating into Department of Diagnostic and Interventional Imaging in year 2019 were surveyed as to the **form of feedback** (face to face, sms/whatsap, e-mail, computerized printout generated by RIS) and **timeliness** (at the end of morning or afternoon reporting session, end of 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

17 residents were surveyed, 11 males and 6 females.
3 R2s, 9 R3s (5/9 post FRCR), 5 R4s (5/5 post FRCR).
16 **(94%)** preferred **face to face** feedback from radiologists.
1 female, R3, post FRCR resident chose sms/whatsap text message.
None of the residents chose e-mail or computer printout of feedback.

Most preferred feedback at the end of session (9 residents), 6 end of the day and 2 at the end of the week.

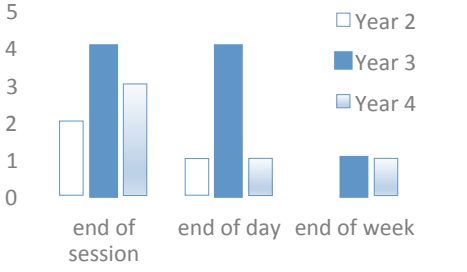
Feedback with respect to gender



For males,
64% selected end of session,
27% end of day and
9% at end of week.

For females,
50% selected end of the day,
33% end of session and
17% end of the week.

Feedback with respect to Residency year



Pre FRCR Residents preferred earlier feedback
71% at the end of the session,
29% at the end of the day.

Post FRCR Residents, results were
40% end of the session,
40% end of the day,
20% end of the week.
(p=0.01)

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 induces paradigm shift and motivates students to study

Muslim Abbas, Nasir Ali Afsar, Muhammad Yahya Peracha, Muhammad Ali Marfani, Muhammad Ali Sadiq, Rabeea Rizwan.
Department of Pharmacology, Jinnah Medical & Dental College, Karachi, Pakistan

Introduction

Pharmacology is considered a difficult, boring and volatile subject, discouraging students to engage in learning. Students usually adopt a strategist approach which may result in knowledge gaps and poor scores, thus further strengthening such perception. *We explored whether a structured pharmacology quiz motivates learning*.

Methodology

Study design: non-randomized educational intervention trial
Population: n=353; dentistry (BDS) year 2 (n=48), and medical (MBBS) years 2-4 students (n=106, 105, 94 respectively)
MCQ Testing points and eligibility to participate: a baseline pre-quiz (PreQ) pharmacology test, a quiz qualification (QQ) test and a follow-up post-quiz (PostQ) test. *QQ determined participating groups*.
Intervention: A 4-round, knock-out quiz contest was held between student groups based on QQ test scores.
Student feedback: obtained with PreQ and PostQ tests.

Conclusion

The quiz induced a positive change in students' perception about pharmacology, improved their complaining behavior and stimulated them to study, especially to prepare for exams and achieve honor.

Results

Figure-1: Student test scores in PreQ, QQ and PostQ tests.

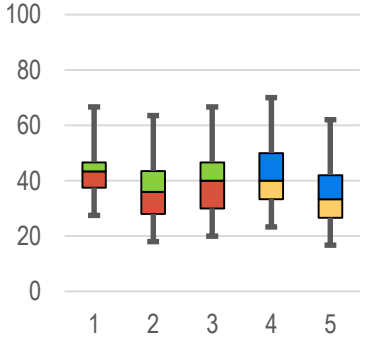


Table-1: Reasons (%) underlying perception of pharmacology as a subject.

Comment / Reason	Pre Quiz (n=208)	Post Quiz (n=167)
Hard to memorize / learn	36.1	25.7
Too many drugs	10.1	9.0
Professionally useful	12.5	23.4
Interesting mechanisms / concepts	5.8	8.4
It interests me	11.5	10.2
Useful lectures/good faculty	7.7	10.2

N = PreQ 233; QQ 97; PostQ 194;
Test scores: Figure 1 PreQ + QQ + PostQQ = 46; ***Graph 1,2,3***
PreQ + (QQ or PostQ) = 117. ***Graph 4,5***

Paradigm shift PreQ vs PostQ:
Increased *self-study* (66.8% to 74.5%) and *textbook use* (30% to 46.6%).
Perception: from "Difficult" (42.9% vs. 29.9%) to "Interesting" (37.2% vs. 54.1%) (reasons for perception given in Table 1).
A decline in their complaint about teaching (43.2% vs. 15.4%);
PostQ feedback: Reasons to participate: exam preparation (26.6%), prize (22.8%). Quiz motivated to study pharmacology (70%), demand to conduct more quizzes (36%); "Pharma has become interesting" (8%).

MODALITIES OF BLENDED AND ONLINE LEARNING IN THE MEDICAL CURRICULUM – WHAT WORKS?

香港中文大學醫學院 Faculty of Medicine The Chinese University of Hong Kong

Carmen Wong[1,2], Philip Au-Doung[1], Samuel Yeung Shan Wong[1], Paul Lai[2] **Email: carmenwong@cuhk.edu.hk**

[1]The JC School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong S.A.R.

[2]Office of Medical Education, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong S.A.R.

Introduction

This study explores students' and teachers' expectations of, and experiences in E-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 (5): Course outcomes (cognitive / emotional)

Methodology

A survey of the above domains were completed by students and teachers (course coordinators). Spearman's rank order correlation was used to explore students' expectations and experiences and association with course satisfaction.

Conclusion

The findings emphasise important components in online learning development, support and use from students and teachers; consistent with literature on the importance of the structure, interface and the advantages of convenience and flexibility for students. However, student-teacher contact can be enhanced and competency in learning needs further exploration.

Results

Student response rate 30.7%

87 preclinical

39 preclinical

4 blended learning courses using various approaches:

- Human Structure (anatomy)
- Integrated Clinical Communication Skills I
- Health in Community E-course
- BASIC course (acute care)

Correlation of students' experiences with course satisfaction	Spearman's rank order correlation
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
Decide own pace to learn	r=0.605, p<0.001
Opportunity to acquire knowledge via self-testing	r=0.608, p<0.001

Course coordinators	Mean±SD (6: very important)
A clear course structure and materials	5.33±0.52
Platform usability	4.67±0.52
Flexibility of learning	5.50±0.55
Support students' learning motivation	4.67±0.82
Facilitate contact with students	2.40±1.67

Course coordinators disagreed that they often deal with technical problems (2.67±0.82) and also disagreed that students were competent learning by themselves (3.67±1.63)

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

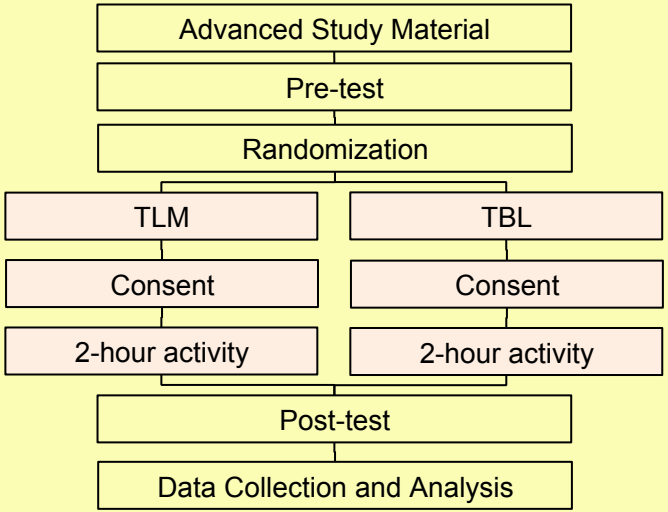
Diamante DA, Ferrater EM, Jove MJ, Ramos GA, Tiu J, Lawenko M
De La Salle MHSI Philippines - College of Medicine

INTRODUCTION

Team-Based Learning (TBL) revolves around student initiated activities, constructivism and problem-based modules where students work in small functional groups to maximize both individual and group dynamics. The study aimed to determine the effectiveness of TBL compared to the Traditional Lecture Method (TLM) on fourth year medical students by comparing post-exposure evaluation scores between the two arms of the study.

METHODOLOGY

- 74 Fourth Year Medical Students
- Exclusion and Inclusion Criteria
- Researcher Blinding and Allocation Concealment



RESULTS AND DISCUSSION

1. Post-Test Scores

Method	n	Mean Score	Std. Dev
TLM	37	95.56	8.23
TBL	37	98.89	4.52

2. Statistical Analysis
   - Two sided confidence interval of 95%
   - t-test for equal variance **p-value = 0.03423**

TBL resulted with a relatively superior result compared to TLM which showed a significant statistical difference. A p-value of 0.03423 was generated with a confidence interval of 95% in comparing the mean post-test scores of the two arms.

CONCLUSION

Statistical evidence revealed that TBL is more effective than TLM in terms of post-test scores. This shows the applicability of TBL among 4th year medical students and its effectiveness in short term knowledge retention.

COMPARING ANGOFF AND BORDERLINE REGRESSION STANDARD-SETTING METHODS IN A SMALL COHORT OSCE

Xanthe BL CHUA[1], J LIM[1], K TAN[2]

[1]Nursing Service, Tan Tock Seng Hospital, Singapore, [2]Department of Neurology, National Neuroscience Institute, Singapore

Faculty of APN internship Training (F.A.T)

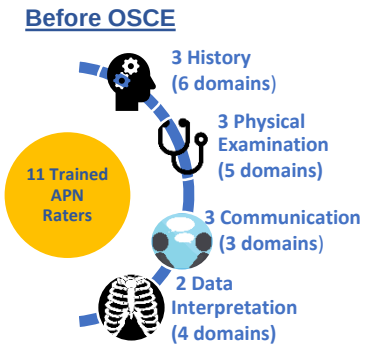
Background

The Faculty of Advanced Practice Nurse internship Training (FAT) in TTSH runs small cohort Objective Structure Clinical Exam (OSCE) every year. For standard setting, it is not clear if judgmental methods like the Angoff or empirical methods such as Borderline Regression (BR) is more defensible to set a passing score.

Objective

We aim to compare the cut-off scores between 2 variations of modified Angoff and BR in the APN preparatory OSCE.

Methods



Few months prior to the OSCE, the 11 APN Raters estimated 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). Next, they 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).

After the OSCE, BR was used to calculate the cut-off score generated by the means and the global ratings using linear regression.

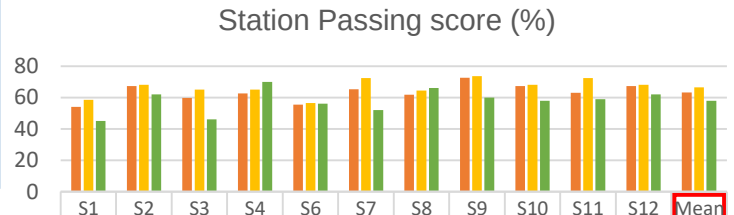
Results

History-taking
S3, S8 & S11

Communications
S4, S9 & S12

Data Interpretation
S1 & S6

Physical Examination
S2, S7 & S10



	S1	S2	S3	S4	S6	S7	S8	S9	S10	S11	S12	Mean
Angoff Composite %	54.0	67.2	59.7	62.7	55.5	65.2	61.7	72.7	67.2	63.0	67.3	63.3
Angoff Global %	58.6	68.2	65.0	65.0	56.4	72.3	64.5	73.6	68.2	72.3	68.2	66.6
BR %	45.0	62.0	46.0	70.0	56.0	52.0	66.0	60.0	58.0	59.0	62.0	57.8

Standard Setting Methods	% of Candidates passing OSCE
Angoff Global	33.3%
Angoff Composite	50%
Borderline Regression	75%

Conclusion

Standard-setting using both Angoff global and Angoff composite methods produced higher cut-off scores, hence a higher failure rate leading to unrealistically high failure rate. BR method produces a lower cut-off score and more realistic overall pass rate and it remains a defensible and feasible method as it requires lesser manpower and time. Use of modified Angoff in a small cohort OSCE needs to be done with care.

Development and Evaluation of a Mobile Anatomy Application for Learning External Cardiac Anatomy

Koh H.J.[1], Yap P.H.[1], Mogali S.R.[1]
[1]Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Introduction

- Anatomy teaching is a core component of medical curriculum.
- Shortages and logistical constraints have limited the use of cadaveric materials, and newer technological methods are becoming popular.
- Current technological resources are expensive, and use illustrated 3D models which are not representative of real human specimens.
- Aim: To develop a novel mobile anatomy application using photogrammetry 3D models based on plastinated human specimens and evaluate its effectiveness in instruction of external cardiac anatomy.

Methodology

Development of application

- 3D model created by photogrammetry using Autodesk Recap
- 3D model refined using Autodesk Maya
- 3D model exported to Unity3D for application development
- Application exported and deployed to iOS devices using Xcode

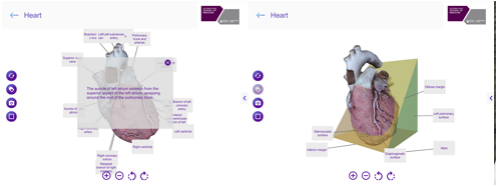
Evaluation of application using randomised controlled trial

- Recruitment of first year undergraduate medical students
- Pre-test
- Randomisation into control group and intervention group
- Post-test and questionnaire

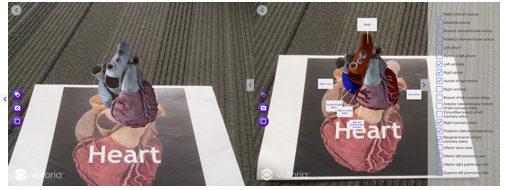
Statistical analysis

- Test scores compared using Student's t-test
- Quantitative Likert scale data and qualitative feedback data from questionnaire were processed

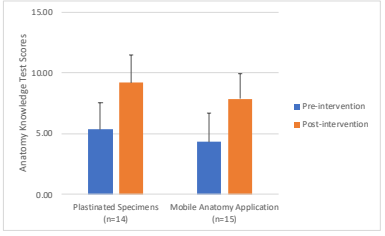
Results



Application in 3D touch mode



Application in augmented reality mode



Similar improvement in scores in both groups

Attention and motivation	• Control: 3.75/5 • Application: **4.07**/5
Experience	• Control: 3.45/5 • Application: **4.47**/5
3D Comprehension	• Control: 3.74/5 • Application: **4.16**/5

Student perceptions of the application was positive

Conclusion

- To our knowledge, this is the first mobile anatomy application which uses photogrammetry 3D models representative of real human specimens.
- The application is comparable to existing methods in achieving learning outcomes.
- Students using the application had a significantly better experience.
- The application could be considered to complement existing anatomy pedagogy.

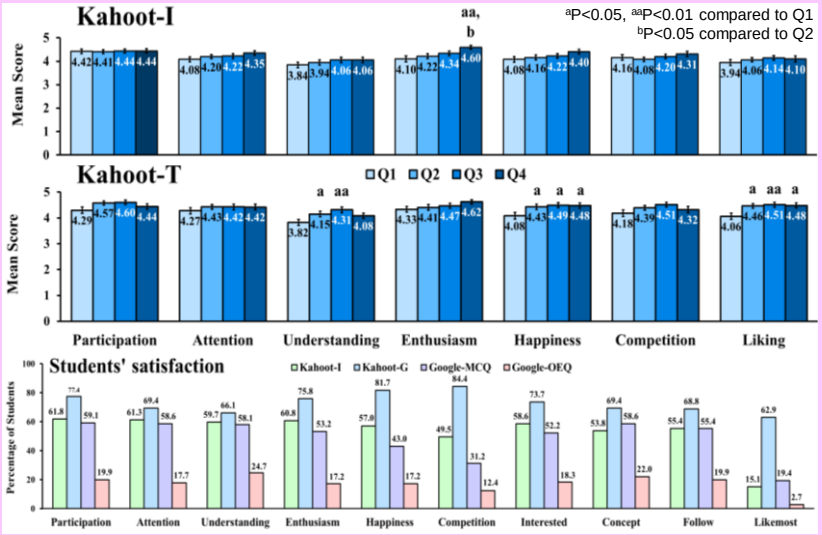
Mahidol University
Faculty of Medicine
Siriraj Hospital

Effects of using audience response systems on learning of medical students in a large class

Vasu Lertsiripatarajit[1], Chantacha Sitticharoon[1]*, Punyapat Maprapho[2], Issarawan Keadkraichaiwat[1]
[1]Department of Physiology, [2]Department of Medical education, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Introduction: Many formats of audience response system (ARS) were used including Kahoot used as individuals (Kahoot-I) or team (Kahoot-T); and other formats created by combining Google Form and Google sheet to ask multiple choice questions (Google-MCQ) and open-ended questions (Google-OEQ). In some group activities, Google-MCQ was used for a particular objective that pretest questions were similar to posttest questions (SimilarPrePost) to evaluate students' progression.

Methodology: This study compared students' perspective in using each ARS format in many aspects including augmenting students' 'participation', 'attention', 'understanding', 'enthusiasm', 'happiness', courage to ask/answer questions ('asking/answering'), capturing concept ('concept'), liking of ARS ('liking'), friendly competition ('competition'), feeling interested in teaching content ('interested'), and following content ('following') with or without subgroup analysis into quartiles of their summative scores (Q1(lowest)-Q4(highest)). Students were asked by questionnaires to rate their opinions whether ARS could enhance their learning compared to traditional lectures in a Likert scale, 1(strongly disagree)-5(strongly agree), with 86.22% (269/312) respondents.



Results: Students rated scores >4/5 for almost all aspects in all ARS formats except understanding for Kahoot-I. Among all ARS formats, score for Kahoot-T was rated highest in almost all aspects.

For SimilarPrePost, students rated the highest score for all aspects compared to other ARS formats. 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: ARS could promote student's learning in many aspects. Students with low academic achievement rated lower score than other students in many aspects. 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.

