D1001

Impact of a novel learning tool on educational outcomes in orthopaedics residents: a prospective pilot study.

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BACKGROUND

Spine rotations poses a challenge for orthopaedic residents, due to a lack of exposure and familiarity with theatre rituals, and a lack in basic knowledge for the spine OT.

In a previous study by the same authors, residents have reported a low level of spine orientation (95%) and prior spine knowledge (80%), as well as a clear paucity of opportunities for residents to assist in spine operations (70% assisted in only 0-2 operations a month). These factors adversely impact the quality of learning and outcomes, which is especially significant given the short spine rotation during orthopaedics residency. To address these issues, we have piloted the use of an educational primer tool.

AIMS

Our aim is to implement and pilot the use of an educational learning tool in orthopaedic residents undergoing the spine rotation, to evaluate its effectiveness in improving practical and theoretical knowledge as well as familiarity, confidence, and stress.

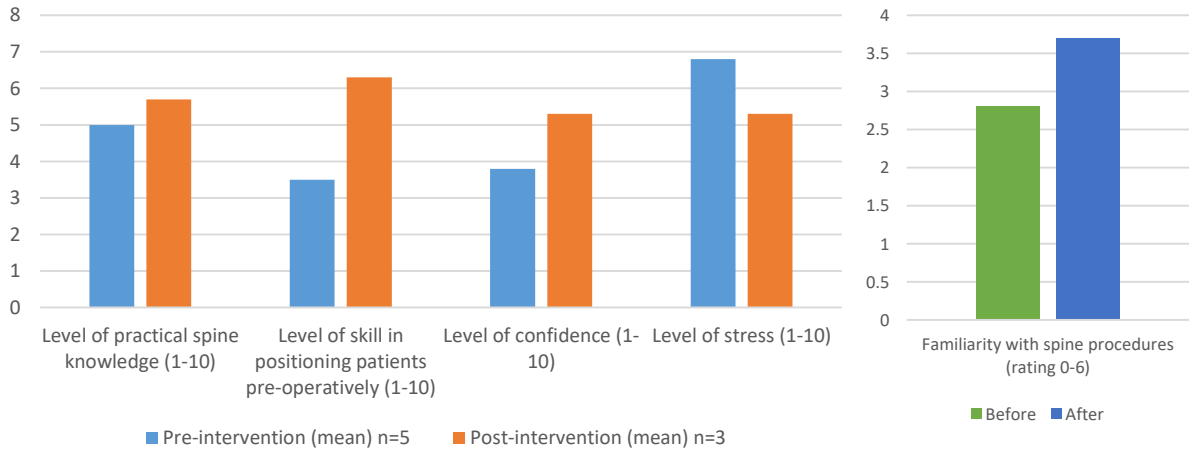
METHODOLOGY

Starting in March 2017, all orthopaedics residents (Year 2-6) rotated through spine are recruited for our pilot study, using our educational primer tool as an adjunct to their learning.

Using Qualtrics, we anonymously surveyed 3 cycles of residents (n=5) before and after the use of the educational primer tool. Residents are quizzed on basic spine content and practical knowledge, which is computed into a knowledge score. Using a 10-point rating scale, residents are also evaluated before and after on their practical spine knowledge, OT skills, levels of confidence and stress during the spine posting. Using a 6-point rating scale, residents were also evaluated on their familiarity with spine procedures before and after the use of our primer tool.

RESULTS

Comparing pre- and post-application of the educational primer tool, there is a global improvement in level of practical spine knowledge (5.0 vs. 5.7), skills in positioning patients pre-operatively (3.5 vs. 6.3), and confidence in performing during the spine rotation (3.8 vs. 5.3), and improvement in theory knowledge scores (36.6 vs. 38.7). There is also a measurable decrease in the level of stress reported by orthopedic residents toward the spine rotation before and after the use of the learning tool (6.8 vs. 5.3). 100% of surveyed respondents post-learning acknowledged that the learning tool was useful.



CONCLUSIONS

This pilot study shows promising results in improving learning outcomes for residents during the spine rotation, especially in terms of practical knowledge and levels of confidence, as well as reducing stress in facing the spine rotation. Further longitudinal follow-up and a larger cohort study will be required to validate this positive outcome.

D1002

ACADEMIC LIBRARY USAGE: COMPARATIVE QUESTIONNAIRE STUDY ON 2ND AND 3RD YEAR MEDICAL STUDENTS ABOUT THEIR VIEWS AND ITS EFFECTIVENESS ON THEIR EDUCATIONAL OUTCOME.

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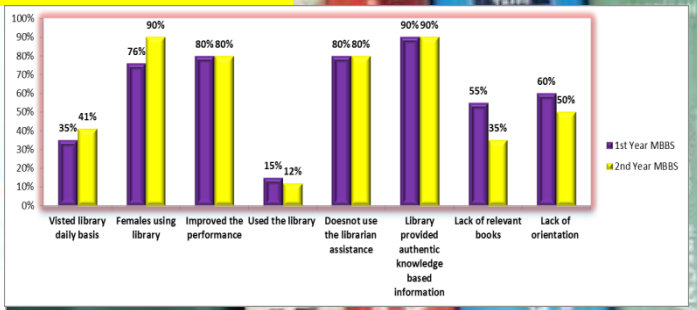
Introduction:

One of the major goals of medical education is to encourage students to maintain their medical knowledge by becoming life-long learners. Libraries are responsible for acquiring, preserving and providing access to books, periodicals and other media of information. The undergraduate medical program aims in training the students to become primary physician. During the training period, adequate emphasis is placed on ability to collect and analyze information and to correlate them in taking care of patient.

Methodology:

Comparative cross sectional study included 100 and 80 1st and 2nd year students who had successfully completed their course. With informed consent, information was collected on a pre-designed, pre-tested and self-administered questionnaires. The collection was done on the same sessions and the data entered in the Microsoft excel. The data analyzed in SPSS version 20 and student T Test was used to find the significance and p value less than 0.05 considered as significant.

Results:



Discussion and Conclusion:

Medical students may not be able to learn all that they have to know only from traditional classroom lectures. They also must learn to collect information by their own efforts, to develop adequate professional competence. The study done by Dee and Stanley (2005) found that medical students were unaware of taking help from librarian which was also seen in our study. Also study done by Lal P (1999), students used library for books rather than research work which is also in accordance with our study.

In conclusion, a proper use of library should be told to medical students at the beginning of their career and librarian should play a key role in bridging classrooms to library in obtaining proper information and knowledge.