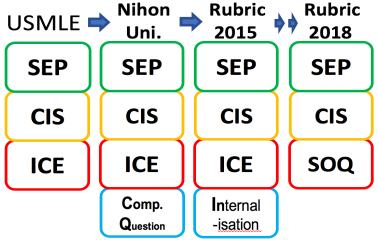
A RUBRIC TO ASSESS THE PERFORMANCES OF FIRST- AND SECOND-YEAR JAPANESE MEDICAL STUDENTS TAKING PATIENT HISTORIES IN ENGLISH

Yamamori T[1], Oshimi T[2], Kuru Y[1], Jego E H[3], Miyamoto A[4], Yasuda M[5]

[1]Department of Foreign Languages, Aichi Medical University School of Medicine, Japan, [2]Office of Medical Education, International University of Health and Welfare School of Medicine, Japan, [3]Department of Liberal Arts, Nihon University School of Medicine, Japan, [4]Department of Psychology, Aichi Medical University School of Medicine, Japan, [5]Department of Neurosurgery, Ichinomiya-nishi Hospital, Japan

Backgrounds and Aims

Our rubric comprises three scoring sections that were originally taken from the USMLE Step 2 CS: spoken English proficiency (SEP), communication and interpersonal skills (CIS), and integrated clinical encounter (ICE). The first challenge was to make a suitable ICE section for pre-clinical medical students who had difficulty choosing relevant questions for a possible diagnosis. After two modifications, our 2018 version resulted in SEP, CIS and Sequence of Questions (SOQ). This study investigates user feedback and discusses the usability of the evaluation rubric in its application to a larger cohort to refine the descriptors in the three areas and to confirm level settings.



Methods

A 50-minute interview was conducted between rubric developers and a medical doctor teaching a history-taking skills course of 140 first-year students in English. This doctor used the 2018 version of our rubric to evaluate the students' history-taking performance. For this study, his responses to our open-ended questions were analyzed to ascertain user impressions regarding the rubric's usability in applying it to a large cohort.

Results

In SEP, the level setting of the highest level needed clarification.

Rubric 2018	observable behaviors
SEP: speak clearly and naturally with appropriate pronunciation, word choice & grammar (9-8-7);...	**SEP:** confirming the information (+), ...
CIS: demonstrates excellent empathetic & professional manners as a doctor (9-8-7);...	**CIS:** eye contact(+), no self-introduction(-),...
SOQ: asks questions responding to what the patient says (9-8-7);...	**SOQ:** getting lost for questions (-), ...

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 rubric, user feedback was collected through an interview. Feedback included suggestions for further improvements of descriptors and level settings, and the possible addition of another criterion to the SOQ. More external opinions should be systematically incorporated to enhance the usability and validity of our rubric.

Acknowledgement This work was supported by JSPS KAKENHI Grant: 16K02988.

Sengstaken-Blakemore Tube Insertion: An Innovative Approach to Simulation-Based Training

Ho KHJ[1], Yip AWJ[1], Koh JYC[1], Yeow CWM[2], Low HC[1]

[1] Division of Gastroenterology and Hepatology, University Medicine Cluster, National University Hospital, Singapore.

[2] Division of Gastroenterology and Hepatology, Tan Tock Seng Hospital, Singapore

Introduction

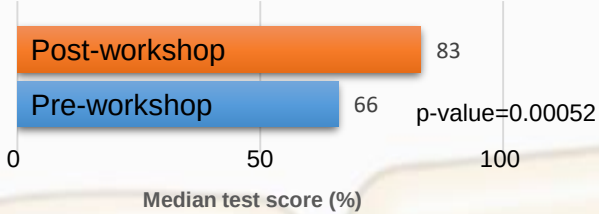
Sengstaken-Blackmore tube(SBT) insertion is a life-saving, salvage intervention to secure haemostasis for bleeding oesophageal varices. Its declining use has resulted in lack of experience and confidence with SBT insertion. Potentially fatal risks with incorrect placement have highlighted the need for formal training.

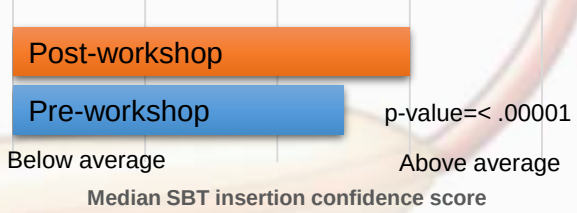
Methods

38 doctors participated in structured training workshops. Pre/ post- surveys assessed key knowledge including SBT insertion sequence and post-insertion monitoring and management. A tutorial and interactive demonstration was followed by hands-on practice using an SBT and endoscopy on a model made from flexible PVC plastic tubing attached to the top half of a plastic bottle.

Results

- 84% of all participants felt that the ability to insert an SBT was of above average importance. 80% felt more training in SBT insertion was required. Perceived confidence in SBT insertion moderately correlated to the years of endoscopic experience (rs=0.35, p=0.03), yet there was no statistically significant difference in overall pre-tutorial scores, irrespective of prior endoscopic experience.
- 61% did not correctly identify all potential complications of SBT insertion. Of note, 40% and 24% were not aware of the risks of asphyxiation and oesophageal rupture respectively. Whilst 83% correctly identified pressure necrosis as a potential complication, 73% and 68% incorrectly identified the maximum pressure when inflating the oesophageal and gastric balloon respectively.
- 96% of respondents agreed the training session was useful in learning about SBT preparation, insertion and post-insertion management. 100% agreed that practice on the mock-up unit was beneficial in practising SBT insertion. Pre vs post-workshop, significant improvement in median test scores and SBT insertion confidence was observed.





Conclusion

Training with this mock-up unit is a simple and cost-effective option for simulating SBT insertion. Visual conception and invaluable hands-on practice increases operator confidence and should be considered for future training. Important deficiencies involving awareness of complications, SBT insertion and aftercare need to be addressed.

ACADEMIC-PRACTICE COLLABORATION IN THE PRECEPTORSHIP OF FINAL YEAR NURSING STUDENTS

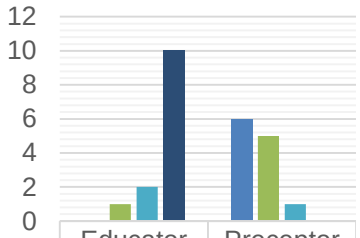
Manisha Dev, Khairul Dzakirin, Lau Siew Tiang Lydia, Liaw Sok Ying
Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore

Introduction

Academic educators and nurse preceptors are expected to collaborate to facilitate the integration of nursing students' didactic knowledge to clinical practice in preceptorship programs. However, academic-practice collaboration appears to be lacking.

Methodology

- Purposive sample of academic educators (n=13) and nurse preceptors (n=12) from one university and three hospitals in Singapore.
- One on one semi-structured interviews lasting 45-65 minutes transcribed verbatim and analysed using thematic analysis.
- Explored experiences in supporting clinical teaching and learning, and essential partnership elements lacking in preceptorship programs.



	Educator	Preceptor
≤ 2	0	6
3 to 5	1	5
6 to 10	2	1
> 10	10	0

Years of Experience in Clinical Teaching

Results

Lack of direct communication	Uncertainty about learning objectives	Discrepancy in clinical assessment	Not knowing each other's practices
"Preceptors have their own hospital CI who work with them directly. If I spotted something of concern, I would not directly work with the preceptor." (Educator)	"The preceptor told me that the student was to do basic nursing care." (Educator)	"Instead of marking them as novice they're benchmarking them as expert." (Educator)	"The nurses are not sharing with me. I won't know whether the students are doing the workflow correctly." (Educator)
"Whatever concerns us, we relay it to the CI." (Preceptor)	"I don't have understanding that they're in that transition period." (Preceptor)	"The facilitators tell us to change our evaluation of the student." (Preceptor)	"I want to see the hospital's protocol and your school's protocol." (Preceptor)

Conclusion

- Development of online preceptorship program and online discussion platform
- Joint clinical assessment among academic educators and nurse preceptors
- Joint clinical teaching involving alumni practicing nurse preceptors

Pilot Course: Learning How to Learn Effectively

Associate Professor Wayne Hazell [1,2], Dr Mai Su [2], Dr Abbas Farrukh [2]
1 Northside Clinical Unit, University of Queensland, Australia, 2 The Prince Charles Hospital Emergency Department, Queensland, Australia

Introduction

Postgraduate exams often have low pass rates (ACEM written exam 2019.1: only 51% candidates passed), while medical students are often used to very high pass rates. Students may be able to progress without optimal learning strategies but possibly get caught out at the postgraduate levels required. In response to the high ACEM written failure rate we ran a 2-day course that included effective learning evidence and activities to reflect on this. Is it a reasonable assumption that postgraduate doctors sitting speciality exams know the evidence behind effective study techniques and/or have had teaching about this previously?

Methodology

Learning theories & concepts that were addressed included retrieval practice, elaboration, spaced practice, interleaving, dual coding, concrete examples, dissonance, organization, consolidation, ICAP theory, desirable difficulty, cognitive load theory, cognitive aids, expectation value theory, deep & superficial learning, self regulated learning, threshold concepts, “becoming”, contextual knowledge, defended learners, and types of knowledge (difficult, ritual, alien, tacit, inert).
A post course survey asks participants to respond to a statement on a 10-point scale from strongly disagree to strongly agree. It also rated techniques used from 1 not useful to 10 very useful. The course was rated from 1 very poor to 10 excellent. Participants made free text comments about new and most useful concepts; and any likely change in approach.

Results (N=13)

Selection of Statements	Range	Med
I have had similar teaching re effective learning theory	1-9	3
Learned multiple new concepts & theories	5-10	9
Reflect on exam prep strategy & modify approach	7-10	9
Learned new study techniques that I will now use	5-10	10
Effective learning strategies useful earlier in training	8-10	10
Technique: ICAP	6-10	9
Technique: Think aloud trial paper	3-10	9
Technique: Identify what you know or don’t know	4-10	8
Overall rating	7-10	10

Conclusion

In this small pilot course it seems that most doctors learned more about effective learning strategies and had not necessarily had this teaching earlier in their careers. Perhaps it is best not to make the assumption that doctors are learning as effectively as they could be prior to postgraduate exams. Undergraduate and postgraduate clinical teachers should consider teaching about evidence based effective learning strategies.

TRENDS AND FACTORS RELATED TO THE KNOWLEDGE AND CONFIDENCE OF OCCUPATIONAL THERAPISTS IN THE PROVISION OF BASIC LOW VISION SERVICES

Lim Y. H., Boey S. D., Lim Y. J. E. Occupational Therapy Department, Tan Tock Seng Hospital, Singapore

Introduction

It is highly advocated that all Occupational Therapists (OTs) be able to provide basic low vision (LV) services for people with vision loss[1]. We aim to explore (i) OTs' perceptions on training adequacy, confidence and knowledge levels, (ii) factors related to confidence and knowledge, and (iii) barriers in managing inpatients with vision loss in Singapore.

Methodology

35 acute inpatient OTs without specialised LV training completed a (i) survey exploring perceptions on training adequacy and confidence levels using a 3-point Likert scale and (ii) knowledge quiz adapted from a published resource[2].

Results

83% of OTs perceived inadequate preparedness from their academic programme. 94% indicated an interest to seek further LV training. Knowledge and confidence scores are illustrated in Tables 1 and 2, respectively.

Table 1: Mean Knowledge Scores

Overall Score (20 Questions (Q))		13±2.6
Sub-scores	Eye Conditions (5Q)	3.1±1.2
	Assessment (7Q)	5.1±1.4
	Interventions (6Q)	3.7±1.3
	Discharge Planning (2Q)	1.0±0.5

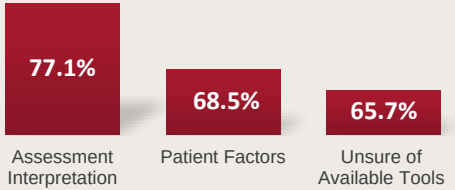
Results (Continued)

Prior experience working with eyecare professionals or community resources was significantly associated with perceived confidence ($p<0.05$). Overall, there was an inverse trend between (i) years of practice and knowledge scores, and (ii) overall confidence and knowledge scores. The top three identified practice barriers are shown in Figure 3.

Table 2: Confidence Ratings

Mean Score (out of 100)		57±12.2
% Confident in	Screening/Interventions	30%
	Discharge Planning	11.4%

Figure 3: Identified Practice Barriers



Conclusion

Findings revealed a crucial need to improve post-graduate LV training by developing a simplified curriculum tailored to the learning needs of inpatient OTs. Training should be consistent, structured and focused on (i) assessment result interpretation, (ii) practical utilization of assessment and intervention tools, and (iii) discharge planning in terms of awareness in community resources, rehabilitation options and access to eyecare professionals.

[1]Winner, S., Yuen, H.K., Vogtle, L.K., Warren, M. Brief report – factors associated with comfort level of occupational therapy practitioners in providing low vision services. *American Journal of Occupational Therapy*. 2014; 60(1): 96-101.
[2]Warren, M. *Low Vision Occupational Therapy Evaluation and Intervention Older Adults*. Bethesda, MD: American Occupational Therapy Association Inc; 2008.

The Association of Distance and Travelling Time to Campus of Medical Students of Atma Jaya Catholic University with Lateness Frequency and GPA

Soegianto Ali, Aurelia Stella Stephanie, V. Dwi Jani
Medical Study Programme, Atma Jaya Catholic University of Indonesia. Jl. Pluit Raya No. 2, Jakarta Utara 14440, Indonesia

Introduction

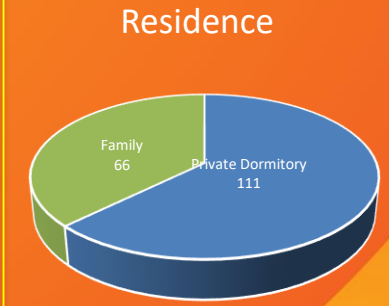
A substantive number of the Atma Jaya Medical Students as well as those from suburb of Jakarta have to live in private dormitories in the vicinity of Campus. Others are living further and needs more travelling time.

The aim of this study was to evaluate the lateness frequency and the GPA of students who lived in the private dormitories in the vicinity of the campus and compared it to that of students who lived further with their family.

Methods

Respondents were all 2nd year students. Inquiries are: Distance of residence to the campus; mean of transportation; duration of travelling time and the frequency of lateness in their first academic year. ANOVA test was used to assess the association of the abovementioned data, lateness frequency and GPA.

Results



Most 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). Family's houses were located > 500 m (98%), travelling time was more than 30 min (76%) and needed to use various transportation.

Frequency of lateness in 2 groups was similar.

GPA of students who were rarely late was higher than students who were late 1-2 times a month (3.27 vs 3.05 from scale to 4.00. p =0.02)

Conclusions

Distance, duration of travelling time, and mean of transportation were not related to the frequency of lateness. GPAs of the students who lived further was significantly higher than those lived in the vicinity of Campus. The GPA was significantly higher among students who were rarely late.

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KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF PSYCHIATRISTS AND PSYCHIATRY RESIDENTS WORKING IN PUBLIC HOSPITALS IN SINGAPORE TOWARD SPIRITUALITY AND PSYCHIATRY

***David C.L.Teo[1]**, Jared W.L. Ng[2], Andrew L.H. Peh[1], Q.H. Chew[2], Kang Sim[2]*
[1]Changi General Hospital, Singapore
[2]Institute of Mental Health, Singapore

BACKGROUND

- 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[1].
- There is increasing awareness of the relevance of spirituality to mental health issues[2,3]. However, there is currently limited formal training for psychiatrists in this area in Singapore.

OBJECTIVES

- To survey the knowledge, attitudes and perceptions of psychiatrists and psychiatry residents in Singapore's public hospitals toward spirituality in psychiatry.
- To examine their interest and past learning experiences, identify gaps in knowledge, and barriers to discussing spirituality with patients.

METHODS

- All psychiatrists and psychiatry residents working in Singapore's public hospitals were invited by email to participate in a web-based survey over a 3-month recruitment period.
- Spirituality and religion were defined to ensure uniform understanding of the terms and face validity.
- Questions assessed participants' demographics, general attitudes toward spirituality in psychiatry; perceptions on its influence on clinical practice; knowledge of, experience in, and barriers toward discussing spirituality with patients.
- Descriptive statistical analysis was performed on the data.

RESULTS

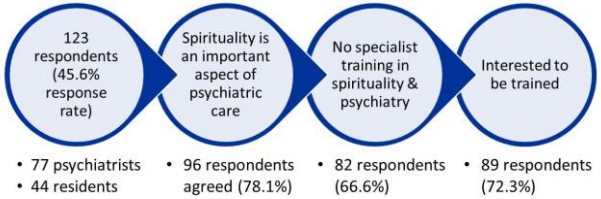

Table 1: Characteristics of Participants

		Psychiatrists	Residents
Males		47/77 (61.0%)	26/46 (56.5%)
Race	Chinese	64/77 (83.1%)	40/46 (87.0%)
	Malay	0/77 (0.0%)	1/46 (2.2%)
	Indian	12/77 (1.6%)	4/46 (8.7%)
	Others	1/77 (1.3%)	1/46 (2.2%)
Age (Mean ± S.D)		42.7 ± 9.80	30.0 ± 2.74

- Current religious affiliation of respondents were mainly Christian (39.0%), none (19.5%) and Buddhist (15.4%).

Table 2: General attitudes toward spirituality in psychiatry

Question	Strongly Agree/ Agree (%)	Psychiatrist: Strongly Agree/ Agree (%)	Resident: Strongly Agree/ Agree (%)	U	p value
Appropriate to inquire	91.0	90.9	91.3	1624.0	.366
Important to address spiritual problems	78.1	79.2	76.1	1712.0	.725
Helps cope with life stressors	96.7	96.1	97.8	1541.5	.214
Positive influence on health	80.3	76.6	86.7	1728.5	.980
Compound mental illnesses	85.2	88.2	80.0	1313.5	.010*

Table 3: Barriers to discussing spirituality in psychiatry

Barriers	Yes (%)	Psychiatrist: Yes (%)	Resident: Yes (%)	X^2	p value
Insufficient time	78.9	72.7	89.1	4.65	.031*
Concerns about offending patients	36.6	29.9	47.8	4.00	.045*
Insufficient knowledge	55.3	50.6	63.0	1.79	.18
Concerns about disapproval from other psychiatrists	18.7	13.0	28.3	4.42	.036*

- Ethical concerns (e.g. discussing spiritual problems may be interpreted by patients as an attempt to influence their beliefs) were a key perceived barrier.

CONCLUSIONS

- Psychiatrists and psychiatry residents in Singapore feel that addressing spiritual issues is appropriate and an important aspect of patient care.
- Most psychiatrists and residents feel inadequately trained to do so, and are interested to learn more.
- Insufficient time, knowledge and ethical concerns are key barriers to discussing spirituality in psychiatry which should be addressed in training programs.

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3. Cook CC, Powell A, Sims A, editors. Spirituality and psychiatry. RCPsych Publications; 2009.

How do International Students Learn Japanese Medical Vocabulary in Medical School?

T. Inada*, N. Shinagawa**, G. Kobayashi*, K. Ishikawa*
* School of Medicine / ** General Education Center, International University of Health and Welfare, Japan

Introduction

Some countries, including Japan, teach medicine through the medium of their native 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. Teachers develop and deliver Japanese language classes to such students to enhance their vocabulary in the first and second grade.

Aim

Examine the ways in which international students learn Japanese medical vocabulary.

Method

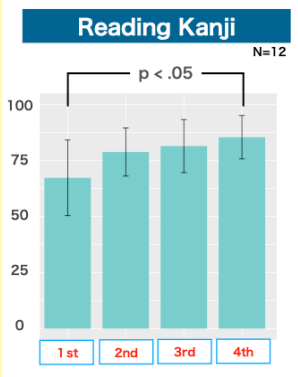
- **Subjects** : 12 international students in the 2nd year
  - 6 from quasi-Kanji areas (Vietnam)
  - 6 from non-Kanji areas
    (Mongolia 2; Myanmar 2; Indonesia1; Cambodia 1)
- **Vocabulary tests**
  - 4 times (April, July, December 2018 and February 2019)
  - 90 kanji words extracted from 3 medical textbooks
    - Reading Kanji
    - English translation

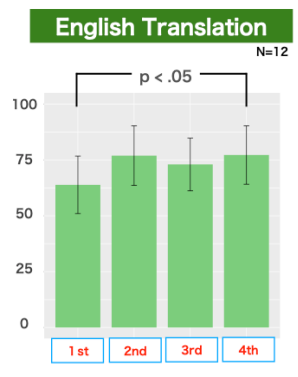
Kanji	患者	癌
Reading Kanji	かんじゃ [kanja]	がん [gan]
English Transration	patient	cancer

Results

The score of the 4th test significantly exceeded the tally of the 1st test for both reading kanji and english translation ($p < 0.05$).

However, no significant difference was observed between quasi-Kanji or non-Kanji regions.





Conclusion

Significant progress was observed in both reading kanji and english translation in our new Japanese medical education challenge.

THE BIG EFFECTS OF INTRODUCING THE MINI-CEX ON THE PHYSIOTHERAPY PRECEPTORSHIP PROGRAM IN NUH

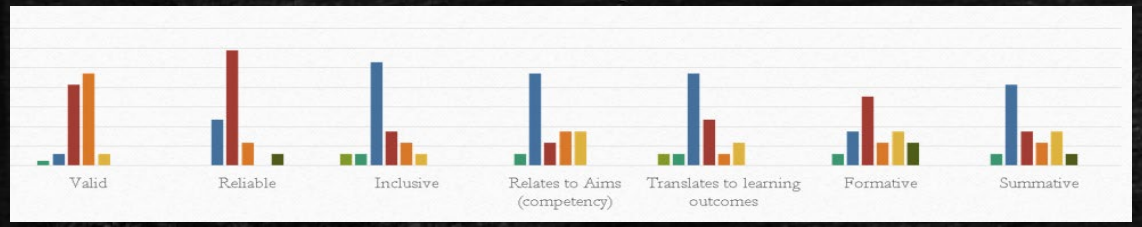
Loy Y., Ng TS. Department of Rehabilitation Physiotherapy, National University Hospital, Singapore

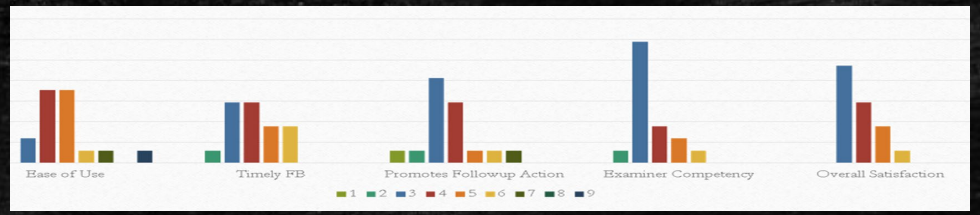
Preceptorship program was not working

- Preceptees failing to meet competencies
- "Burnt out" preceptors and preceptees
- Insufficient local trainees/ preceptees with varying backgrounds
- Demand for increasingly specialized services: oncology/ frail

Objective review of the program (2015)

- Preceptors surveyed (n=17):
  - 35% rated training program "unsatisfactory" (score 3 or less)
  - 35% rated the program 4 out of 9 on the Likert-type scale
  - Out of the 12 domains of interest surveyed, 6 domains were also rated "unsatisfactory"





Unsatisfactory (1-3) | Satisfactory (4-6) | Above expectation (7-9)

Aim: Rehabilitate our preceptorship program

1) Assessment tool training

Introduction to the mini CEX and the domains assessed

Calibration program using standardised videos for assessments

Discipline specific (Cardiopulmonary, neuro-stroke) and performance specific

2) Program standardisation

Clinical competencies guidelines and timelines across all disciplines

3) Staff training

Shifting of learning and assessment paradigms to facilitate meaningful learning for both preceptors and preceptees

Study

Inclusion: undergone training for mini-CEX, completed at least three mini-CEX within past 1 year

Design: convenience sampling. anonymous, self-administered, quantitative survey over 30min

Results

- Preceptors (n=21) reported significantly higher satisfaction across all 12 domains
- (Mann-Whitney U test ($p<0.05$))
- There were also improvements based on categorical ratings
- None of the preceptors rated the program "unsatisfactory" during the survey (score of 3 or less)
  - All 12 domains were rated "satisfactory"
  - All 6 domains rated "unsatisfactory" had improved ratings to "satisfactory"
    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 preceptorship program

ALTRUISTIC BEHAVIOR SUSTAINABILITY AMONG MEDICAL STUDENTS OF THE DE LA SALLE MEDICAL AND HEALTH SCIENCES INSTITUTE (DLSMHSI): AN EXPLANATORY SEQUENTIAL MIXED-METHOD STUDY

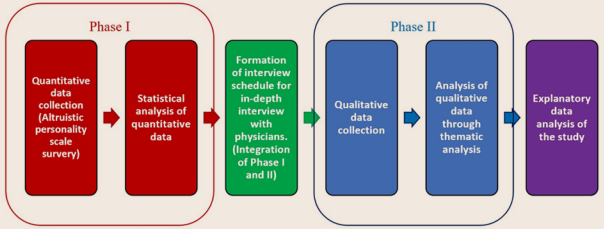
[1]Balanquit LL, [1]Reyes, RD, [1]Barcelona MV, [1]Anacay LM, [1]Juntilla MT, [1]Go AB
[1]College of Medicine, De La Salle Medical and Health Sciences Institute, Philippines

INTRODUCTION

Altruism is perceived as an inherent aspect of physicians and, consequently, medical students. It can be seen in various organizations leaning towards more humanistic and patient-centered approaches. However, studies show inconsistencies in the level of altruistic behavior among medical students—others suggest that it is declining in relation to the length of stay in medical education and others say otherwise. Thus, the study focused on the altruistic behavior of medical students by exploring and identifying possible solutions on sustaining and enhancing altruistic behavior.

METHODOLOGY

An explanatory sequential mixed-method research design was utilized to attain the objectives of the study. Phase I (Quantitative) measured the altruistic score and assessed the factors that affect the level of altruistic behavior of medical students. The novel data, which is different from foreign studies, was incorporated in an interview schedule presented to the physician respondents. Phase II (Qualitative) or in-depth interview focused on (1) the altruistic score, (2) the significant factors and (3) how these altruistic behaviors are similar or different throughout their practice and application to medical students. Thematic analysis was used to find significant themes in the interview datasets.



RESULTS

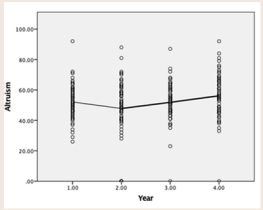
The altruistic score of the medical students were in the high tiers as 71.89% scored 46 to 55 while the rest, 36.66%, scored 56 and higher. Among the factors that were identified, (1) length of stay in the medical field and (2) educational attainment presented a positive relationship with the altruistic behavior. It was found out that the level of altruistic behavior is generally increasing from 1st year to 4th year. As this data was explored in Phase II, the researchers were able to generate the proposed Dynamic Mechanism of Attaining Altruistic Behavior Sustainability in Medicine Model.

Tests of Between-Subjects Effects

Dependent Variable: altruism

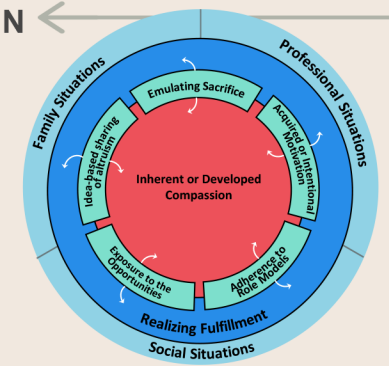
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2870.976[a]	8	358.872	2.888	.004
Intercept	14341.874	1	14341.874	115.416	.000
yearlevel	1023.775	3	341.258	2.746	.043
gender	.718	1	.718	.006	.939
maritalstatus	173.859	1	173.859	1.399	.238
dorm	201.189	1	201.189	1.619	.204
education	1424.181	2	712.091	5.731	.004
Error	32432.509	261	124.262		
Total	813685.000	270			
Corrected Total	35303.485	269			

a. R Squared = .081 (Adjusted R Squared = .053)



CONCLUSION

It can be surmised that medical students possess a high degree of altruistic behavior. However, there should be a concrete mechanism that will help in sustaining and enhancing the altruistic behavior. Thus, this study will be beneficial to the medical field in providing a working model for medical students, professionals, faculty, and administrators in understanding altruism and its practical application of attaining a more humanistic and patient-centered approach.



FLAGGING REGISTRARS: A META-ANALYSIS AND META-SYNTHESIS OF FLAGGING AND EXAM PERFORMANCE IN GENERAL PRACTICE TRAINING

Jill Benson[1,2], Emily Kirkpatrick[1], Shaun Prentice[1], Lambert Schuwirth[2]

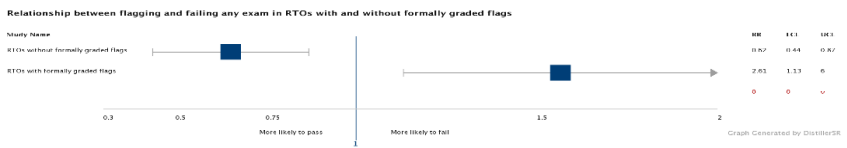
[1]GPEx Education and Training, Adelaide, Australia, [2] Prideaux Centre, Flinders University, Adelaide, Australia

Introduction

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 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.

Methodology

Meta-analytic techniques were used to pool data from Regional Training Organisations (RTOs) examining the relationship between flagging and RACGP exam performance. Qualitative 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. 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 flagging systems.

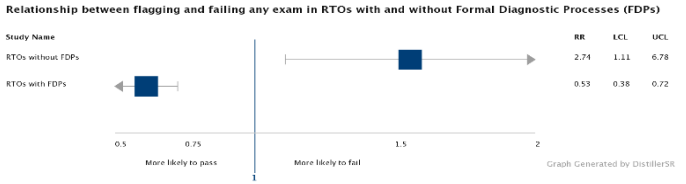


Results

RTOs have diverse flagging systems, but each has been adapted to the local context. Stakeholders were concerned about at risk registrars not being flagged and emphasised the importance of early flagging. A major emerging theme was the issue of 'failure to fail', where 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. Diagnostic processes and graded flags have been identified as predictors of better exam performance. Timing of flagging is very critical, with participants in the qualitative component stressing the importance of early flagging. RTOs where remediation was done by a medical educator who was assigned to the registrar for their whole training, had better RACGP exam outcomes.

Conclusion

Flagging has been identified in this study as a predictor of RACGP exam performance in registrars. The importance of early flagging has been reinforced and strategies for better identifying registrars at risk and improving the remediation process were identified.



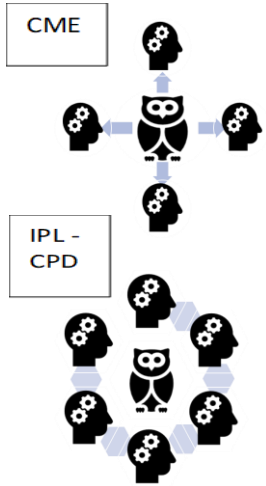
GPEx
SPECIALISED EDUCATION & EXPERT TRAINING

Beyond CME–Moving towards value creation in CPD

Tan Lay Ling[1], Yap Hwa Ling[1]
[1]Department of Psychological Medicine, Changi General Hospital, Singapore

Introduction

Continuing Medical Education (CME) historically focused on content experts delivering lectures with clinical content which were decontextualized and fragmented. 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. The department's CME was traditionally focused on medical education of doctors but other health professionals have been attending these educational activities. There may be opportunities for interprofessional learning (IPL) during CME to further facilitate CPD amongst all staff.



Methodology

An educational quality improvement initiative was attempted to review the department's CME program towards enhancing IPL and CPD. A focus group was conducted with representatives from the various professional groups to share perceptions of the department's CME. A survey was designed to understand how CME promote IPL and enhance clinical practice. A second focus group was conducted to review the findings and solicit recommendations to improve CME's effectiveness in enhancing IPL and 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.

The survey captured 50/65 regular CME attendees (60% doctors; 28% allied health; 10% nurses). 45% felt that CME program was too focused on doctors' learning needs. 78% and 61% would prefer more contributions from allied health and nursing staff respectively. 78% agreed that CME helped with IPL. 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 program. IP participation was encouraged amongst QI personnel, pharmacist, medical social worker, nurses and doctors in improving documentation of side-effects of psychotropics. Side-effect documentation improved significantly in audits and this gave impetus for other QI projects to be incorporated into CME.

Conclusion

Performance-improvement CME encompassed efforts to bring QI into CME. This had supported IPL and participation to effect change in clinical practice. Previous research on effectiveness of CME demonstrated positive impact on performance but not so evident on health outcomes. 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 and not just knowledge creation of our healthcare system.

Effects of introducing "code of conduct for cadavers" on medical students' attitudes

Khabaz Mafinejad M[1], Hosseini Dolama R [2], Mehran Nia K[3], Taherahmady M[2]
[1] Department of Medical Education, Tehran University of medical Sciences, Iran
[2] School of Medicine, Tehran University of Medical Sciences, Iran
[3] Department of anatomy, Tehran University of Medical Sciences, Iran

Introduction

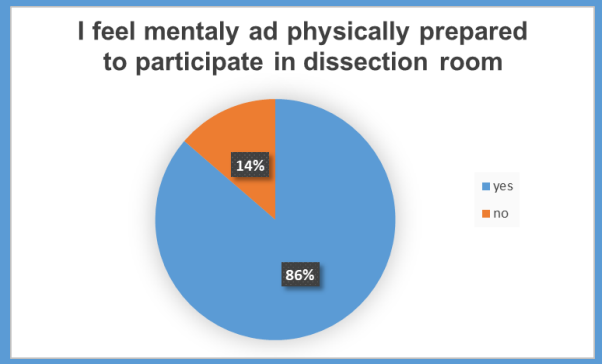
Human cadaver specimen has long been an important resource for teaching anatomy to freshman medical students, and as their first exposure to the human body, it can be considered a precious educational opportunity to encourage them to treat the human body with dignity. Literature, art, and film have been 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 watching an educational intervention aimed to facilitate their adaption to participate in dissection room and familiarity with related codes of conduct.

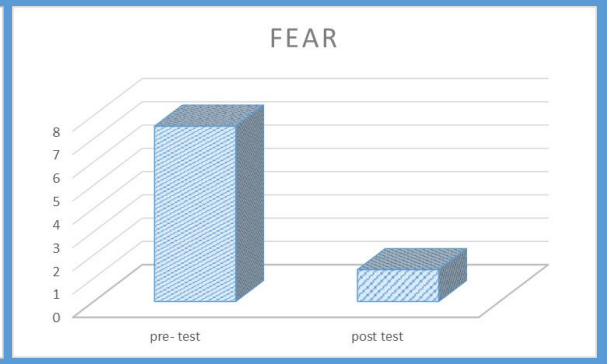
Materials and Methods

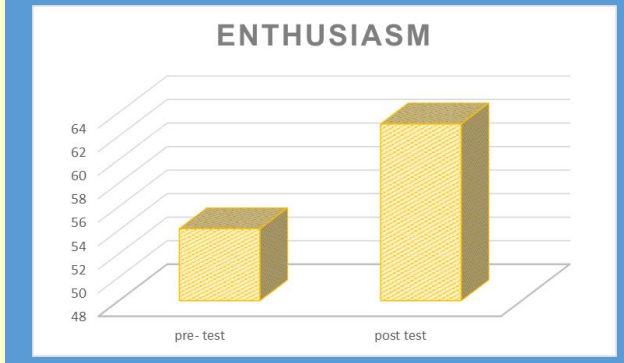
A single group with pre and post design was conducted at the Tehran University of Medical Sciences. Students' attitude was assessed using a valid researcher-made questionnaire. The educational program included showing of a film about cadaver donation followed by a discussion of principles of professionalism 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.

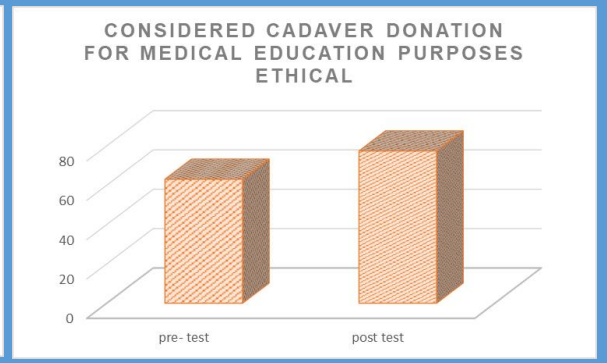
Results

- 91.2% of students thought that the program provided an opportunity to think and reflect principles of professional behaviors.
- 93.8% believed that they would use the ethical points they learned in future
- at the end of the event, students feel more mentally prepared to attend the dissection room.
- number of the students who considered cadaver donation for medical education purposes ethical increased.
- students' mean fear and nausea decreased after the program while their enthusiasm and interest in dissection increased.
- 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 behaviors and using film to foster these behaviors, may help provide a proper opportunity for them to reflect on principles of ethics and professionalism regarding cadaver donation and dissection.