Quote:

One best book is equal to hundred good friends but one good friend is equal to library By.Dr. A.P.J.Abdul Kalam

D1003

The UERMMMCI Pharmacology Students' Perception of the Objective Structured Examination (OSEP) as an Assessment Tool

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Introduction

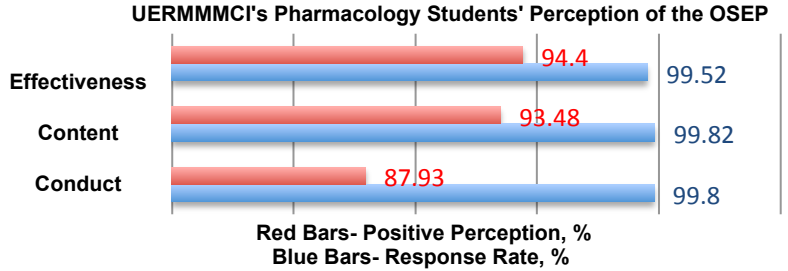
The teaching of Pharmacology prepares the medical sophomore to prescribe drugs on a rational basis. In SGD (Small Group Discussion), the WHO Guide to Good Prescribing is applied in a hypothetical case and the group is to come up with the "right" prescription.

The OSEP was initiated to provide an additional and objective means of assessment because the evaluation of individual performance poses a challenge in SGD. Hence, the aim of this study was to determine the student's perceptions of the OSEP as an assessment tool: 1) its effectiveness; and 2) its content and conduct.

Methodology

The survey was conducted after Ethics Review Committee approval was obtained. The tool used was pilot tested and refined. The responses of participants who gave informed consent were included in the study. The OSEP is an oral, time-bound, one-on-one examination given to Pharmacology students at the end of School Year 2016-'17. The trained examiner administered the structured set of questions and the student's performance was evaluated using a standardized rubric similar to what is done in OSCE (Objective Structured Clinical Examination). Thereafter, the student's perceptions of the OSEP were collected. The participants indicated their level of agreement to 16 statements using a Lickert Scale of *1* to *4* (*strongly disagree* to *strongly agree*). The median score for each statement and the proportion with *positive perception* were computed.

Results



A total of 414 students of Pharmacology participated in the survey. Most were single, Filipino, and 20-25 years old. The mean response rate is 99% and the median score for all statements revealed a *positive perception* of the OSEP as an additional assessment tool. The study revealed that 94%, 93% and 88% have a *positive perception* of the effectiveness, content and conduct of the OSEP, respectively.

Conclusion

In conclusion, the students perceived the OSEP as an effective assessment tool in Pharmacology. Furthermore, the perceptions on its content and conduct were also positive.

Additional studies to explore the relationship between final grade in Pharmacology and the OSEP are recommended because both are indicative of individual performance in the course.

D1004

ARE GENERAL SURGICAL RESIDENTS HAPPY WITH THEIR TRAINING PROGRAM?

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Introduction

Singapore introduced the residency system in 2010. Training objectives of the residency programs are based on core competencies defined by the Accreditation Council for Graduate Medical Education-International (ACGME-I), and aim to develop a structured, competency-based, supervised approach to training, while also exposing residents to administrative, teaching and research roles[1].

Singapore has 3 general surgical (GS) residency programs. GS is a stressful occupation. The training years during residency are even more so, as residents juggle lack of sleep, demanding training programs which develop core competencies, long working hours, as well as their personal lives[2].

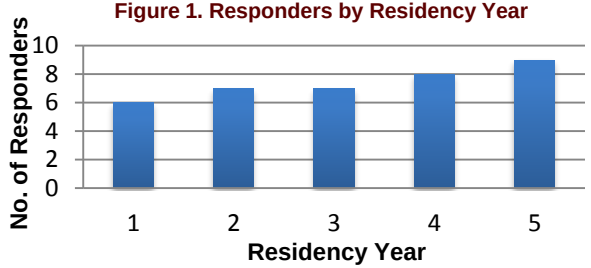
Methodology

We evaluated the satisfaction level of residents in one GS residency in Singapore, and factors that contributed to it in 2017. The 'Happiness Index', adapted from the 'Satisfaction with Life Scale' by Ed Diener *et.al*[3] was used to assess the satisfaction level of the general surgical residents.

Results

There were 36 responders to the survey (92.3% of 39 residents) in the 1st half of 2017, and 29 of 32 residents (90.6%) in the 2nd half of 2017.

Figure 1. Responders by Residency Year



Satisfaction level of residents maintained at 83% throughout 2017 (83.3% in the 1st half of 2017, and 82.8% in the 2nd half of 2017, p=0.95). Camaraderie was the prime reason why residents were satisfied.

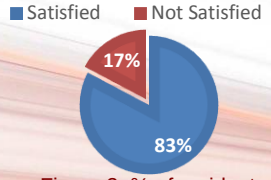


Figure 2: % of residents satisfied with the residency

Despite GS residency being a demanding training involving long hours and a stressful environment, strong relationships resulted in high satisfaction (83%).

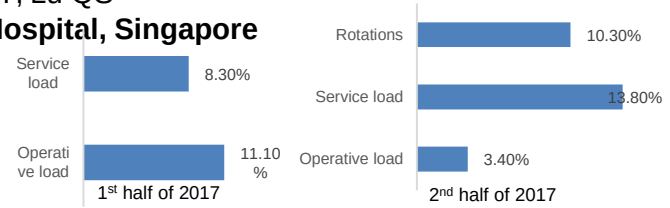


Figure 3: Ways residents would like to improve the residency

63.9% of residents wanted to improve the residency, most significantly in terms of operative load (11.1%) in the 1st half of 2017. Interventions such as reinforcement to faculty of target numbers and operations to be performed by residents within subspecialty teams, as well as set operative goals for residents. This dropped to 3.4% in the 2nd half of 2017, with the main suggestion to ↓service load (13.8%). Residents likely recognised the targeted approach to their operative learning.

Service demands have been consistently mentioned among other variables. Measures have been instituted over the years eg. hiring of resident physicians, nurse clinicians, research nurses, etc. It is highly probable that residents have come to accept service as a painful but necessary part of the training, as other programs have[4] .

Conclusion

The GS residents in our training program are generally satisfied with the residency, with camaraderie being key. Acting on feedback maintained satisfaction.

D1005

Potential Factors Related To Medication Errors Among Registered Nurses In An Acute Hospital In Singapore

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Introduction

Medication errors (ME) lead to undesirable adverse outcomes. Despite efforts aimed at minimizing medication errors, medication errors incidences has not decreased significantly. There are limited nursing studies investigating in-depth on the factors related to medication errors among nurses (Salmasi et al., 2015). ***The aims of this study are: to explore the perceptions of nurses on medication errors and possible contributing factors that affect safe medication administration; gain feedback from nurses to identify their learning needs for safe medication practices.***

Methodology

•Retrospective data from 118 incident reports of medication errors involving nurses over a 12 month period from Jan-Dec 2016 was analyzed.

•Registered nurses (RN) working in general wards are invited to complete self-administered questionnaires. A modified Gladstone tool (Gladstone, 1995) was used, which includes 4 components: nurses' perceptions of (1) why ME occurs, (2) ME under different clinical scenarios, (3) ME reporting and, (4) training on medication administration.

Table 1: Retrospective data from Jan – Dec 16

Type of error	**Omission**	**22%**
	Wrong dose	**19%**
	Wrong rate	**10%**
	Wrong drug	**8%**

References & Acknowledgements:

Special thanks to the Education Department Office, and all nursing supervisors and staff for supporting in this research.