INTRODUCING HEALTH INFORMATICS INTO THE MEDICAL CURRICULUM: A PILOT STUDY

BAN KHK[1], KUMARI S[2], LIM PWN[2], LING ZJ[2] [1]Dept of Biochemistry, [2]Academic Information Office, NUHS, Singapore

Introduction

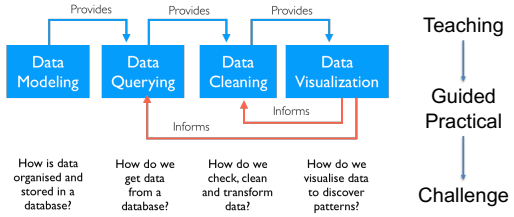
- The **accelerated digitalisation of healthcare data** enables **new data-driven approaches** based on data science and machine learning.
- Digitalised healthcare data can be **analysed computationally** at scale to reveal **new insights to improve healthcare outcomes.**
- We were motivated to explore **how medical students can be taught foundational knowledge** in healthcare-focused data science, initially through a small scale pilot workshop.

Methodology

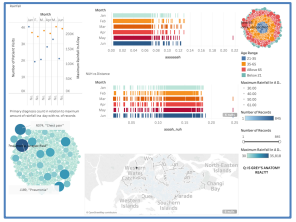
- **Overview design** of workshop (5 days)

Day	Topic
Day 1	• Principles of Health Informatics
Day 2	• Data Models, Data Standards and Data Security • Hands-on data model normalization and querying
Day 3	• Data Cleaning and Transformation • Hands-on data cleaning/transformation with OpenRefine
Day 4	• Principles of Data Visualization • Working with Data and Visualizing Using Tableau • Hands-on work with Tableau
	• Briefing and Introduction to Mini-Datathon
Day 5	• Mini-Datathon (group work and presentations)

- Foundational **introductory data skills** taught through **didactic teaching paired with guided practicals and challenges.**



- Capstone **datathon** using **Tableau** and **de-identified data**
- **Presentation** by students working **collaboratively** in groups

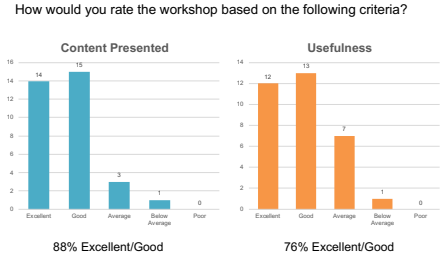


- **Survey** conducted pre- and post-workshop to obtain feedback on course and **evaluate perceived knowledge and usefulness**

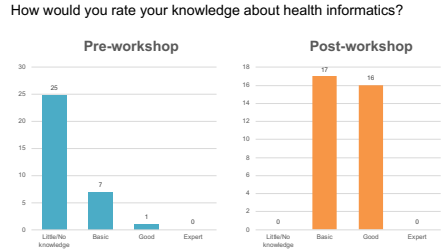
Results

- Workshop conducted in **May/June 2019**
- Total **42 Phase I and II students** participated
- **79% (n=33) responded** to the survey

- Feedback on course



- Perceived knowledge



- 85% (n=28) indicated interest in doing an elective project in the future

Conclusion/Future Directions

- Introductory data skills **can be taught intensively** and reinforced with **practicals**
- Plan: to **scale-up workshop to whole cohort** of Phase I students in the near future

THE EFFECTIVENESS OF TEAM BASED LEARNING WITH GAMIFICATION FOR TEACHING BASIC PATHOLOGY FOR MEDICAL STUDENTS

Z. Mansoor, AAH Priyani, GG Ranaweera, D Jayasinghe, DJB Dumbutuge, HD Wijesinghe, MVC de Silva
Department of Pathology, Faculty of Medicine, University of Colombo, Sri Lanka

Introduction

Team-based learning (TBL) and gamification are teaching/learning approaches that are gaining popularity in medical education.

Objectives

To analyze the effectiveness and students' perceptions of TBL with gamification in learning pathology.

Methodology

- 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 (A & B) based on the practical during each session. Some did an individual test (Part B) before a team test (Part A) where the students discussed the questions together and gave a consensus team answer. Others did the tests vice versa (Part A before part B).

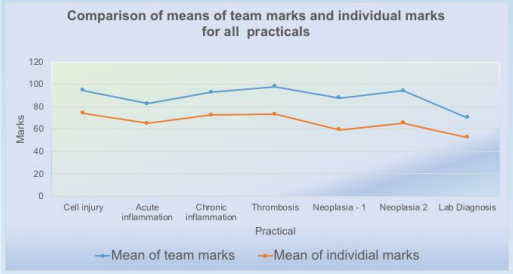
Steps	Group A1-A4	Group B1-B4	Group C1- C4	Group D1-D4
1	One-hour practical class			
2	PART A 8 Multiple choice questions done individually			
3	PART B	Team discussion on PART A	PART B	Team discussion on PART A
4	Team discussion on PART A	PART B	Team discussion on PART A	PART B
5	Discussion of answers for PART A with the lecturer.			

- This method was followed alternatively for each practical. During the total seven sessions each team had an equal opportunity to answer Part B individually before and after the team discussion.
- Teams were allocated marks based on their team performance in Part A. Prizes were awarded for the group which scored the highest. Students perceptions were assessed using a self administered questionnaire

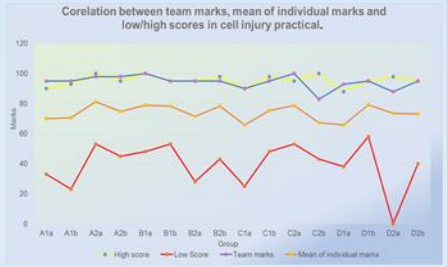
Results

Part A

Over 7 practicals, the team marks of Part A ranged from 85 to 93. The mean of the individual marks ranged from 53 to 74.

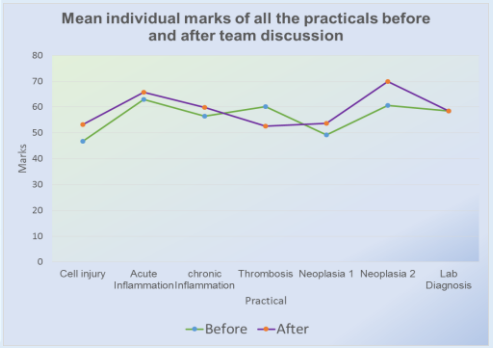


Mean- of team marks - 89.18
Mean of individual marks- 66.03
P = .0005



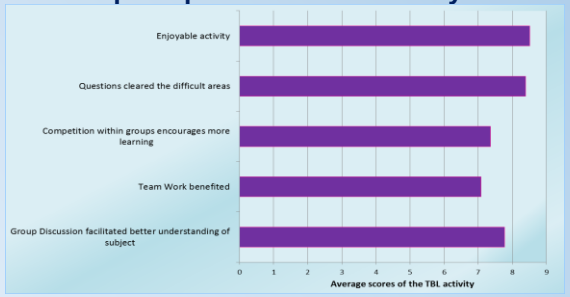
Practical	Mean of team marks	High score	p value (High score vs overall mean)	p value (Mean of team marks vs individual marks)
Cell Injury	94.37	95.4	.8599	p<0.00001
Acute inflammation	82.75	90.69	.02088	
Chronic inflammation	92.87	93.59	.7794	
Thrombosis	97.81	96.08	.3222	
Neoplasia 1	87.89	80.24	.0455	
Neoplasia 2	94.08	85.71	.0061	
Lab Diagnosis	89.73	73.41	.4194	

Part B



The overall performance was better when students answered the individual test (Part B) after the team discussion.
Mean Before- 56.16
Mean After- 59.13
P Value- .184

Student perceptions on TBL activity



Conclusion

- TBL with gamification in pathology practicals was perceived positively by students.
- TBL with gamification improved students' short term performance, although not reaching statistically significance.
- There was a statistically significant difference between the team marks and individual marks indicating that students performed better in a teams than individually.

COMPARATIVE STUDY IN THE RESULTS OF FACULTY EVALUATION

Tumurbaatar S[1], **Mendsaikhan U[1],** Sandag O[1], Badamdorj O[1]
[1]Division for Educational Policy and Management, Mongolian National University of Medical Sciences, Mongolia

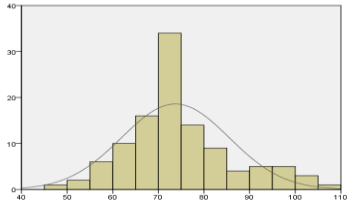
Introduction

The activities of medical schools are designed to prepare good doctors, nurses and health professionals.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.

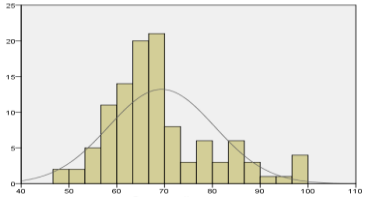
Methodology

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 analyzed 109 young faculties' materials of their self-evaluation

Results



Self evaluation



Faculty development board evaluation

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.

Conclusion

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.

L. Fu[1], I.F. Tan[1], D.A. De Silva[2], S.R. Fam[1], W.M. Ng[1]

[1]Department of Neuroscience Nursing, National Neuroscience Institute, Singapore,

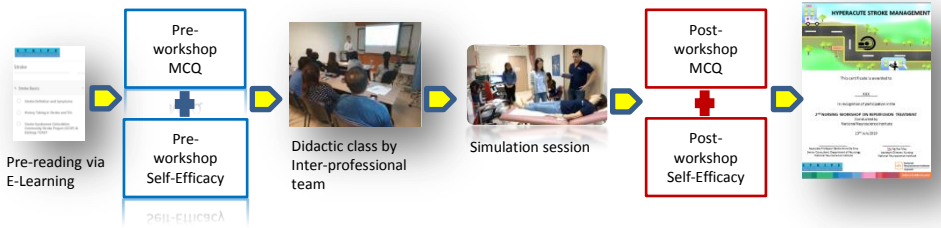
[2] Department of Neurology, National Neuroscience Institute, Singapore

Introduction

Early reperfusion treatment is key in hyperacute 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) program to provide a structured training for nurses working in hyperacute stroke centres who participate in stroke activation service. With development of learners' knowledge and decision-making skills through didactic teaching and simulation training, we hypothesized that participants would increase their self-efficacy and knowledge after attending the nursing simulation workshop.

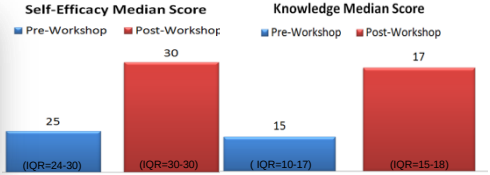
Methodology

The hyperacute stroke management nursing workshop:



Results

Of the 11 participants, 72.7% had prior experience participating in stroke activation ranging from 1 to 18 months.



There was an improvement in nurses' self-efficacy, post workshop as compared to pre-workshop. There was also an improvement in participants' knowledge, pre-workshop and post workshop.

There was no correlation between level of knowledge and self-efficacy pre-workshop (r_s= -.39, p=0.23) and post workshop (r_s= -.11, p=0.75).

Conclusion

Hyperacute 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.

A1317

Assessing the factors influencing electives in medical curriculum

Khabaz Mafinejad M, Mehrpour S, Saleh N, **Hosseini Dolama R**, Bahadori P
Department of Medical Education,Tehran University of Medical Sciences, Tehran, IR

Introduction

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.

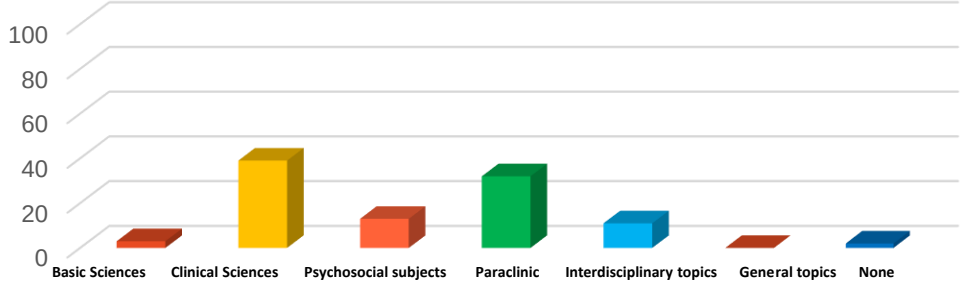
Methodology

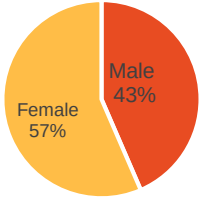
In this study, medical students' perspectives on electives were investigated using a questionnaire. The questionnaire was designed based on the literature review and experts' and students' opinions. Six medical education experts validated the questionnaire considering the clarification and importance 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).

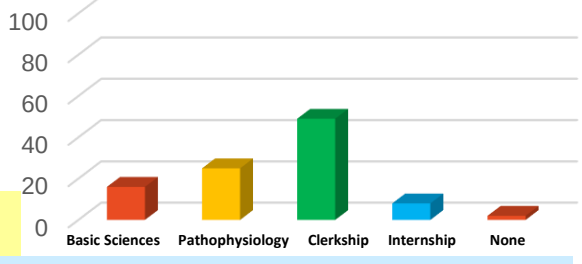
Results

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.

Results







Conclusion

The results show that 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.

STUDENTS' PERCEPTION OF TEACHING EVALUATION

Sara Baladram, CHOW Yeow Leng, Serena Koh
Alice Lee Centre of Nursing Studies, National University of Singapore, Singapore;
Khoo Teck Puat Hospital

Introduction

- Despite a vast body of literature questioning its reliability and validity, students' evaluation of teaching (SET) surveys remain as the only or most important form of feedback globally.
- However, there is minimal qualitative research that explores student perceptions on SETs and factors considered when evaluating modules or teachers in SET surveys.
- Research questions:
  i. Perceptions; ii. Factors; iii. Suggestions.

Methodology

- Descriptive qualitative study,
- Individual face-to-face semi-structured interviews,
- Convenience sampling was used: 16 undergraduate nursing students were interviewed to reach data saturation,
- Content analysis.

Results

Four main categories:
- Perceptions of SETs,
- Determinants of module rating,
- Indicators of high-quality teachers,
- Suggestions for SETs.

Major findings

\+ *"I think sarcastic and other things also. Like, sarcastic and not very good at teaching. I mean if she is good at teaching and she's sarcastic, I'll give her maybe an average or a good."*

- Teacher's personal attributes≠ overall rating of a teacher

− *"That's the first thing that I think about. I will think about the lecture notes and see what kind of information is given."*

- Students have different emphasis on module quality as teaching pedagogy moves forward with learners in a digital age through increasingly introducing hybrid modules (has both online components and traditional face-to-face classroom learning).

Conclusion

- Faculty teachers can use the data to improve on their modules or teaching.
- Future research needs to look at revision of the current tool for SET surveys to an updated tool that can reflect hybrid modules.
- Faculties can understand how to improve SET surveys to better capture student feedback of modules and teachers accordingly.

From Professional Silos to Interprofessional Education: A Pathway for Patient safety

Dr Poon Keah How[2], Dr Bhuvaneshwari Mohankumar[1], Dr Sandhya Mujumdar[1], A/Prof Sophia Ang[2,]

[1]*Medical Affairs-Clinical Governance*, [2]*Anaesthesia*,

Introduction

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.

Methodology

Aim of the Interprofessional Education is to instill importance of patient safety in medical/nursing/pharmacy students through collaborative and interactive teaching modules. 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.

A1213

ELEARNING WISHLIST FROM MEDICAL STUDENTS

Cheung C.S.B, Futaba, K., Tang S.F.E., Cheng S., Mak W.C.T., Ng, S.M.S.,
[1]Department of Surgery, The Chinese University of Hong Kong, Hong Kong S.A.R

Introduction

With advances in technology, eLearning 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.

Methodology

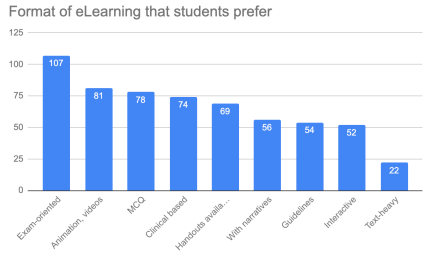
Focus Group

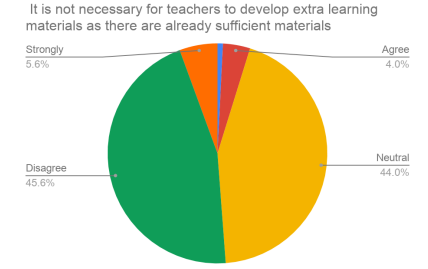
A group of teachers and students from both pre-clinical and clinical years (Year 3-6) formed a focus group and collected information from students what eLearning materials were available among different years of study in the clinical years. Important aspects to be evaluated were discussed within the focus group.

Questionnaire

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





- Response rate: 60%
- eLearning platforms are in general user-friendly (52-93%), and enhance understanding (88%)
- Diverse habits and opinions in uses of eLearning: 42% of students view the content when necessary, 35% browse the content a few times weekly. Polarized opinions in the necessity of developing eLearning materials
- Most popular content: high clinical relevance and usefulness in consolidating knowledge
- Less popular eLearning platforms: redundancy of content with lectures; out-of-date materials; 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. An user-friendly, interactive eLearning platform which can be accessed on different devices should be used to offer effective, efficient learning resources for students.

AI IN HEALTHCARE: USING MACHINE LEARNING TO PREDICT DISEASES, AND IMPLICATIONS FOR EDUCATING FUTURE DOCTORS

Mark Yu Zheng Wong[1,2], Mong Li Lee,[2] Wynne Hsu [2]

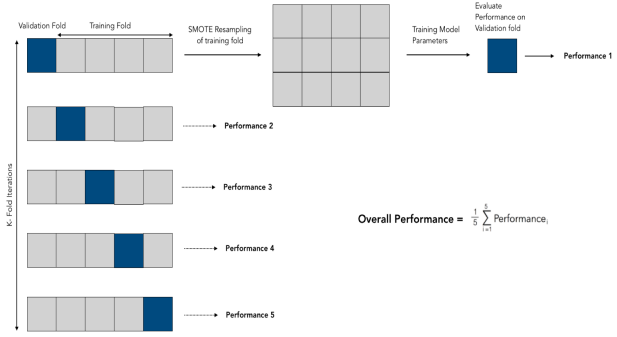
[1]University of Cambridge, Cambridge, United Kingdom, [2] Institute of Data Science, NUS, Singapore

Introduction

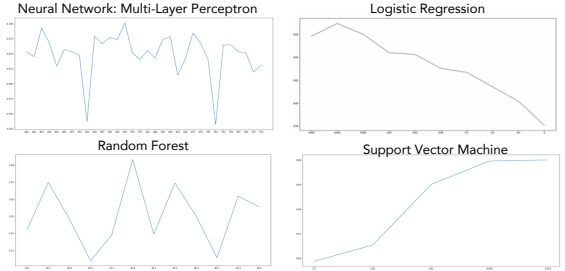
- There is an increasing role of artificial intelligence (AI) in healthcare. This will change how diseases are diagnosed, treated and monitored.
- There is increasing need for doctors to better understand the roles, capabilities and limitations of machine learning algorithms in healthcare.

Methodology

- Data obtained from publicly available MIMIC III Database
- Split into training, validation and test sets

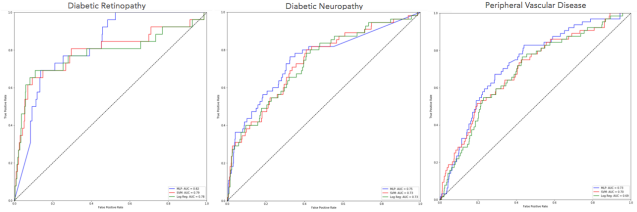


Training Algorithms



Results

- Algorithms were trained to predict diabetic complications (DR, DN and PVD)
- Neural Networks, Logistic Regression and Support Vector Machines consistently achieved the highest AUC scores – from 0.73 – 0.82



Discussion

- Machine Learning algorithms can be adopted in clinical diagnoses & applied to large patient datasets to create models that use patient-specific information to predict the probability of diseases.
- Personalized, targeted form of disease-risk profiling
- May enable a shift reactionary to predictive care via early screening and risk-stratification
- Not without limitations!

Educational Pointers!

- A broad understanding of the principles. techniques and methods underlying Machine Learning is useful for doctors
- Important in understanding / interpreting the results of machine learning & for designing studies to collect data for AI algorithms
- AI a potentially very useful tool
- Don't necessarily have to know how it works, more of how and where to use, implement, and understand the results

ICU nurses' attitude towards organ donation and their knowledge on the supporting personnel involved in the donation

Teo SY[1], Goh PSJ[2], Seah GLA[1], Ho PY[1], Lee SCJ[1]

[1]SingHealth Duke-NUS Transplant Centre, SingHealth, Singapore, [2]Anaesthesiology Department, Singapore General Hospital, Singapore

Introduction

- A smooth organ donation process facilitates positive experience for donors' family and the intensive care unit (ICU) team
- Hence, supporting personnel are crucial as resources (Figure 1)

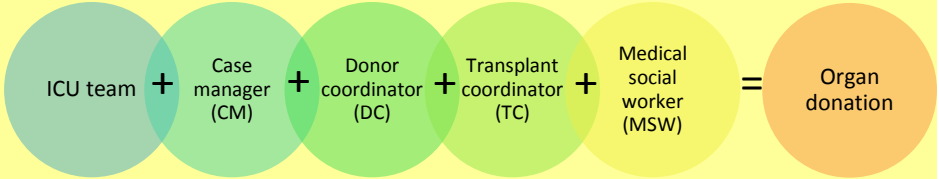


Figure 1: Supporting personnel involved in organ donation

CM: Coordinates brain death certification
DC: Supports EOL conversation
TC: Coordinates organ retrieval
MSW: Provides psychosocial support

- Utilisation of the available support depends on an ICU staff's knowledge
- ICU nurses play an important role in supporting the operation aspect of organ donation
- Their attitude towards organ donation and knowledge on the supporting personnel could affect the perception and outcome of organ donation

Methodology

- Retrospective cross-sectional study
- 67 ICU nurses from Singapore General Hospital
- Quantitative questionnaire to assess attitude towards organ donation, and knowledge on supporting personnel involved in organ donation
- Data were analysed with SPSS V.25

Results

- 94.0% of ICU nurses supportive of organ donation, 82.1% willing to play more active role in donor screening and referral
- 55.4% willing to attend course on organ donation
- High percentage of ICU nurses unaware of the supporting personnel: 67.2% for CM, 58.2% for DC, 46.3% for TC, 34.3% for MSW

Table 1: Knowledge on supporting personnel among ICU nurses in relation to having patient referred as organ donor

Knowledge	Referred (*n* = 28)	Not Referred (*n* = 39)	OR (95% CI)	*P*-Value
Unaware of CM	15 (55.6)	30 (76.9)	2.67 (0.92-7.72)	0.071
Unaware of DC	13 (48.1)	26 (66.7)	2.15 (0.79-5.89)	0.135
Unaware of TC	8 (29.6)	23 (60.5)	3.64 (1.27-10.42)	**0.016**
Unaware of MSW	6(21.4)	17 (43.6)	2.83 (0.94-8.53)	0.064

Values are expressed as *n* (%).
CM, Case Manager; DC, Donor Coordinator; TC, Transplant Coordinator; MSW, Medical Social Worker; OR, Odds ratio of not referred.

Conclusion

- ICU nurses have positive attitude towards organ donation
- Shortfall in knowledge on the supporting personnel associates with less patients being referred as organ donors
- Need for greater education efforts to raise ICU nurses' knowledge on these supporting personnel

Gaming for learning – still useful for medical education?

Chua YX[1], Tan HYD[2]
[1,2]Family Medicine Department, National University Polyclinics, Singapore

Introduction

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 'jeopardy game format', it provides learners a platform to consolidate previously acquired knowledge and identify gaps. 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.

Methodology

A post-centralised teaching, anonymised, 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 after the start of their family medicine rotation across different public primary healthcare institutions.

The jeopardy game was created using a freely available software, 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. The electronic survey was structured to receive free responses and their perspectives on learning outcomes.

Results

Thirty-one out of thirty-seven (83.8%) students completed the survey, with 100% of students giving a positive feedback on the learning experience.

Students mentioned it was useful in consolidating learning from the past few days before the centralised teaching. Recurring themes of "fun", "useful", "informative" 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 conducted.

Conclusion

While there are various learning strategies by students, and it was once thought that a safe, low-stress environment will be ideal for learning, gamification is a reasonable supplementary tool to classroom teaching methodology. While students' feedback remained positive and some mentioned it was helpful in knowledge retention, more research is needed to identify effective knowledge retention, skills acquisition and pedagogical designs in gamification for teaching.

PROCESS OF DEVELOPING AND IMPLEMENTING APPROPRIATELY INTEGRATED CLINICAL CASES IN PRE-CLERKSHIP CURRICULUM AT THAI NGUYEN UNIVERSITY OF MEDICINE AND PHARMACY, VIETNAM

Nguyen Thi Thu Thai[1], Nguyen Van Sơn[1], Nguyen Trong Hieu[1], Nguyen Quang Manh[2]
[1]Training Department, Thai Nguyen University of Medicine and Pharmacy, Vietnam

Introduction

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. **Objective:** analysis 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.

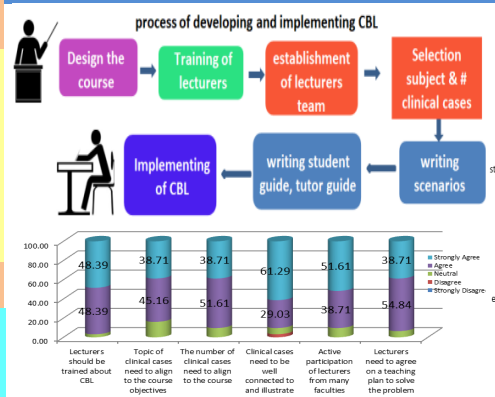
Methodology

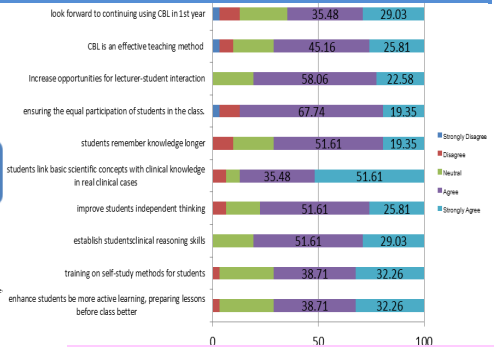
Taking feedback of lecturers who participated in the development and teaching of first-year program on Likert scale. Assessed items: designing course framework, writing learning objectives, writing integrated clinical case scenarios and instructional materials, faculty collaboration, the effectiveness and challenges

Results

Physics-Biophysics	Genetics - Developmental biology	Biochemistry	Anatomy	Histology	Introduction to Physiology	Immunology	Microbiology	General pathology

- 9 foundations courses in the first year with 36 clinical cases
- four – six planning meetings were held in order to gain a total consensus
- Each session in-class discussions was implemented by ≥ 2 lecturers (at least 1 clinician)





- The challenges: change lecturers thinking, how to gain agreement of lecturers, long time taken for development, the level of meeting learning objectives of clinical cases in pre-clership curriculum

- The effectiveness: engaging students: discuss and actively study, apply basic scientific concepts into clinical medicine; ''link theory and practice''. Lecturers have been desired to continue to be taught with clinical cases in pre-clership courses.

Conclusion

Using clinical cases in pre-clership 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.

A1026

THE EFFECTIVENESS OF MOBILE LEARNING IN JUNIOR MEDICAL CLERKSHIP TRAINING

The Chinese University of Hong Kong

Dr. Florence Tang, Teaching & Learning Unit, School of Biomedical Sciences
Dr. Heyson Chan, Specialist in Gastroenterology and Hepatology, Department of Medicine and Therapeutics, The Prince Wales Hospital
Mr. Taylor Tang, Information and Technology Service Center
Dr. Olivia Ngan, Center of Bioethics

Challenge

Medical year four students are the junior medical clerkships in the clinical curriculum. They not only need to adapt to the transition period for the new study environment but also required to sit for the Objective Structural Clinical Examinations assessing professional competence. With such high-stress levels, they are anxious to have a negative impact on their studies.

Objective

The project aims to develop micro-modules related to diseases and conditions teaching practical, and communications skills of physical examination in the differential diagnosis that textbook is unable to cover.

Take Home Message

The micro-modules can be a role model for future development of the flipped classroom e-learning courseware for the clerkship training.

Voices from the Participated Clerkships

- Yes, it provides a detailed framework of the examination with the possible questions being asked.
- Key points are provided with supplementary images for good understanding of the information.
- Yes, it does, the information provided is clinically relevant and provided in a coherent manner.
- I hope I will be more confident in doing physical examination after using the courseware.
- Videos or demonstrations to help us visualize the examination itself.

Impact

- Engage learning experience via mobile devices.
- Reinforce their cognitive connections in foundational knowledge and clinical skills.
- Deepen the clinical skill by on-line formative assessment.

Acknowledgment
This project is funded by University Grant Committee, HKSAR (2016-19) and supported by The Chinese University of Hong Kong.

Optimising In-Situ Simulation Learning Amongst Rotating Residents in an Emergency Department

service
education
research

Singapore General Hospital
SingHealth

Chan JJ, Nadarajan G, Wong E

[1]Department of Emergency Medicine, Singapore General Hospital, Singapore

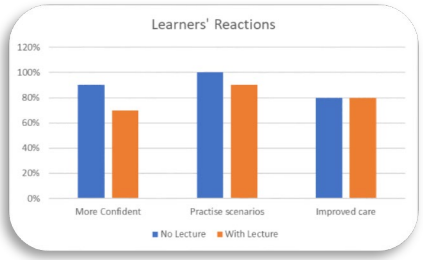
Introduction

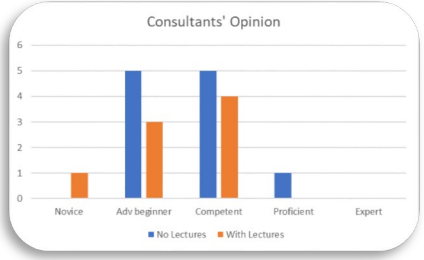
In-situ simulation (ISS) improves the context of learning for residents rotating through the Emergency Department (ED). However where the learners have diverse backgrounds, simulation sessions conducted without establishing a common ground severely limits learning. In this study we examine the impact of pre-simulation session didactic lectures on residents' experiences and their performance in real life.

Methodology

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.

Development and Evaluation of an Introductory Online Radiology Session for Master of Nursing Students

Ching-Hui Sia[1,2], Sheldon Ng[3], Desmond Hoon[3], Jackie Soong[4], Yanika Kowitlawakul[4]

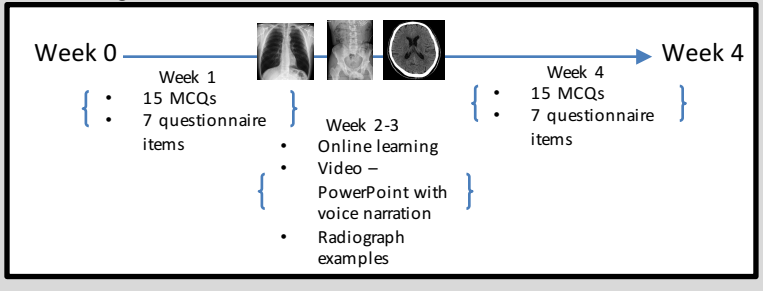
[1]Department of Cardiology, National University Heart Centre Singapore [2]Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore [3]Department of Diagnostic Imaging, National University Hospital, Singapore [4]Alice Lee Centre for Nursing Studies, Yong Loo Lin School of Medicine, National University of Singapore

Introduction

- Traditional method of basic radiology reading – 4-hour didactic, face-to-face → Ineffective!
- **Hypothesis**: An online radiology session would be better in improving 1) Knowledge 2) Attitudes 3) Confidence of Master of Nursing students in interpreting basic 1) Chest radiographs 2) Abdominal radiographs 3) Computed tomographic brain scans

Methodology

- Multidisciplinary team – Nursing, medical and radiology staff
- Developed online curriculum based on Biggs' model of constructive alignment



- Statistical analysis using SPSS v24.0 for quantitative data and content analysis for qualitative data

Results

- Response rate 45/57 (78.9%)
- Participants at least 5 years post-graduation and varied in stages of training, with mean nursing experience of 11.4 years (5 to 24)
- 77.2% female

Quantitative

- Improvement in knowledge ($p<0.001$) and confidence scores (all $p<0.05$)
- Improved self-rated proficiency in reading and interpreting a film radiograph ($p<0.001$)
- No difference in perception of the importance of radiological investigations vis-à-vis the physical examination ($p=0.16$) and routine laboratory testing ($p=0.16$)

Qualitative

- *Pros*: Appreciated learning could be done at own pace, able to replay lectures
- *Cons*: Hoped for tutor-interaction, use of case examples

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 use of case examples and participant interaction

The Effectiveness of Formative OSCE in MS-2 of UMP HCMC VN

Quoc Bao Le MD. MSc.*, Thi My Hanh Nguyen MD. MHPE.*,
* Center for Advanced Training in Clinical Simulation (ATCS), University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam

Introduction

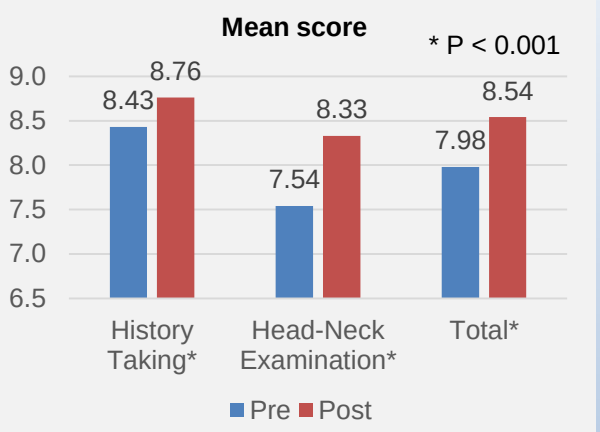
University of Medicine and Pharmacy at Ho Chi Minh City in Vietnam is on progress of reform curriculum program based on Health System Reforms Project of Vietnam Ministry of Health and it's integral component is the Center for Advanced Training in Clinical Simulation (ATCS).
In a simulation-based medical education (SBME) environment, there are best practices of SBME to gain maximum educational benefit. Among, formative Objective Structured Clinical Examination (f-OSCE) is an important feature of powerful SBME used to enhance student's knowledge, skills and attitude. This study was aimed to assess educational effectiveness of f-OSCE in medical students.

Methodology

408 second-year medical students (MS-2), school year 2018-2019 of reform curriculum program, 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 was scored for two exactly similar stations. Scores were recorded based on a 10-point scale and a mean score of two stations was calculated.
The objective of this study was to determine the effectiveness of incorporating an individualized formative OSCE into 2 medical skills 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<0.001 (Wilcoxon Test). The percentage of students receiving a mean score ≥ 8.0 increased from 54.9% to 80.2% after the intervention.



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 < 0.001.

Conclusion

A single individual f-OSCE improved students' competence, especially 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 expanded implementation of f-OSCE and resolve the obstacles.

Evaluating the community-based medical education programme in a rural district hospital: The students' perspectives.

Benedict M.O.A [1], Adefuye A.O[1]
[1]School of medicine, Faculty of health sciences, University of the Free State, South Africa

Introduction

The adoption of community-based medical education **(**CoBME) into the undergraduate medical curriculum is in line with the SPICE model for medical curriculum.

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 CoBME programme in Botshabelo District Hospital (BDH), this study investigated student's perceptions of their experience during their CoBME training at BDH. In addition, suggestions on how to enrich students' experience during the CoBME posting was obtained from the participants.

Methodology

This research was designed as a qualitative (Ethnographic) study that used a structured questionnaire, to obtain written statements from 120 fourth-year undergraduate medical students describing their experience during their CoBME training at BDH. The structured questionnaire in the form of an evaluation form was self-administered, consisted of only open-ended questions grouped into four main sections and was distributed manually (hard copy) to the participants.

Result

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 CoBME training, "Good educators/staff" and the "Poor 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 CoBME 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 by this study reveal that CoBME is a valuable pedagogical tool to enhance learning in undergraduate medical education and that more work is required to improve the quality of CoBME training in BDH. We believe that the findings by this study will inform future planning of CoBME training programmes in BDH.