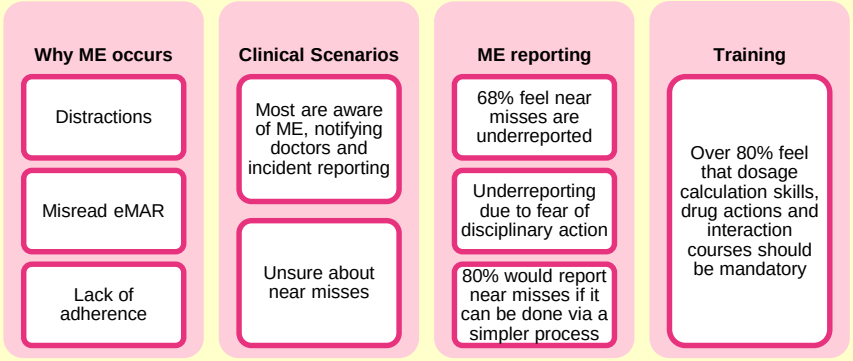
Gladstone, J. (1995), Drug administration errors: a study into the factors underlying the occurrence and reporting of drug errors in a district general hospital. *Journal of Advanced Nursing, 22*(628–637). doi:10.1046/j.1365-2648.1995.22040628.x

Salmasi, S., Khan, T. M., Hong, Y. H., Ming, L. C., & Wong, T. W. (2015). Medication Errors in the Southeast Asian Countries: A Systematic Review. *PLoS ONE*, *10*(9), e0136545. http://doi.org/10.1371/journal.pone.0136545

Results

•**Response rate of 58% (342 out of 585 targeted group)** completed questionnaires over one month.

Figure 2: Results from questionnaires



Conclusion

The findings on why ME occurs correspond with the retrospective data. Distractions during medication administration should be minimized and adherence to clinical standards could be encouraged. Knowledge deficit was not exhibited in contributing to medication errors. Process of reporting near misses can be simplified, and promoting a safety culture would encourage reporting of medication near misses and errors. Training programmes and further qualitative studies focusing on supporting RNs' ability to manage the challenges faced daily on medication administration are paramount.

D1006

Teaching Medical Error Disclosure using Simulation

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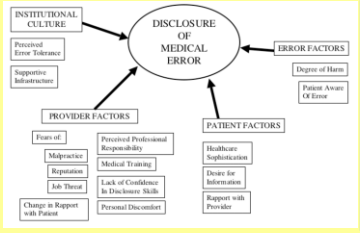
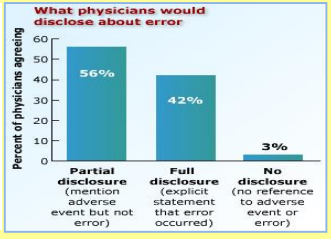
Introduction

Disclosure of medical errors to patients and their family is essential to maintaining trust and is an important part of patient-centered medical care. Although most physicians agree that medical errors should be disclosed to patients, many physicians continue to remain silent due to the fear of litigation, etc. This study presents an educational module that focuses on the disclosure of medical error.





Gallagher TH, et al. Choosing your words carefully: how physicians would disclose harmful medical errors to patients. Arch Intern Med. 2006;166:1585-93.

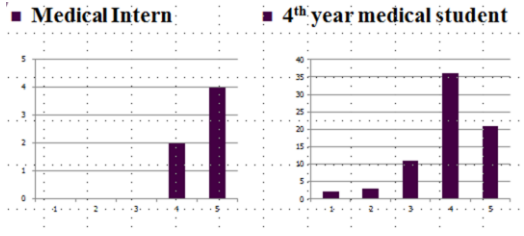
Methodology

In 2014, eighty-three 4th year medical students at Seoul National University College of Medicine and six medical interns at Seoul National University Hospital and Choong Ang University Hospital (Seoul, South Korea) participated in this study. The education program included practice of error disclosure using SP, facilitated reflection, feedback, short didactics for wrap-up and essay. We analyzed the questionnaire and learner satisfaction.

Results

Participants' performances between medical students and medical interns showed no significant differences. As to the sensitivity to medical errors, there were significant differences of participants' sensitivity to medical errors according to the severity of medical errors. But sensitivity to medical errors was not significantly different between medical students and medical interns. Medical interns more satisfied with the education program than medical students (100% vs. 78%)

◆ Satisfaction to the Education Program



◆ Free comments

- It was great! Because I could experience disclosing medical error, not just learn that.
- I could realized that drug allergy history taking is very important.
- Communication is very important as much as medical knowledge.

Conclusion

Education program for disclosing medical error was satisfactory and extending the program to more diverse scenario and diverse group of physicians (such as senior residents and faculties) is needed.

Experience of our journey through Medical Grand Challenge 2017

D1007

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[1]Yong Loo Lin School of Medicine, National University of Singapore, [2] School of Business, National University of Singapore, [3]Department of Orthopaedic Surgery, National University Health System

What is Medical Grand Challenge (MGC)?

- Inaugural student led medical competition started by Yong Loo Lin School of Medicine
- At least 1 medical student plus at least 2 students from other faculties to form a team
- One mentor and $500 grant for each team
- Teams come up with solutions to solve healthcare problems brainstormed by students and medical professionals

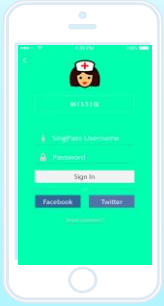
Methodology

- Sequence of events:

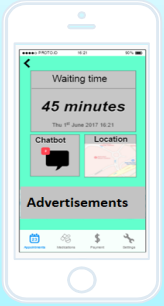
- [a]3 workshops by guest speakers on intellectual property, financial projections and ethical considerations. Visits to firms such as Jaga-Me, SGInnovate and Medtronic.
- [b]Midterm review of a 1,500 words proposal about our product and business strategy.
- [c]Final submission of a 1,500 word proposal, 3 minute video and a poster.
- [d]4 min poster presentation followed by 6 min oral presentation by top 6 teams. Judges included medical and business academics, start-up founders and venture capitalists.

Results

- Out of 35 teams, 17 teams were shortlisted for the finale.
- 1st prize winner ($20,000): Hipportable
- 2nd prize winner ($15,000): PD Safe
- 3rd prize winner ($10,000): FootSense
- Top 2 teams are in the midst of filing for patents.
- Our group developed “MissiQ”, a mobile phone application with the aim to improve patients’ clinic experience.
- We were interviewed by The New Paper as part of the article “NUS students develop apps to help patients” published on 21 August 2017.



MissiQ Homepage



Live update of waiting time

Chatbot

Our team at the finale

Conclusion

MGC serves as an inspiration for other medical schools and professionals to also include such meaningful events in their curriculum to spur the next generation’s medical professionals to work collaboratively with other disciplines to tackle future healthcare challenges.

D1008

EVALUATION OF EDUCATION STRATEGIES FOR OCCUPATIONAL CENTERED PRACTICE

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Introduction

Occupation-centered (OC) practice is the core philosophy in Occupational Therapy (OT) practice. However, it is difficult to be implemented in Singapore General Hospital (SGH), a predominantly biomedical environment. In 2016, OT Department SGH implemented a series of educational strategies to facilitate OC practice. This paper aims to evaluate these strategies for the planning of the coming year's educational strategies.

Methodology

- Educational strategies were identified and evaluated based on seven factors identified in the Integrated Behavior Model (IBM) [1] (Figure1).
- Six educational workgroup members participated in the study as experts to conduct the evaluation.

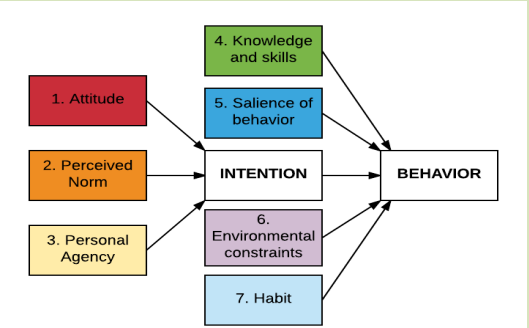

Figure 1. Integrated behavior model

Results

- Six educational strategies were identified.
- All seven factors of the IBM were addressed (Table 1).
- Personal agency and habituation were least frequently addressed.

Table 1: Six educational strategies and the seven factors of the IBM

Educational strategies	IBM factors addressed						
	1	2	3	4	5	6	7
Sharing of success stories		✓			✓		
OT Day thematic focus on "Occupations"	✓	✓			✓		
Motivational talk by Head of Department	✓	✓					
Occupation- centric evidence-based clinical guidelines		✓	✓	✓		✓	✓
Use of Activities of Daily Living (ADL) Toolkits	✓			✓	✓	✓	
Mandate component of occupations for all in-services		✓			✓		

Discussion

- To facilitate personal agency and habituation in OC practice, consistent and explicit use of language could be one of the ways. Examples include terminologies used in both verbal and written clinical communication [2].

Conclusion and recommendation

- Future educational strategies should aim at improving habituation and personal agency toward OC practice.

References

1. Montano, D. E., & Kasprzyk, D. (2008). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. In K. Glanz, B. Rimer, & F. Lewis (Eds.), Health behavior and health education: Theory, research, and practice (pp. 67-92). San Francisco, CA: Jossey-Bass.
2. Wilding, C. & Whiteford, G (2008). Language, identity and representation: Occupation and occupational therapy in acute settings. Australian Occupational Therapy Journal (2008) 55, 180–187.

D1010

STUDENT PERCEPTION ABOUT TEACHING THEIR PEER

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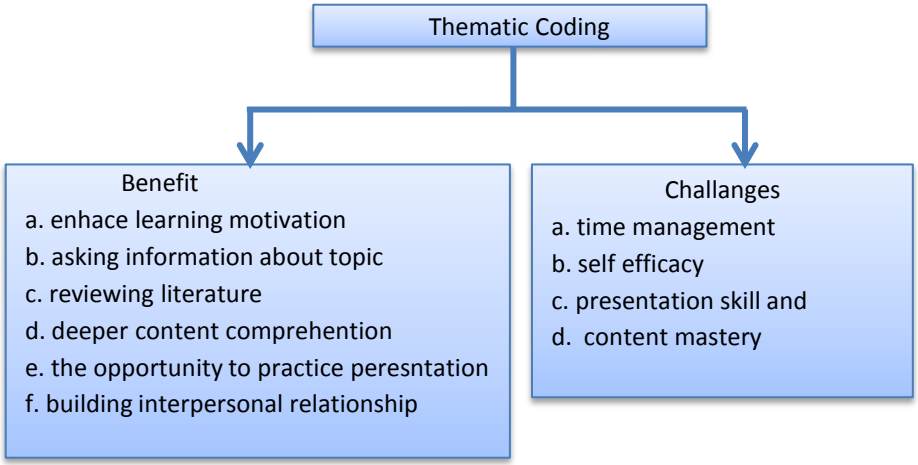
Introduction

Students as peer teacher have been widely used because peer teacher creating a comfortable and safe educational environment for learners that promotes a free flow exchange of ideas. Peer teachers have been found to be more supportive and encouraging and reduce learner anxiety. This research was aimed to explore student perception about the benefit and challenges of teaching their peers.

Methodology

The research was conducted at Faculty of Medicine Mulawarman University using qualitative approach. Data was obtained using the focus group discussion (FGD). FGD was carried out for students who have a teaching experiece in peer teaching. As much as 15 students is involved in this research. Students consist of 6 males and 9 females. They were divided into three FGD groups. All FGD were audio-taped and transcribed verbatim. The FGD transcripts were analysed thematically.

Results



Conclusion

Evidence shows that peer teaching in medical student has benefit and challanges as well. It becomes attention for medical institution to applying peer teaching.

D1011

INTEGRATED CROSS-SPECIALTY MEDICAL EDUCATION BEGINNING WITH FIRST-YEAR CASE-BASED MEDICAL INTERVIEW OSCE: IMPORTANCE OF A CONTINUOUS GRADED PERFORMANCE EVALUATION

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[2] Centre for International Affairs, The Jikei University School of Medicine, Japan, [3], Graduate School of Medicine, Akita University, Japan

Introduction

It is essential to assure that medical students master the basic cases and develop necessary communication skills. In Japan, moreover, as we face the Tokyo Olympics, the international community expects physicians to be capable of taking history and performing physical examinations in English.

Methodology

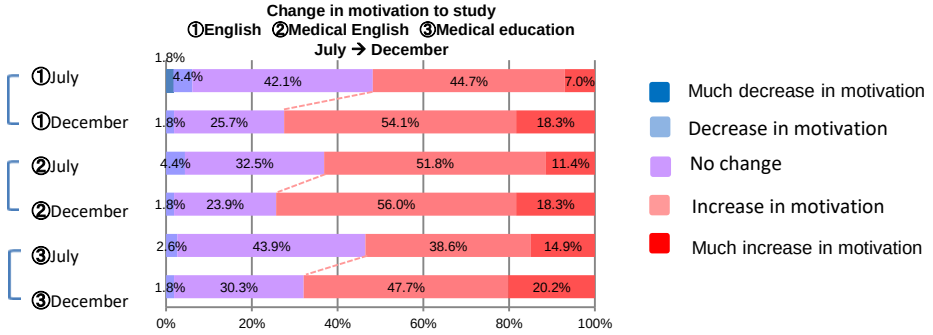
At the Faculty of Medicine, Akita University, we began to integrate medical interviews and clinical reasoning studies of major symptoms (chest pain and abdominal pain) with basic and clinical medicine programs for all first-year medical students in 2011. Since then, we have required students to perform medical interview OSCEs biannually (in July and December—two stations each) with the cooperation of Japanese and English-speaking non-Japanese simulated patients (SPs) in performance evaluation. We conducted questionnaire surveys immediately after the first-year OSCEs to find out the effects of the program on students' motivation.