Role of Learning Center Operators at Aso Iizuka Hospital

Shinya Komatsu[1], Yukiyo Murakami[2], Shunsuke Kosugi[3], Kiyotsune Ono[1], Hiroyuki Oda[3]
[1] Clinical Engineering, Aso Iizuka Hospital (AIH), Japan, [2] Education Promotion Office, AIH, Japan, [3] General Internal Medicine, AIH, Japan

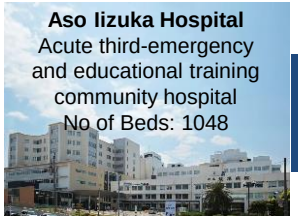
Background

Learning Center Goal: To provide a training environment that can be connected to medical safety

Learning Center Operators (LCOs) Role: Improving the quality of training by tailoring to each training session, like a simulation specialist in the U.S.
→ No report defining roles adapted to Japan

Simulation training carried out in each department in the late 90's

Aso Iizuka Hospital
Acute third-emergency and educational training community hospital
No of Beds: 1048



Problems

① Limited number of simulators and equipment.
→Transferring devices was a burden on educators

② Multifunctional simulators and equipment became more advanced.
→Necessity for someone who can manage and operate the devices

Methods

May 2016: Decided to establish a Learning Center at AIH
May 2017: Assigned staff as LCOs

LCO'S Work Content - Suggestions & Support

- Device use and education methods
- Layout according to device and simulation
- Statistical analysis of usage
- Simulation methods → Facilitating without direct instruction → Environmental maintenance
- Creation of explanatory materials

Two years have passed since staff were assigned.
- Gradually began integrating the devices owned by each department
- Centralized the location and function of simulation training at AIH

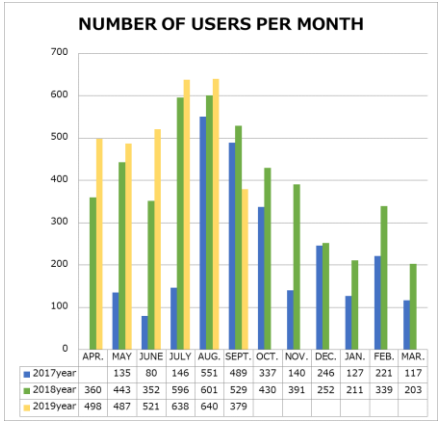
The current status/problems and future prospects of the AIH Learning Center are herein reported

Results

Current Status

Monthly average number of users	
FY2017 (11 months)	235
FY2018 (12 months)	392
FY2019 (6 months)	527

Environmental factors playing a major role in improvement:
- Established Learning Center
- Assigned LCOs



Current Problems

- How to make more effective use of devices
- How to create an attractive environments for users
- **How to build an environment not dependent on LCOs**

Key Point

Conclusion

Future Prospects

How to provide educators more independence in the creation of simulation environments

Suggestions < **Active Support** → **Suggestions** > Active Support

Keep in mind "Suggestion rather than Active Support!!"

- **Wait patiently**
→ Give educators the opportunity to think about the quality of the training
- **Accurate tips**
→ Give educators the experience of facilitating without direct instruction

TRAINEES' ENGAGEMENT DAY AT YISHUN HEALTH CAMPUS – AN INTER-PROFESSIONAL, INFORMATIVE AND INTERACTIVE SESSION

Farah Analeigh Leong(FAL)[1], Grace Goh Mei Fang(GGMF)[2], Grace Yeo Soh Gek(GYSG)[3], Nuraidahfitri Ang Bte Ahmad Hussein(NABAH)[4]
Education Development Office, Khoo Teck Puat Hospital, Singapore

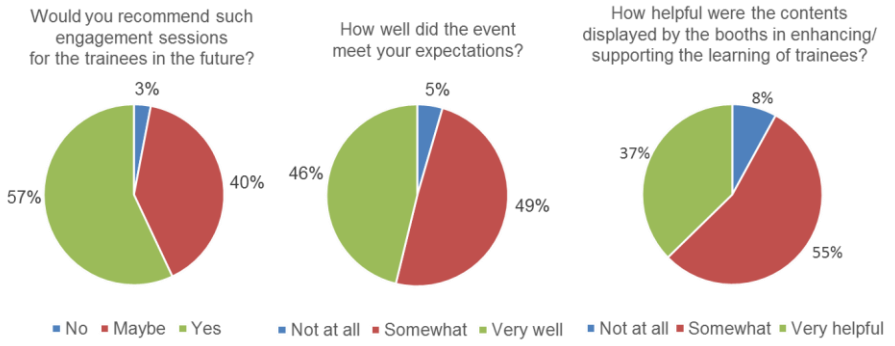
Introduction

Trainees' Engagement Day (TED) was organized 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 analyze 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.

Methodology

Quantitative and qualitative feedback from trainees were sought in hopes to enhance the effectiveness of the session. Data was collected and analyzed from TEDs held between year 2017 and 2019. The questions were formulated with reference from feedback platforms such as KTPH Service Quality Component (SQC) 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 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 organized in the future.

Results



Conclusion

The importance of organizing 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 Yishun Health.

COMPARING STANDARD SETTING METHODS FOR MID-MODULE AND END-MODULE TESTS

Doan Thi Thu Hoa
Educational Testing Department, University of Medicine and Pharmacy at Hochiminh City (UMP HCMC), Vietnam

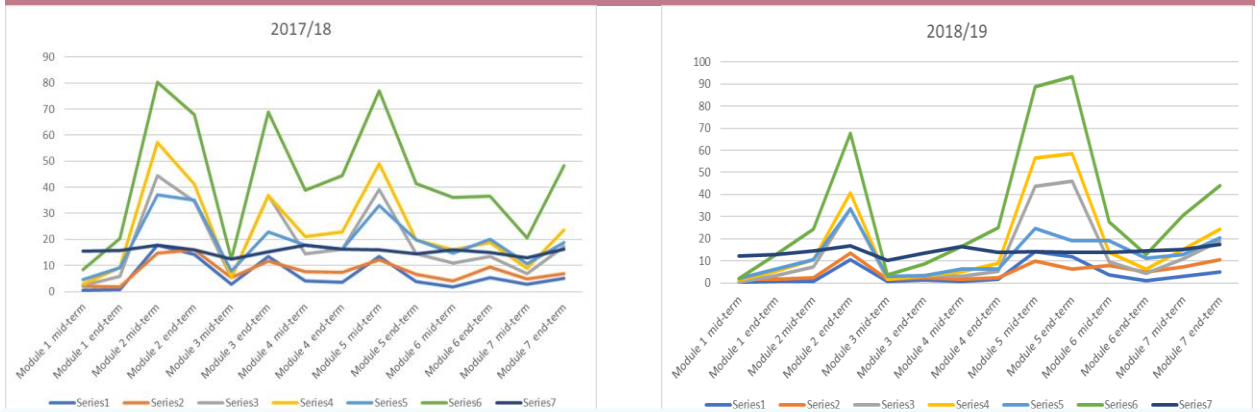
Introduction

UMP HCMC implement an integrated curriculum in system-based modules; 7 modules in 2nd year since 2017-2018.
2 tests (mid- and end-module) in each module
Use a **cut-off score of 50%** as the pass mark.
The Cohen method, and its modification allow standard setting in low-stake exams.
Objective: **Compare the Cohen and modified Cohen methods as well as other methods** (50%, 50% with correction for guessing, 60%, 60% with correction for guessing, mean-SD), when applied to our 2nd year exams, and to **find out which method is better in our program**.

Research method

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



Series 1: 50%; Series 2: modified Cohen; Series 3: 60%; Series 4: 50% with correction; Series 5: Cohen; Series 6: 60% with correction ; Series 7: mean-SD

i. - Correlation coefficients: 0.579- 0.758 ($p<0.01$) → support for predictive validity.
ii. - Failure rates: least variation in the mean-SD method then modified Cohen
iii. - Kappa coefficient: largest in 50% method (0.927 in cohort 1 and 0.954 in cohort 2), then in the modified Cohen method (0.915 in both cohorts)
iv. - Sensitivity: highest in 50% method (0.965 in cohort 1 and 0.982 in cohort 2) and modified Cohen method (0.962 and 0.958)
v. - Specificity: smallest in 50% method (0.39 in cohort 1 and 0.35 in cohort 2), modified Cohen method was better (0.4 and 0.53).
vi. - 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.

Personality traits of first year students and final year medical students: actual difference or perceived difference?

Hassan, F.[1] and Abeysinghe, N.[2]

[1, 2] Faculty of Graduate studies, University of Colombo, Sri Lanka

Introduction

"Leaving medical school, we are very different from how we were on entering"- common statement by medical students. Is this true?

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.

Methodology

Study design	Cross-sectional study of mixed methods (quantitative and qualitative)
Study setting	Colombo medical faculty
Population	First year and final year students

Tools:

- Eysenck Personality Questionnaire Revised- Short Form (EPQR-S) survey of 48 statements with Yes/ No responses
- Measures Neuroticism, Extraversion, Psychoticism factors and Lie scale
- Four small group discussions to investigate perception of personality

Demographics

- 97 first year and 75 final year students participated in the survey. Four small group discussions with four participants each, two from the first years and two from the final years were held.

Results

Survey:

- No significant difference in any of the four factors between the first year and final year students
- Significant differences in Neuroticism and Psychoticism between female and male students
- Females of the first year and whole sample, except final year, scored significantly higher in Neuroticism factor
- Males of the first year, final year and the whole sample scored significantly higher in Psychoticism factor

Small group discussions:

- All except one final year participant, expected a change in their personality at the end of five years
- Confidence, communication skills, leadership and teamwork skills, participation, professionalism, kindness, compassion, caring and empathy were some of the personal qualities expected to be developed
- Exposure to the clinical appointments and the academic structure were Behavioural Sciences Stream (BSS), exams stress, extra-curricular activities, role models, appreciation/ criticism and different cultures were factors mentioned as contributors to change

Conclusion

No significant difference in personality factors between the first year and final year students Significant differences in Neuroticism and Psychoticism in gender. The general perception of the students was that personality should change or had changed at the end of the five years of the medical curriculum.

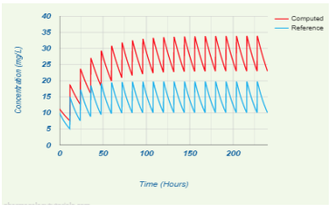
Videos and Interactive Platforms for Pharmacokinetic-Pharmacodynamic (PKPD) Instruction – Engageability and Acceptability

Lee Y.J., Sng Judy C.G., Lee Edmund J.D.
Department of Pharmacology, National University of Singapore (NUS), Singapore

NUS National University of Singapore

Introduction

What is PKPD?

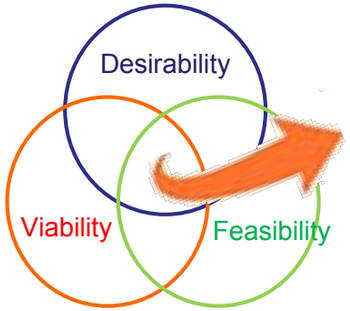


Why is it important?

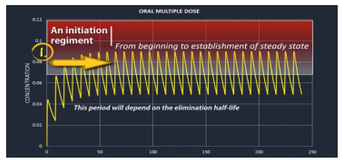
Problem Statement

PKPDs are concepts that are complex and difficult to visualize.

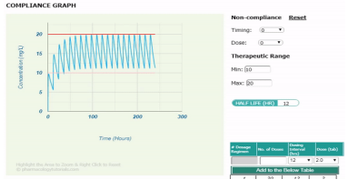
Potential Solutions



Videos



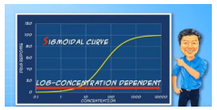
Interactive Graphs



Objective

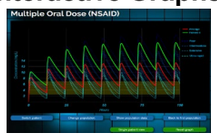
To understand the usability, feasibility and desirability of the videos and interactive platforms among Pharmacology students.

Method



Videos

Interactive Graphs



Masters in Nursing students (n=21)

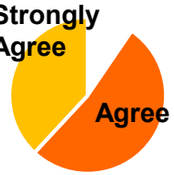
Survey

Results

Videos

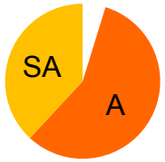
Feasibility
Easy to follow and understand.

90%



Viability
Improve understanding of PKPDs principles.

95%



Desirability
Positive and motivated to have more videos.

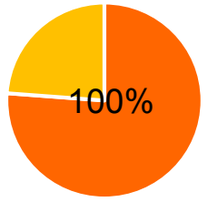
90%

Interactive Graphs

Feasibility
Useful and improve understanding

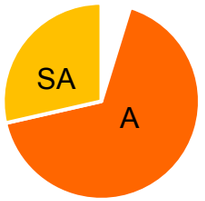
Viability
Learnt the importance of interindividual variability.

100%



Desirability
Positive and motivated to have more videos.

95%

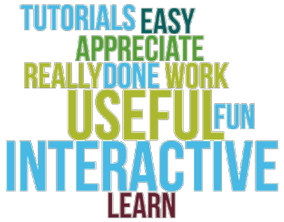


Positive

"The tutorial is very interactive."
"… fun and easy to learn! Really appreciate the work done!"
"The explanation notes are useful!"
"Great effort!"

Negative

"Would love to see more cases and discussions to relate."
"Can slow down the speed of the videos."
"The videos need voiceovers which can make the revision easier."



Discussions

- ✓ Feasibility
- ✓ Viability
- ✓ Desirability

Room for Improvement

- …not easy to follow and understand.
- Need subtitles, voiceovers, notes
- Slow the speed of videos

Future Directions

- Improve the video supplements.
- Evaluate performance outcomes.

What Are They Saying: Experience Using Simulated Patient in FM UGJ

Vivi Meidianawaty[1], Fadjrin Yahya[2], Catur Setiya Sulistiyana[3]
[1] Medical Education Department, Universitas Swadaya Gunung Jati, Indonesia

Introduction

Simulated patient (SP) is one of great innovations in the world of medical education that is widely used for teaching, learning, and assessment. A SP is someone who has been trained based on a scenario in acting out a specific patient in a realistic way. Learning by using the patients provides benefits to students, including being able to help students learn clinical skills. 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 FM Universitas Swadaya Gunung Jati.

Methodology

This study was a cross sectional study, conducted by survey. The survey was conducted on medicine faculty 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 (mean score 2,90), they can answer questions naturally without seeing the scenario (mean score 2,93) and they can demonstrate their physical complaints like the real patient (mean score 2,89). However, according to students and instructors, acting training for SP still needs to be done (mean score 2,98), so that SP can maintain their role consistently. Students and instructors also mentioned that feedback from SP is needed (mean score 3,16), especially regarding the role of students as a doctor (mean score 3,16). For this reason, students and instructors also mentioned that special training for SP was needed to provide constructive feedback for students (mean score 3,2).

Conclusion

The main role of simulated patients in acting and providing feedback when clinical skills training in Faculty of Medicine Universitas Swadaya Gunung Jati is good enough. However training is still needed to provide constructive feedback for simulated patients to better support the clinical skills learning process.

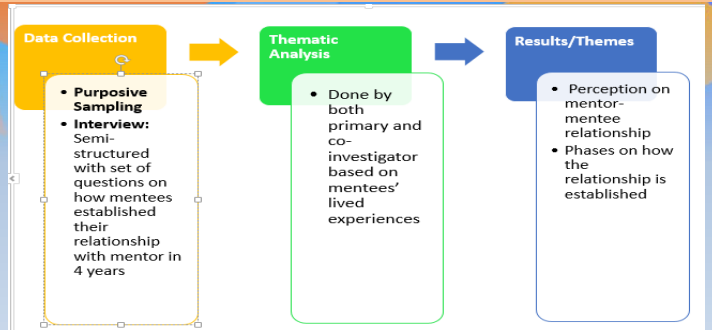
Mentees' Perspectives on the Mentor-Mentee Relationship in a Medical School

Alexandria R. Bayaoa, MD, MHSE[1] Janelle P. Castro, RN, MSN[2]
University of the East Ramon Magsaysay Memorial Medical Center Inc, College of Medicine, Philippines

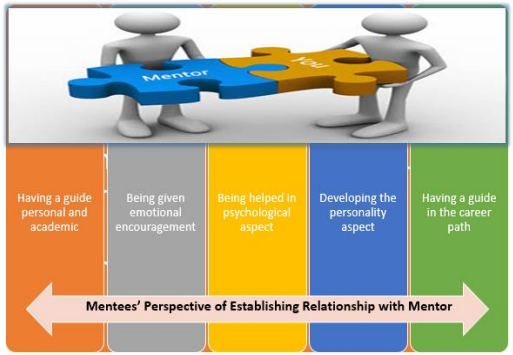
Introduction

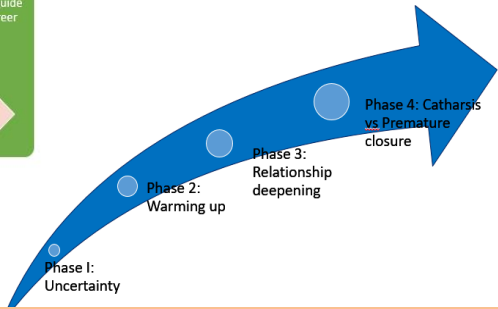
- Medical course poses unique challenges among students.
- High rate of depression among medical students is one of the leading concerns in medical school.
- There is NO scientific research done to explore the dynamics of the mentor-mentee relationship and measures to improve medical students' experiences.

Methodology



Results





Conclusion

- Most of the participants were satisfied with the relationship.
- Findings were consistent with their lived experiences.
- Program complied with its formed objectives.

Simple questionnaires and curriculum development

Arunnart Methas[1]

[1]Medical Education Center Songkhla Hospital, Princess of Narathivas University, Songkhla, Thailand

Introduction

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 at the end of the course. However, the original questionnaires had no detail in each lecture that was important data for curriculum development. Moreover, the evaluation should be done after students applied knowledge in clinical practice or examination.

In this study, we used the simple questionnaires consisted of the questions in detail about each lecture and the evaluation was done after the examination.

Methodology

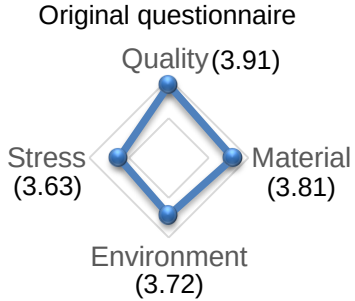
The original questionnaires had 18 questions with 5-point scales that asked about the teaching quality, teaching material, learning environment, and stress during learning. The simple questionnaires consisted of two questions for each lecture that were asked after the examination.