Results

We found that the ratio of students who indicated that the experience had increased their motivation to study medical English went up by 74.3%.

Results (continued)

From the students' responses in the open comment section of the questionnaire forms, we learned that the SPs' feedbacks (given in English for English OSCEs) following each clinical examination were very popular. In addition, the SPs noted the remarkable improvement in communication skills among the students in general, from July to December



Conclusion

For our educational strategy centering around medical interview OSCEs starting in the first-year of medical school—a strategy that is clearly raising students' eagerness to learn—we have named it "OSCE Oriented Approach."

We propose that this "OSCE Oriented Approach" will be a good strategy of medical education in non- English speaking countries.

ID: D1012

HOW DO ELECTIVES INFLUENCE CAREER CHOICES OF UNDERGRADUATE MEDICAL STUDENTS AT NUMED?

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1. INTRODUCTION

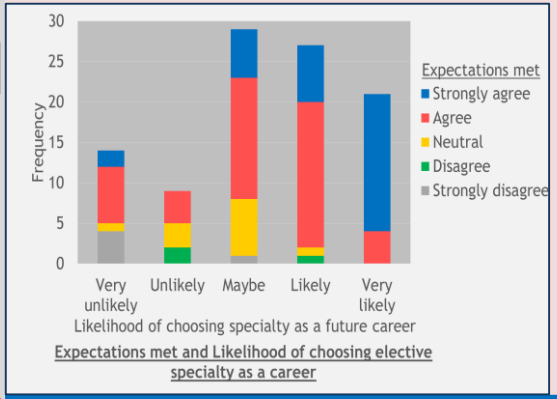
A student's experiences in medical school tends to have an impact in determining career choice. An elective offers students the unique opportunity of choosing the area of study they are interested in learning. Duration, discipline, setting and choice are key determinants of how a medical student will perceive their elective experience [1].

2. METHODOLOGY

A quantitative cross-sectional study was carried out using anonymous, voluntary questionnaires for data collection distributed among the current stage 5 MBBS students at NUMed (n=93) following informed consent. The questionnaires comprised of binary, multiple choice and Likert scale questions. There were sections on demographics, details surrounding the elective such as duration, location, specialty and elective experience by querying about satisfaction, likelihood of being a future career choice and positive and negative influences. Data was analysed in the R Environment for Statistical Computing.

3.RESULTS AND DISCUSSION

Data from 54 students was collected from the Stage 5 batch (Participation = 58%). Out of 54, 46 students chose to do 2 electives (85.2%) therefore information from a total of 100 electives was available. 78 electives were of a medical specialty and 22 of a surgical specialty. The most commonly chosen specialties were emergency medicine (n=15), paediatrics (n=12) and internal medicine (n=9).The main reasons behind choosing the elective were: Interest in the specialty as a future career (n=54); Wanting to experience a different healthcare setting (n=52); To consolidate knowledge and improve clinical skills for final year (n=49). It was noted that; **Elective specialties were more likely to be chosen as a future career choice if the expectations were strongly met as shown in the graph (Chi-squared test χ^2= 41.44; p=0.001).** Factors with the biggest impact, Supervisor's influence: 77 reported a positive impact while 13 reported a negative impact. Interest in specialty after elective- 50 electives reported greater interest after the elective while 15 reported reduced interest after the elective.



Expectations met and Likelihood of choosing elective specialty as a career

4.CONLUSION

The study further asserts that experiences in medical school have an impact on future careers and that electives are a good predictor of likely future career choice. It will prove useful to do a cohort study for further exploration of this relationship.

REFERENCE: 1. Cleland, J.A., et al., A survey of factors influencing career preference in new-entrant and exiting medical students from four UK medical schools. BMC Medical Education 2014.

Abstract ID : D1013

National University Cancer Institute, Singapore
A member of the NUHS

A PILOT STUDY INVESTIGATING THE EFFICACY OF NEAR PEER LED TEACHING FOR BREAKING BAD NEWS

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Background and Aims

Breaking bad news is a common yet difficult task for residents in the oncology unit. However, there exists a critical gap with the lack of formal teaching for residents in the communication of bad news. We postulate that **near peer tutors (NPT)** who are 2-5 years ahead of the tutee may be capable of more effectively delivering course material due to increased cognitive and social congruence with their tutees. This pilot study examines NPTs as tutors alongside **traditional teachers (TT)** to explore their acceptability, effectiveness, and years of 'distance' between tutors and tutees.

Methods

Year 2 Internal Medicine residents rotating through the department of Haematology- Oncology were recruited in our pilot study. After the one hour tutorial by the tutor, a Likert Scale questionnaire (1=Very Poor ; 5 = Excellent) with 15 questions was administered to the 10 participants of the study. The TT tutorial was conducted 1 week prior to the NPT tutorial and participants filled in the questionnaires for both tutorials.

Questions	Median Score	
	TT	NPT
Overall Rating	5	5
Student's Prior Knowledge	3	4
Tutor's Delivery	5	4
Worthwhile use of time	4.5	4
Student's Enjoyment	4	5
Tutor's Enjoyment	5	4
Relevance of content	4.5	4
Tutor's Approachability	5	5
Post tutorial confidence	4	4
How invested tutor appeared	5	5
Effectiveness of tutor	4	4
Clarity of explanations	4	4
Awareness of outcome of tutorial	4	5
Receptiveness to student's input	4.5	5

Results

Both TT and NPT fared equally overall, but TT was better in terms of delivery, topic relevance and time used; while NPT was better for receptiveness to the participants and awareness of their learning outcomes.

The TT being an accredited specialist, was superior with the subject matter of breaking bad news and content delivery. On the other hand, the NPT was able to hear the tutees better with their comparable insights and experience, thus allowing for a greater cognitive and social congruence with the residents.

Conclusion

In our pilot study, near peer teaching of breaking bad news seems to be at least comparable to that by a traditional tutor. This novel concept of near peers (2-5 years ahead of the class) teaching of breaking bad news has the advantage of their comparable insights and experience, and may be effective teachers and mentors to the residents who may grapple with difficult communication in oncology.

We believe that this novel concept is worthwhile exploring in a larger scale study comparing traditional tutors and near peer tutors in coaching the art of communication.

D1015

An Interactive Journey through the Nephron: How an Animated Medical Courseware Package Helps to Deliver Complicated Physiological Mechanisms to a Large Medical Class

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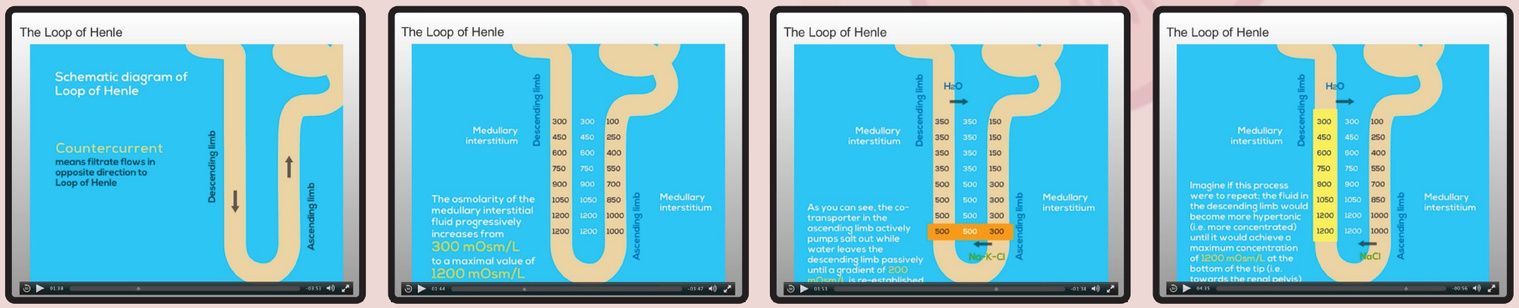
Aims

Every year, there are considerable numbers of medical students who find it difficult to understand the complicated processes of re-absorption and solute exchange that occur daily in the nephrons of the human kidneys, namely the Loop of Henle. The aim of this project is to design a highly interactive and advanced courseware package to help second-year medical students to effectively learn and revise the complex sequences of mechanisms by which electrolyte and water molecules are handled inside the tubular structures of the Loop of Henle. To illustrate these mechanisms, we created a medical courseware package featuring step-through and interactive animations.

Methods

Four animated videos have been developed and packaged into a courseware website to facilitate usage and viewing (Figure 1). The medical courseware has been used in two different ways as both pre-class and post-class viewing materials. An auto-checked quiz has also been embedded into the courseware website to test students' understanding of the animated mechanisms.

Figure 1. Screen captures of some animated videos



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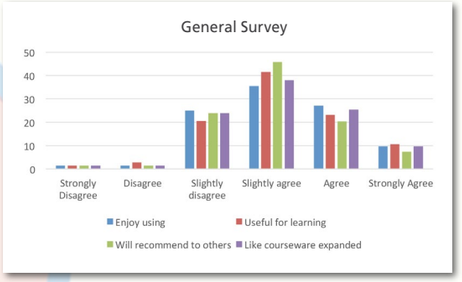
Results

An evaluation of the medical courseware was conducted by the end of the course (Figure 2). 61.6% of the students (146 out of 237 students enrolled into the course) responded to the evaluation and of which 59% agreed that their knowledge on the mechanisms delivered in the courseware has improved after use; 72.2% of the students enjoyed using the renal courseware and 75.4% agreed that renal courseware is useful for learning.

Conclusions

The vivid animations were positively received by many medical students and through the open-ended questions, students found the auto-quiz useful to reinforce concept understanding (Figure 3). In future, a new animated courseware covering the renal handling of acid and base will be created.



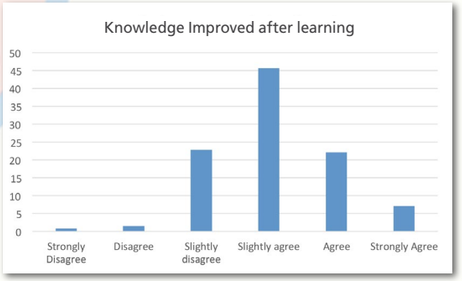


Figure 2. Evaluation results of the medical courseware.

Figure 3.
Some positive comments from the students

"The animation is nice and correctly show how fluid exchange between tubule and interstitium";
"Supplements tutorials very well, more informative than lecture slides"
"The animation is vivid and the explanation is clear".

Acknowledgements

This project is supported by the Teaching Development Grant 2012-2015 Triennium entitled Development of a Practical Model to Support Teachers at CUHK to Create Courseware for Enhancing Teaching and Learning.

D1016

The Role Of Coaching In Enhancing Staff Compliance With Quality Requirements In A Private Medical Science College In Saudi Arabia

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Introduction

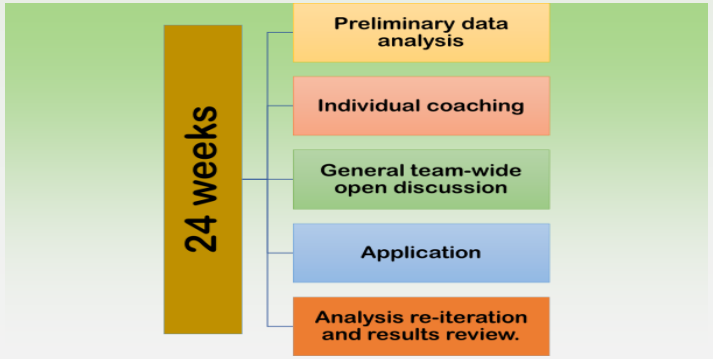
Staff development programs with coaching components are potentially valuable in advancing some of the current challenges in Health professional education. The enhancement of the quality of teaching and learning has become inevitable in relevant schools in the last few decades. A significant relation between such quality and reporting processes has been established before. Teaching staff are required to document how their courses and programs are delivered. Moreover, they are advised to review and report routinely on their performance.

Objectives:

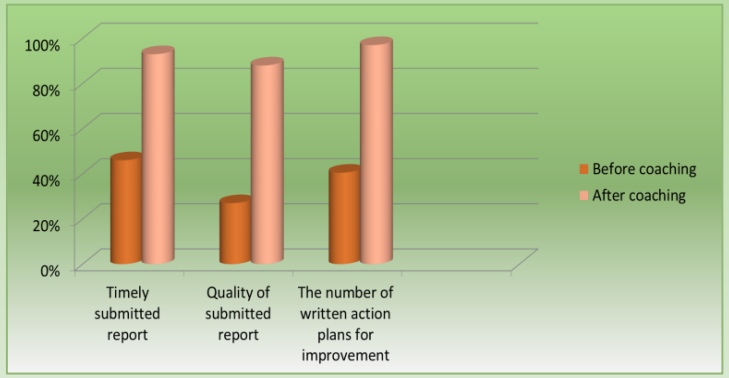
To examine the role of coaching in improving the staff performance and compliance with the quality requirements regarding implementing, reporting and improving their courses.

Methodology

A five-stage model of coaching as a developmental intervention was delivered over a period of 24 weeks.



Results



Conclusion

The ability of staff members to make significant changes to their workflows depended on having clearly defined processes, cooperative staff, and leadership commitment. Consequently, they could submit their standardized quality reports on a timely manner. Further, they properly set their improvement plans and showed positive attitudes in complying with quality requirements. Based on the baseline where the staff started, this step has brought about significant changes; on which further steps could be built towards continuous improvement and accreditation. The model requires to be tested in different settings to validate its suggested role. Our findings argue for the effectiveness of coaching for reducing errors, as well as improving staff performance and attitudes among the medical science colleges.