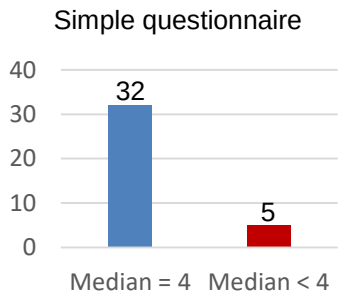
The first question was “What do you think about this lecture?” that had 4 choices consisted of

1.) This lecture was unnecessary.
2.) Some part of this lecture was overlapped with another lecture.
3.) This lecture needed to change the teaching method.
4.) This lecture was favorable.

The second question was “Why did you choose that answer?” that was an opened-end question.

Results





In the simple questionnaires, five of 37 lectures had median score < 4 indicated that more than half of students thought these lectures should be revised.

- 2 lectures had some parts overlapped to other lectures.
- 1 lecture could be brief within a shorter period.
- 2 lectures should be taught more details and needed more case-based learning for better clinical practice application.

Conclusion

The original questionnaires demonstrated an overview. But the simple questionnaires demonstrated in detail of each lecture that was practical and high impact for teaching quality improvement and curriculum development.

HALSTED'S VS PEYTON'S 4-STEP APPROACH

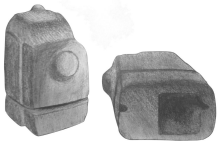
A1196

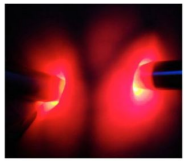
Nur 'Alya Binte ROSDI[1], Wen Xiang Daniel GOH[1], Hui-Shan Angela LIM[1], NG Yong Hong[1], Elijah Zhengyang CAI[2], Angela HING[1,3], Hanjing LEE[2], Vigneswaran NALLATHAMBY[4], Yan Lin YAP[2], Jane LIM[2], Thiam Chye LIM[1, 2, 3]

[1] Yong Loo Lin School of Medicine, National University of Singapore, [2] Division of Plastic, Reconstructive and Aesthetic Surgery, Department of Surgery, National University Health System, Singapore, [3] Department of Surgery, Yong Loo Lin School of Medicine, National University of Singapore, [4] Division of Plastic, Reconstructive & Aesthetic Surgery, Ng Teng Fong General Hospital, Singapore.

Introduction

- TenTaTorch: Vein visualiser
- Skills retention: Peyton's > Halsted's





Halsted's

See One,
Do One,
Teach One

Peyton's

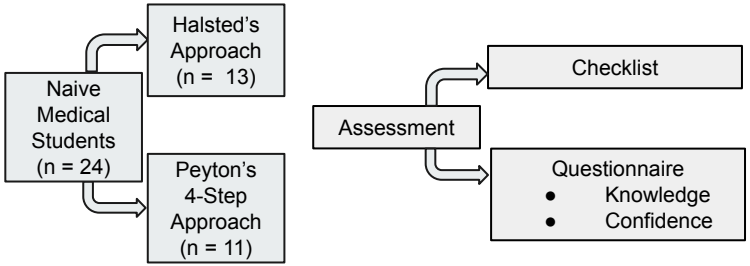
Demonstration → Deconstruction → Comprehension → Execution

No conflict of interest

Patent Application No. 10201808304W

Domain Specific Review Board 2018/01266

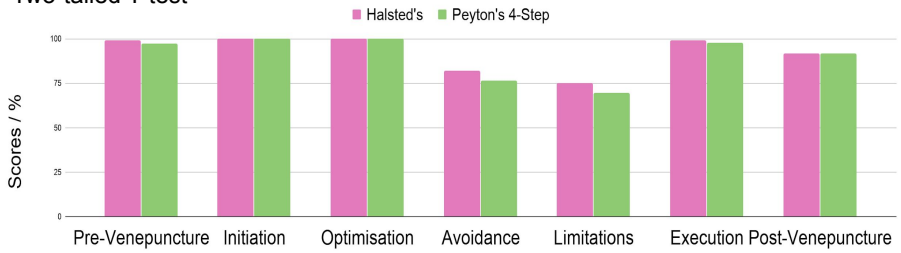
Methodology



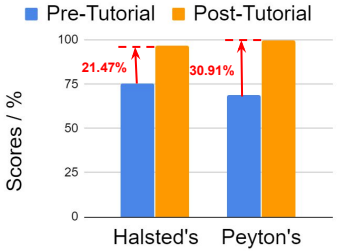
Results

Statistical test:
Two-tailed T-test

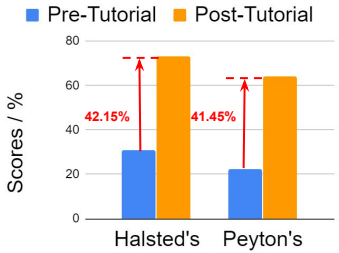
Venepuncture Scores p > 0.05



Knowledge Scores p > 0.05



Confidence Scores p > 0.05



Conclusion

- Similar effectiveness between Halsted's and Peyton's
- No complex teaching techniques required

LESSONS THE LIVING LEARNT FROM THE DEAD: JOURNEY OF ELECTIVE DISSECTIONS AT NATIONAL UNIVERSITY OF SINGAPORE - MEDICAL SCHOOL

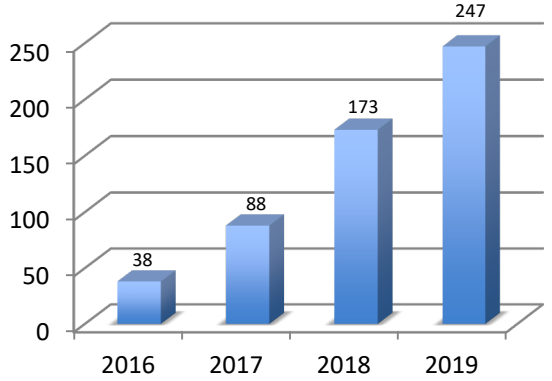
Satish R.L; Zachariah Ow GW; Chandrika M; Jayabharathi K; Sara K.R; Yee Kong Ng.
Department of Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, S-117594

BACKGROUND: Cadaveric Dissection is losing 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 favor 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.

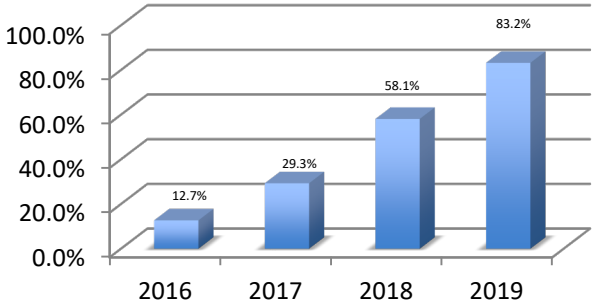
METHODOLOGY: In 2010, the dissection program at NUS was conceptually revamped after drawing inspiration from the progressive ways of various "Silent Mentor" programs that were emerging in medical schools around the region. After the incorporation of its own silent mentor program, the school started to 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 program 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. In 2016, the silent mentor program was finally able to offer cadaveric dissection to students as an elective for the first time.

RESULTS: The program grew in over the years, both with more silent mentors and greater rates of student participation. In 2016-2017, students dissected their silent mentors by regions (example Head & Neck, Trunk, and Limbs), however, in 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.

Students' Attendance over the years



Percentage of Year-1 Cohort that attended the elective



Learning and skill transfer using an ex-vivo learning tool for microsurgical skill training

Alphonsus KS Chong[1, 2], Wendy ZW Teo[1], Jin Xi Lim[1], Khadijah Yusoff[1], Amitabha Lahiri[1]
[1]Department of Hand and Reconstructive Microsurgery, NUHS [2] Department of Orthopaedic Surgery, NUS

Introduction

Surgical task simulators are useful for skills acquisition. Simple and objective assessment measures facilitates implementation and feedback. Time to complete a task has been shown to improve with training in different surgical skills training models. 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.

Methodology

- 77 Novice microsurgeons on 5 day course
- Days 1, 3, 4, 5: surgical task to place 9 sutures in a prefabricated 4mm synthetic strip under the microscope (Fig 1). Time taken to place all 9 sutures was recorded
- On Days 3, 4, 5: prepare and anastomose 4 rat femoral vessels (2 arteries and 2 veins) each day under the microscope (Fig 2). Time taken for each vessel anastomosis was also recorded.

Fig 1. Standardized task of placing 9 sutures in 4mm strip

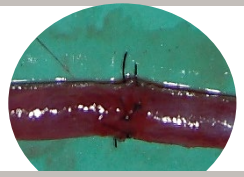


Fig 2. Anastomosis of rat femoral vessel

Results

- Participants faster at both training strip and vessel anastomoses by the end of course.
- Training strip time decreased by 6.8 minutes (D1 vs D5 $p < 0.01$)
- Vessel anastomosis time decreased by 6.2 minutes (D3 vs D5 $p < 0.01$)
- Training strip task time correlates with vessel anastomosis time

Day	Correlation Coefficient	p value
D3 strip vs vessel	R = 0.505	P < 0.01
D4 strip vs vessel	R = 0.429	P < 0.01
D5 strip vs vessel	R= 0.549	P < 0.01

Conclusion

Time to complete a task provides an objective and separate perspective of skill training. It is simple and objective to measure, does not require any specialized equipment, and can do easily measured during self practice to facilitate feedback to the trainee.

A Road to Professionals: Lesson Learned from Academic Integrity Cases

Prof. Yayi Suryo Prabandari, Ph.D[1]

[1] Professional Behavior Committee, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Indonesia

Introduction

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 behavior team (PBT) to achieve the objective of medical education on professionalism. The PBT has developed professional behavior curriculum and assessment in the undergraduate level as the first step to learn professionalism, including academic integrity. The PBT also work for assisting and guiding students who violate the academic integrity. The PBT then become The Professional Behavior Committee – member come from clinical, basic medical science, public health, nursing and nutrition. This study is aimed to describe types of academic integrity violation; to review the academic integrity violations handling; and to portray particular booster program of professional behavior in accelerating professionalism.

Method

Documentation of minutes' meetings and workshops to describe the academic integrity violations as well as the implementation of professional behavior booster program.

Result

In the year 2014-2017, the unprofessional behaviors that violate the academic integrity were: 12 faking the signature of clinical instructor, 21 cheating , change the mark, plagiarism , submitting fake documents.

Other un-professional behavior were : comment un-professionally in the Twitter, intentionally did not full fill the assignment requirement and did not attend progress test and OSCE, being rude and intimidating other student, and holding premature baby without parents ' consent

1. Unprofessional behavior

Report from tutor → Academic supervisor → The Learning Monitoring and Guidance Team (consist of psychiatrist, psychologist)

Student is referred to higher committee if similar behavior persist 3x after feedback

2. Academic integrity

Report from department to the head of the study program → Vice Dean of Academic Affair → Professional behavior team

The PBT then : Do investigate of case, Give recommendation, Do guidance – assignment, working with NGO

This sanction will be applied when the academic integrity case has been investigated, analyzed and discussed. There are several criteria to decide the level of sanction.

Mild : warning, write a letter of apology
Moderate : suspension (1 or 2 semesters), re-take subject/stage
Severe: : resigned as student

Conclusion

This report reveals that academic integrity violation were vary and need to handle by case. Particular booster program accelerated the acquisition of professionalism among students.

THE LEARNING PREFERENCES OF GEN Z INDIAN DENTAL STUDENTS AND COURSE DESIGN

K.Anbarasi[1] P.V.Vijayaraghavan[2] D.Kandaswamy[1]
1- Faculty of Dental Sciences 2- Sri Ramachandra Centre for Health Professional Education
Sri Ramachandra Institute of Higher Education and Research, Chennai – 600116, Tamil Nadu, India.

BACKGROUND

Gen Z defines the period between 1997 and 2012. Students up to the age of 23 comprise of Gen Z students group and they are further pursuing higher studies. The teaching faculties are categorised under Gen X faculties.

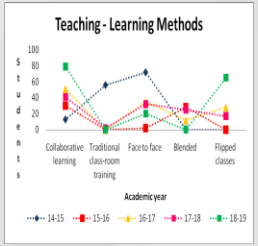
RESEARCH QUESTION

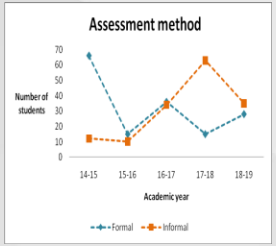
1. How to interpret learning preferences of Gen Z students?
2. Expectations of Gen Z students.
3. Will a learner profile be suitable to suffice the needs?

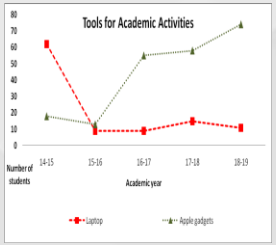
METHODOLOGY

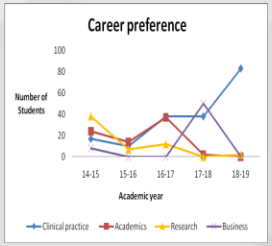
1. Gen Z UG dental students recruited (N=10).
2. Group discussions were conducted.
3. Audio recording done.
4. Questionnaire prepared and administered.
5. Statistical Analysis was performed.

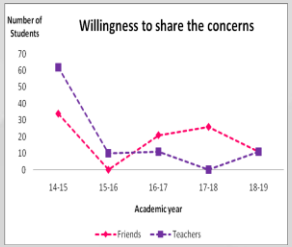
RESULTS

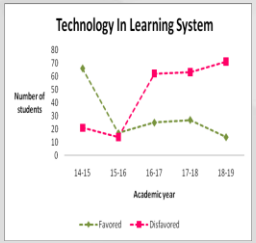


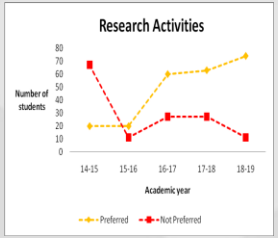


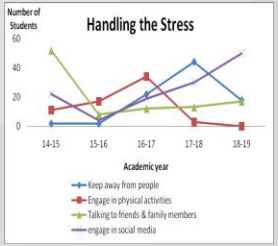












REMARKABLE ACTIONS

1. Student supportive group
2. Learning apps
3. Stress management program
4. Mind Body Medicine

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

Ong Luan Seng Desmond, Toh Ying Pin, Ong Chooi Peng, Joanne Khor, Victor Loh Weng Keong, David Tan
[1]National University Polyclinic, Singapore, [2] Department of Family Medicine, National University Hospital, Singapore, [3]Yong Loo Lin School of Medicine, NUS, Singapore

Introduction: This case study demonstrates how family medicine resident's continuity clinic, framed as a patient-centered medical home is used for professional identity formation of family medicine residents through a case study, of Mdm O, a 70 year old lady with metastatic lung cancer who presented to the RCC with neck pain.

Patient-Centered Medical Home (PCMH) is a care delivery model whereby patient treatment is coordinated through their family physician to ensure they receive the necessary care.

Resident's continuity clinic

- NUHS family medicine residents run continuity clinic once a week in polyclinic
- Supervised by a regular preceptor overseeing 2-4 residents

Professional identity formation multifaceted, individualized process through which learners develop new ways of being in becoming physicians

Personal physician as the lead for multidisciplinary team based care	• Longitudinal follow up of patients of all ages and health conditions • Sited within a multidisciplinary team including care manager, MSW, allied health • Options of caring for entire family	• Personal doctors • All ages and health conditions • Context-sensitive care to suit needs of the specific community • Reliable first line
Whole person orientation		
Coordinated and integrated care across settings	• Residents follow up on patients referred to hospital setting • Home visits for patients • Follow up phone calls • Handover to colleagues in hospital	• Partnerships with other specialities and health services • Navigate & advocating for their patients in an increasingly complex healthcare system
Emphasis on quality and safety	• Residents carry out quality improvement measures to improve care at a macrosystem level • Discussion of the systems, processes and finances of healthcare during small group and large group teaching sessions	Leaders for healthcare systems and partners for public health
Healthcare economics recognizing services and value		

EMPOWER: A pilot near-peer leadership development programme for internal medicine residents

Kennedy Ng[1], Marcus Sim[2], Jolene Liu[2], Rayan Alsuwaigh[2], Andy Sim[3], Emily Tan[3], Chee Kian Tham[1]

[1]Medical Oncology, National Cancer Centre, Singapore, [2] Respiratory Medicine and Critical Care Medicine Residency, Singhealth, Singapore, [3]Medical Social Services, Singapore General Hospital, Singapore

Introduction

Leadership is an essential skill that every doctor should possess[1]. There is a lack of systematic leadership development in residency programmes[2]. We implemented and evaluated a pilot leadership development programme for internal medicine (IM) residents at a Singapore Academic Medical Centre.

Methodology

Together with faculty members and social work colleagues, we designed a leadership curriculum based on the leadership framework of our institution and the National Health Service (NHS). IM residents are invited to be a part of this programme if they are serving in the IM residency committee. The programme consists of four 4-hours 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 included didactic lectures, case-based discussion and group work. Participants are required to apply what they have learned to residency initiatives. Participants evaluated the workshops' impact and quality using pre-post workshop surveys.

Faculty members and residents gather to discuss about "dos" and "don'ts" of mentoring.

Andy, a social worker, sharing with participants how they can better support fellow residents.

Results

I feel confident to:	Pre	Post	P value
Provide a vision and direction for my Casa (groups I may lead in the future)	3.60	4.30	**0.001**
Communicate a vision and direction for my Casa (groups I may lead in the future)	3.85	4.35	0.004
Identify residents / juniors who are struggling	3.65	4.15	0.002
Support residents / juniors who are struggling	3.85	4.40	0.004
Recognize the contributions of my residents / juniors	4.10	4.40	0.055
Create a supportive and nurturing community	4.05	4.35	0.083
I believe that implementing change is my responsibility.	4.25	4.45	0.142
I feel confident to implement a change in my residency, organisation or group.	3.6	4.3	<0.001
I feel confident to generate new ideas to improve a current work process.	3.8	4.25	0.011
I feel confident to manage stakeholders in the implementation of a change.	3.6	4.15	0.001
I feel confident to break a change process into small, tangible stages and capitalize on small victories obtained along the journey.	3.6	4.25	0.001
I understand the importance of a growth mindset and grit in the process of change management	4.15	4.55	0.012

22 residents participated in the programme. The workshops are well-accepted by residents and faculty members. Feedback provided included provision of protected time for these workshops (the workshops are currently held on Sat pm), and provision of modules teaching emotional intelligence.