Exploring Local Nursing Students' Perceptions on Receiving Feedback on Clinical Performance: A pilot study

D1017

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Introduction

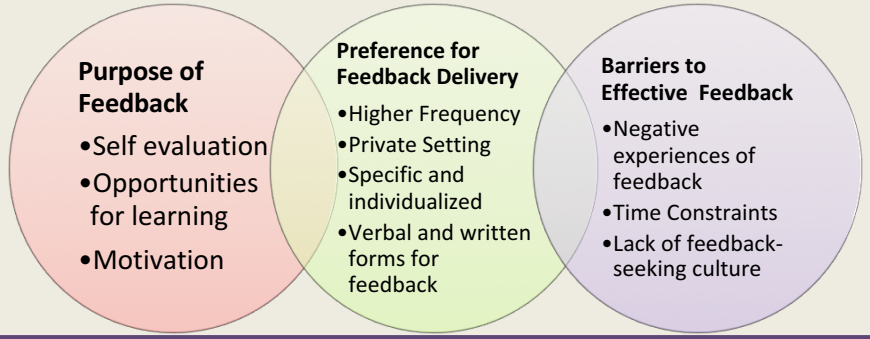
- Feedback is essential in learning and teaching in guiding nursing students (Clynes and Raftery, 2008).
- Feedback provides nursing students critical insights of their performance and offer advice on areas of improvement (Belgey and White, 2003; Wright, 2012).
- **The aim of this study is to explore local nursing students perceptions on receiving feedback on clinical performance**

Methodology

- A qualitative study design consisting of semi-structured individual interviews was adopted in this study
- 9 final year diploma nursing students undergoing clinical placements in Khoo Teck Puat Hospital were recruited via email invitation into the study.
- Participants were asked open-ended questions about their perceptions of receiving feedback on clinical performance. Data from the interviews were coded and thematically analyzed.

Results

Figure 1: Summary of Main Themes



Conclusion

Our findings suggest a need for nursing educators to be attentive to the characteristics of feedback provided to nursing students such as the type, timing and method of delivery. Further studies can be done to explore barriers to effective feedback and the culture of seeking feedback amongst nursing students in the clinical setting.

Acknowledgements

We would like to thank the KTPH Education Department Office, Nursing Research Unit, Clinical Research Unit and the students Involved in this study.

References

Begley, C., White, P. (2003) 'Irish nursing students' changing self-esteem and fear of negative evaluation during their preregistration programme. *Journal of Advanced Nursing* 42 (4), 390–401.

Clynes, P. M. & Raftery, S. E. C. (2008) 'Feedback: An essential element of student learning in clinical practice'. *Nurse Education in Practice,* 8. 405-411

Wright, K., (2012) 'Student nurses' perceptions of how they learn drug calculation skills..Nurse Education Today 32 6, 721–726.

REFLECTION AS A LEARNING TOOL AMONGST INTER-PROFESSIONAL FRONTLINE LEADERS

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INTRODUCTION

Reflection plays a pivotal role in healthcare leadership development. Few studies assess reflection amongst inter-professional frontline leaders.

AIM

Examine the perceptions of inter-professional frontline healthcare leaders on reflection, and to assess the quality of their reflective portfolios.

METHODOLOGY

Participants attended **Inter-professional Leadership Programme,** designed using

C-STAR

Community of practice
Stories-based sharing
Tools-centred
Active experiential learning
Reflection

DATA COLLECTION

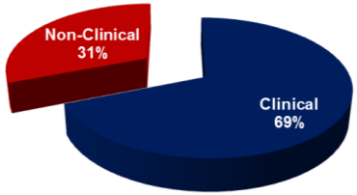
- 5-point Likert online survey
- Reflective portfolios

ANALYSIS

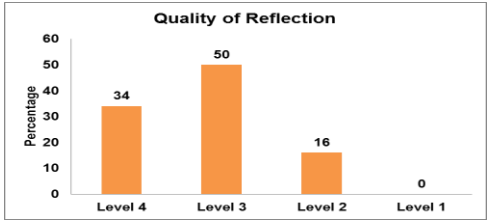
Data was analyzed using:

1. **Independent sample t-tests**: Compare responses between clinical & non-clinical leaders
2. **Hatton & Smith's framework:** 2 independent raters rated quality of reflection recorded in reflective portfolios

RESULTS



Profiles of the Participants



16(50%) and 11(34%) reflective portfolios rated at levels 3 and 4 respectively

Participants' Perceptions		Statistics
Greater satisfaction	Clinical Leaders	(*M* = 3.95, *SD* = .39, N = 20), *t*(10.5) = -1.73, p=.11.
	Team Leaders	(*M* = 3.91, *SD* = .53, N = 22), *t*(8.74) = -1.56, p=.16.
Strongly recommend (80%)		(*M* = 4.04, *SD* = .36, N = 24), *t*(6.26) = -6.16, p<.001
Not time consuming		(*M* = 2.92, *SD* = .78, N = 24), *t*(28) = 3.96, p<.0001.

CONCLUSION

- Inter-professional frontline leaders appreciated & applied reflection as leadership learning tool
- Explore reflection methods to enhance readiness amongst non-clinical frontline leaders

D1020

OSCE SIMULATION AS A TOOL TO ENHANCE LEARNING IN MUSCULOSKELETAL UNDERGRADUATE TEACHING

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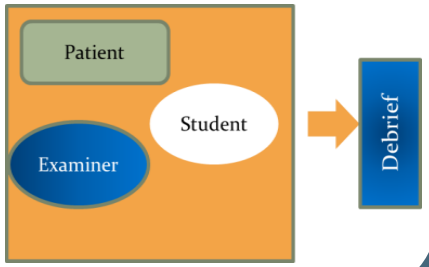
Background:

Mock objective structured clinical examination (OSCE) or Simulation in musculoskeletal (MS) teaching has not been widely practiced. Running a simulation where signs and symptoms are required is difficult. Teachings using video and Power-point do not allow hands-on practise. OSCE has become a standard, reliable and effective assessment method for clinical competency and clinical reasoning. In this multi-station competency-based assessment, students are largely expected to elicit succinct history and clinical signs from patients with common clinical conditions. In addition they role-play as the patient, exam candidate and examiner during the simulation practice.

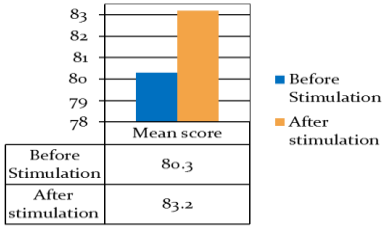
Method:

Comparative retrospective study over 2 years involving 600 students. New method of simulation training incorporated into the MS teaching block. Pre-event briefing and cases preparation; OSCE session incorporating 3 different scenarios with video recording; followed by Debriefing feedback session. Two groups were identified and compared: those who underwent simulation training and those who did not were analysed based on the results of the end-of-posting-test (EOPT) scores that involved patient contact and examination. The exam cases were of similar diagnoses and complexity with a constant group of experienced examiners.

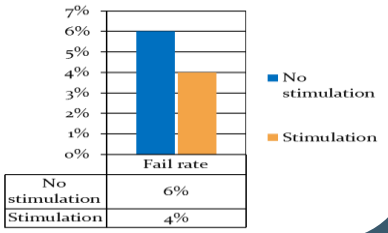


Results:

There was an increase in the mean EOPT exam scores from 80.3% to 83.2% for the whole cohort. In addition, there was a reduction in the failure rate for these stations from 6% to 4% (18 students failed at least one station compared to 12 in the mock OSCE group). All students found these sessions valuable based on their subjective feedbacks.