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.

References:
1. Stoller JK. Developing physician-leaders: a call to action. Journal of general internal medicine. 2009;24(7):876-8.
2. Blumenthal DM, Bernard K, Bohnen J, Bohmer R. Addressing the Leadership Gap in Medicine: Residents' Need for Systematic Leadership Development Training. 2012;87(4):513-22.

Acknowledgement:
The authors would like to thank all faculty members, residents and programme executives for being so supportive in this initiative.

Clinical Audit Training: An Essential Contraption in Dental Curriculum

Abhishek Parolia, Jacklyn Ng Zhi Ling, Esther, Kok Sook Kuan, Sugunadevi Rajendran, Michelle Kher Wei Chua, Jenny Fong Yi Ming, Allan Pau

School of Dentistry, International Medical University, Kuala Lumpur, Malaysia

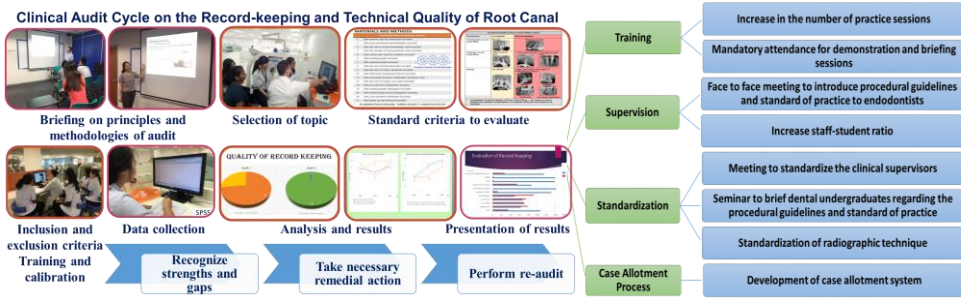
Introduction

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.

To evaluate the effect of clinical audit training in dental curriculum on the root canal therapy (RCT) performed by dental undergraduates.

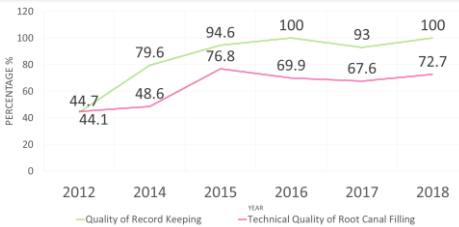
Methodology

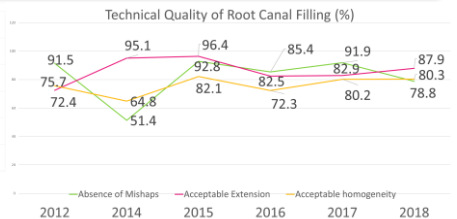
Clinical audit training was introduced in dental curriculum in the year 2012.

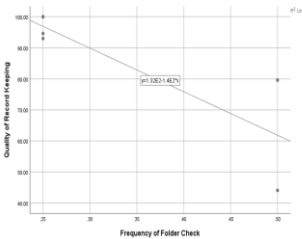


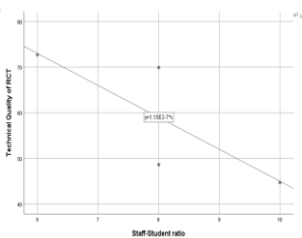
Clinical audits were repeated upto the year 2018. A total of 706 patient records and periapical radiographs of 740 root canal therapy were evaluated. These data were statistically analyzed using the chi-square test ($p<0.05$).

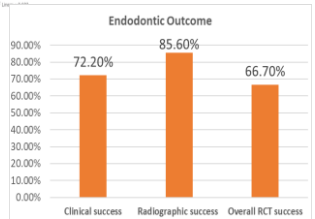
Results











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.

Repetition of audit carried out throughout the years along with constant reinforcements of guidelines and feedback helped to improve the quality of record keeping and technical quality of RCT done by undergraduates.

Help-Seeking Behaviour of Medical Students in Singapore

Cheng Ryui-Wern, Reuven[1], Amanda Chia Siew Hui[1], Kuah Poh Kah[1], Quek Jian-Xian, John[1], Huso Yi[2], Hwang Yi-Fu Jeff[2]
[1]Yong Loo Lin School of Medicine, National University of Singapore, Singapore, [2] Saw Swee Hock School of Public Health, National University of Singapore, Singapore

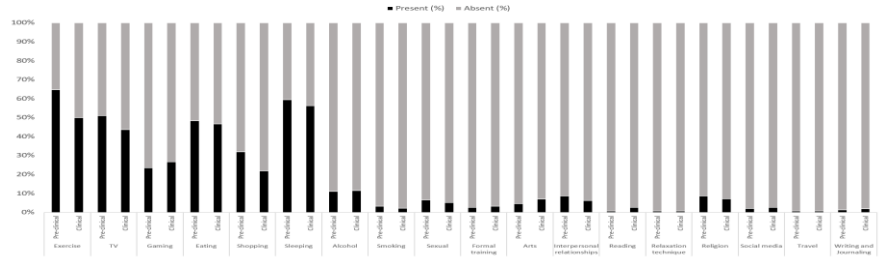
Introduction & Methodology

High levels of stress and burnout amongst medical students have been widely reported in international literature. Medical training entails arduous hours, vast information load and leaves low threshold for mistakes. As stress among medical students will have downstream repercussions, it is a pertinent topic to be discussed.

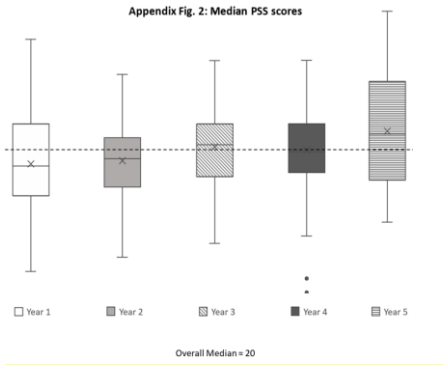
This study aims to assess the degree of stress among undergraduate students across all levels in National University of Singapore, Yong Loo Lin School of Medicine (NUS YLLSoM) and identify coping strategies as well as the barriers that prevent help seeking behaviour. A single center cross-sectional study over a 2-week recruitment period was conducted on all students from NUS YLLSoM. Participation was strictly voluntary. The survey recorded student demographics, Perceived Stress Scale (PSS) Scores, Self-rated Stress (SSS) Scores, Help-seeking Behaviors, Current Coping Mechanisms and barriers to seeking help.

Results

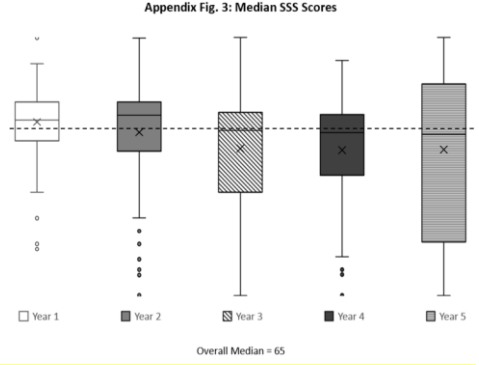
Appendix Fig. 5: Coping Mechanisms and Clinical vs Pre-Clinical years of study



Appendix Fig. 2: Median PSS scores



Appendix Fig. 3: Median SSS Scores



A linear regression between both PSS and SSS showed that the participants' SSS scores poorly predict their corresponding PSS scores (R^2 = 0.118, $p < 0.001$). Participants with a higher PSS scores are more likely to have sought or are currently seeking help – 21.7% of participants with high stress compared to 12.8% of moderately stressed participants, and 9.4% of low stress participants. We found that the 3 barriers with the highest reported impact are 'Lack of time', 'Fear of unwanted interventions', and 'Cost of therapies' for the entire study sample.

Conclusion

From our study, we found that most medical students reports moderate stress levels, and are subjectively unable to assess their own stress level. The lack of time remains the greatest barrier to seeking help cited by medical students. Interventions available to help students should be targeted and made more accessible by time and location.

SIMULATION-BASED INTER-PROFESSIONAL OPERATING ROOM EDUCATION (SPORE)

Ling Te Terry Pan[1], Ridzuan Farouk[2], Aryani Kartika[3], Hashim Norhashimawati[3], Lavanieswati Sinatamby Supiah[3], Suresh Pillai[4]

[1]Anaesthesia, YLLSoM, Singapore [2]Colorectal Surgery, NUHS, Singapore [3]Operating Theatre, NUHS, Singapore, Centre for Healthcare Simulation, NUS, Singapore

INTRODUCTION

Simulation has emerged as an ideal training medium for Operating Room (OR) staff due to its unique ability to provide a safe authentic learning environment. In August 2018, a pilot simulation-based training workshop specific for operating room staff was put together to address this particular training need while promoting a collaborative working culture among OT staff.

METHODOLOGY

Anaesthesia, (Colorectal) Surgery and OR nursing faculties came together to design a half day simulation-based training workshop for OT staff at CHS, NUS. The crafted scenarios were based on real life critical incidents 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 30 minutes (Fig 1) followed by 30 minutes faculty-facilitated debriefing using a phased-domain debriefing model (Fig 2). Feedback was collected from participants at the end of the workshop.

RESULTS

2 anaesthesia senior residents, 3 surgical senior 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 scenarios. All participants felt the session helped identified gaps in knowledge and made concepts in operating room inter-professional education and crisis management clear (Figure 3). 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 OT as a team (Figure 4). Some participants felt that the training could be even more authentic with in-situ training in the OT, but all felt the scenarios to be realistic and appropriate.

Figure 1. OT staff in the midst of a scenario

Figure 2. Faculty-facilitated briefing after the session

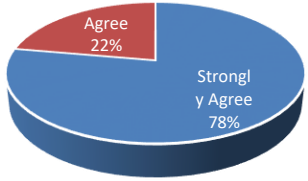
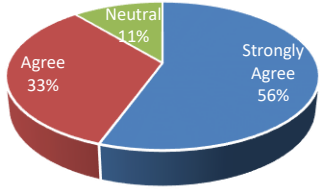


Figure 3. Response by participants when asked if the simulation session made concepts in Operating Room Inter-Professional Education and crisis management clearer.

Figure 4. Response by participants when asked the module reinforced their confidence and skills in managing crisis in the OT as a team overall.



CONCLUSION

Simulation-Based Inter-professional Operating Room Education (SPORE) can be a viable way to promote crisis team training for staff working in a specialized and demanding healthcare delivery setting, such as the OR.

Special attention to instructional design and appropriate resources, especially faculty time and appropriate simulators, need to be allocated to ensure authentic training which will eventually benefit and promote quality operating room healthcare delivery.

APPLICATION OF MEDIAL SIMULATION IN TRAINING OF NERVE AGENT POISONING MANAGEMENT – AN INITIAL WORKS WITH ISTAN SYSTEM

Quang Van Ha, Dong Van Le
Center for Toxicology and Radiology Training and Research, VMMU

INTRODUCTION

The use of laboratory animals in learning practice lectures is a traditional teaching method. However, this method has a few limitations about biological aspects and the ability to form doctors' attitudes with their patients who were poisoned. Therefore, It is necessary to have a new experimental model creating poisoned situations likely humans. Applying medical simulation is the inevitable trend at medical universities in the world. This study was taken to set up the programming of iStan simulation system in a variety of neurotoxic situations in practice lectures

METHODOLOGY

The building scenarios of sarin poisoning for Istan simulation patient is at different poisoning levels. After, teaching for leaners about these scenarios and surveying learners' feedback about their satisfactions with traditional and simulation teaching method. There are 4 groups, including:

1. The ability observes and developments signs of intoxication
2. Technical work of the experiment.
3. Organization of the experiment.
4. General assessment.

- Overall: learners' satisfactions with every method.

CONCLUSION

- The study has programmed to control iStan simulation patient
- Creating symptoms of sarin poisoning at severe, moderate and mild levels, and describing learners' responses to the emergency measures, treatment for sarin poisoning.
- Simulation teaching method brings better results in training skills and attitudes for students comparison in traditional teaching method.

RESULTS

Figure 1. Screen controls and monitors

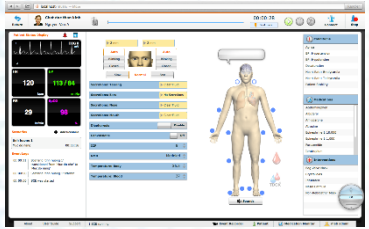


Figure 2. Learners are practicing

Table 1. The ability to observe

Signs of intoxication	Traditional method		Simulation method		p
	Mean	SD	Mean	SD	
Irritation, convulsions	4,56	0,650	3,32	1,739	0,00
Miosis	4,33	0,851	4,24	0,949	0,49
Pulse, blood pressure	3,39	1,422	4,67	0,665	0,01
Respiratory	3,72	1,174	4,38	1,062	0,01
Other	3,82	1,151	3,91	1,373	0,60

Table 2. Technical work of the experiment

Organization	Traditional method		Simulation method		p
	Mean	SD	Mean	SD	
Psychological pressure	3,97	1,165	3,51	1,486	0,04
Teamwork	2,83	1,324	4,57	0,852	0,00
Repeat the experiment	2,17	1,486	4,81	0,595	0,00
Preparation time	2,45	1,339	4,68	0,710	0,00
Cost	3,18	1,467	3,46	1,941	0,38

Table 3. Organization of the experiment

Ability of experiment	Traditional method		Simulation method		p
	Mean	SD	Mean	SD	
Follow	3,18	1,375	4,85	0,416	0,01
Review	2,42	1,696	4,82	0,441	0,01
Stop	1,85	1,725	4,87	0,423	0,00
use antidot	2,01	1,716	4,77	0,610	0,00
Repair	1,46	1,646	4,82	0,589	0,00

Table 4. General assessment

General assessment	Traditional method		Simulation method		p
	Mean	SD	Mean	SD	
True feeling	2,97	1,485	3,87	1,454	0,00
Suitable on time	3,09	1,231	4,29	1,138	0,00
Learning opportunities	2,33	1,394	4,61	0,873	0,00
Help understand lesson	3,69	1,207	4,51	0,963	0,00
Create excitements	3,62	1,179	4,47	0,996	0,00

Overall	Traditional method		Simulation method		p
	Mean	SD	Mean	SD	
Satisfaction levels	3,53	0,939	4,37	1,040	0,00

TRANSITION TO ACTIVE LEARNING IN MEDICINE

Leech M [1], Pusparjah P [2] Loiacono R[1], Lindley J [1], Kavidelu A [2], Naidoo R [2], Barker K [1], Atkinson S [1], Anikajenko M [1], Yasin S [2].

[1]Medicine, Monash University, Australia, [2] Medicine, Monash University, Malaysia

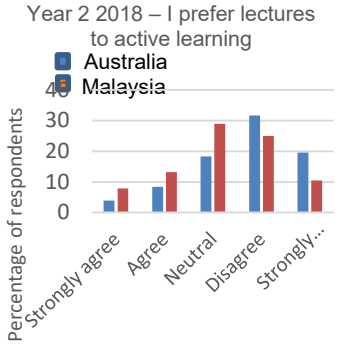
Introduction

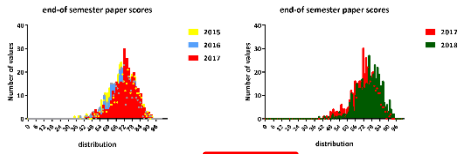
In the context of a university-wide mandate to transform education delivery from lectures to an active learning approach in 2018 , the preclinical Monash Medicine program sought to understand attitudes of educators and students, as well as impact of active learning on academic outcomes in the preclinical medicine cohort in Australia and Malaysia. The delivery of identical learning outcomes in two contexts with synchronous delivery of curriculum and assessment formed the basis to assess learner responses to content delivered in this new format in Australia and Malaysia.

Methodology

Preclinical students (year 1 and 2) of the medical program in Australia and Malaysia (n=803) and Preclinical educators (n=49) in both countries were included. Cohort academic outcomes before and after active learning introduction were compared in the year 2 cohort. Student attitudes to active learning were assessed using whole cohort surveys, focus groups and student evaluations of teaching units (SETU) in year 1 and 2. Educator attitudes were assessed using focus group feedback. Free text comments and focus group themes were identified and clustered using a realist synthesis. Ethics approval for this study was obtained from the Monash University Human Research Ethics Committee MUHREC.

Results





	2017	2018
25% percentile	66.9	70.4
75% percentile	78.5	82.1
median	71.8	76.5

Introduction of active learning for the 2018 academic year was associated with a shift in cohort mean academic performance to the right (pre-change cohort mean mark 71.9 and post change 75.8) where academic outcomes across previous years had been stable. A preference was expressed for active learning over lectures for year 2 students.

Conclusion

Active learning was associated with a trend to improved academic outcomes in a large transnational medical student cohort. Year 2 students have more favourable attitudes to active learning than early year 1 students. Educators attitudes to active learning improved with increasing exposure. attitudes and academic outcomes shifts in Australia and Malaysia were similar.

CLINICAL REASONING - RESULTS OF TEACHING IT DURING PRE-CLINICAL MEDICAL SCHOOL

Valencia Long[1] Soh Jian Yi[2]
[1]Department of Haematology-Oncology, NUH, Singapore, [2] Department of Paediatric Medicine, NUH, Singapore

Introduction

Clinical reasoning is essential in every physician-patient encounter, and 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 needed for good patient outcomes and optimal resource utilisation in the healthcare setting. Clinical reasoning as a skill is itself not well understood, and we seek to create a course that teaches the principles of clinical reasoning upon which trainees can ground their training.

Methodology

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. We report the results of the questionnaire below.

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. Eighty-four **(91.3%)** of respondents felt that the course was critical/very important immediately prior to clinical years. Common barriers to application of concepts (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 results of the questionnaire administered post course delivery were encouraging. Our questionnaire provided us insight into how potential trainees think, as well as how they hope to be taught prior to clinical exposure. It was heartening that most respondents had demonstrated willingness to apply concepts learnt. We look forward to universal application in their foundational years. It would also be interesting to follow these students as they enter physician-ship to see how this course has shaped their way of thinking.