Mean score	
Before Stimulation	80.3
After stimulation	83.2



Fail rate	
No stimulation	6%
Stimulation	4%

Discussion:

Study results show that role-playing /simulation teaches students many aspects such as teamwork, communication, awareness, clinical skills, inter-professional skills and consultation skills in addition to an objective improvement in exam scores and pass rate. Emphasis on value of effective debriefing and time allocation. Long-term aim to improve outcome and safety; better equipped doctors.

Conclusion and take-home message:

Orthopaedic learning can be enhanced, made more enjoyable and effective when simulation or role-playing sessions are incorporated into the teaching component.

D1021

CTSP: an internal medicine survival guidebook for residents by residents

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Introduction

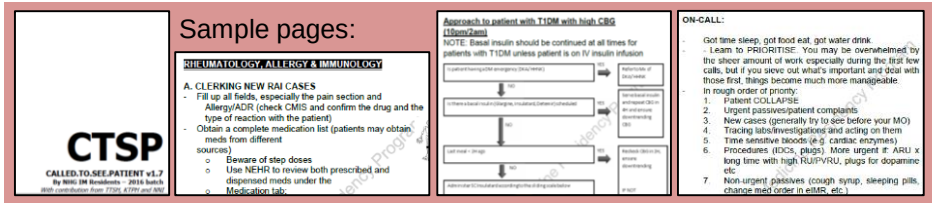
- "Called to see patient" or CTSP is a guidebook by the National Healthcare Group (NHG) Internal Medicine (IM) residency programme
- Unlike theory intensive handbooks, CTSP focuses on the practical aspects of medicine

Methodology

Year one and two residents write the chapter → Write-up vetted by faculty from the relevant subspecialty → CTSP revised yearly

- CTSP comprises of the following chapters: Dermatology, Endocrinology, Gastroenterology, General Medicine, Geriatric Medicine, Haematology, Infectious Diseases, Medical Oncology, Neurology, Palliative Medicine, Rehabilitation Medicine, Renal Medicine, Respiratory Medicine, Critical Care Medicine and Rheumatology, Allergy and Immunology

Sample pages:



Results

For readers	Residents found CTSP invaluable to their daily work	Even non-residents have requested for access	Hence CTSP made available on NHG elearning portal
For writers	Authors consolidate their knowledge	Guided by specialists, writers refine their treatment algorithms	Writers make their foray into teaching and develop into clinical mentors

Conclusion

- Having a guidebook for residents written by residents yields positive outcomes for both the readers and the writers
- The guidebook encourages both systems-based practice and practice-based learning and improvement

D1022

Holistic approach in engaging Clinical Faculty and Adjunct Clinicians

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Introduction

The NUS Medicine undergraduate programme has more than 70% of its clinical training held at hospitals/institutions. It engages more than 2,000 clinicians as Clinical Faculty Scheme (CFS) and Adjunct Clinician Educators (CE) to train about 1500 medical undergraduates each year.

The School faces the challenge of engaging the CEs due to its large number and the lack of proximity between the school and its clinical training partners. The 3Cs approach* (Connect, Communicate and Collaborate) was adopted in engaging the CEs. The initiatives were implemented since 2013.

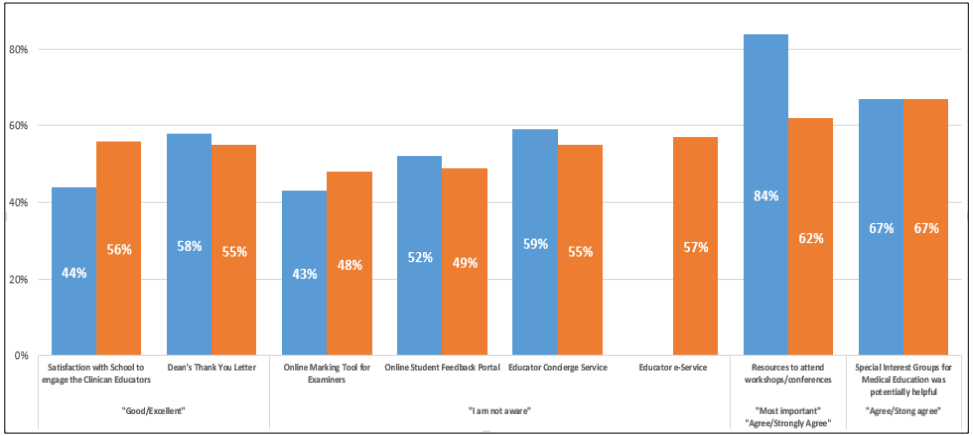
Aim

Identify initiatives which are useful and work on improvement plans that are of interest and relevance to the CEs. Similar initiatives could be adopted by other medical schools to engage their educators.

Methodology

From 2015, annual online surveys comprising of 6 questions, 5 rated on a Likert scale and 1 qualitative question were sent to 1858 and 2822 educators in 2015 and 2016 respectively. It measures the awareness and effectiveness of the initiatives launched and the satisfaction level as educators of NUS Medicine. Response rates were 12% and 22.5% in two years.

Results



Qualitative Feedback:

Communication and Engagement**:** explore common physical space/platform for educators' interaction, engagement at specialty level and across institutions, more direct engagements between the School and educators. Faculty development**:** more workshops and funding. More transparency on processes and pro-activeness in promoting CEs.

Conclusion

From the results, the School continues with the initiatives that are useful. An educator portal was developed to raise awareness of available resources and for CEs to stay connected with the School. Regular meetings were held with different levels of stakeholders (senior management, CEs and administrators) to boost communications and collaborations.

NUS National University of Singapore

D1023

The Role of Chief Medical Residents in Japanese Internal Medicine Residency Programs: A Pilot Survey in Japan

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Introduction

In Japan, junior residency and internal medicine senior residency programs are emerging. As they increase, several programs made their own CMR(Chief Medical Resident) systems. Because these systems were original, there were no standards and no networks of CMRs like APDIM (Association of Program Directors in Internal Medicine, USA). There were no preceding surveys reported that focused on CMRs in Japan. So, we sampled and gathered a pilot survey to **understand the variable roles and demographics of Japanese Internal Medicine Chief Medical Resident system**.

Methodology

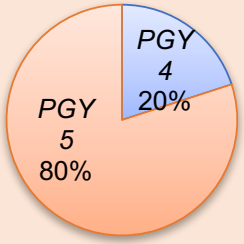
To clarify the actual role of CMRs in Japan, we created a questionnaire consisting of 11 questions and sent to 10 survey respondents who took a role of a CMR within the past three years. Likert scale (1, strongly disagree; 5, strongly agree) was utilized for the questions regarding their perception of the role. The participants were selected based on personal networking, and the response rate was 100%.

Results

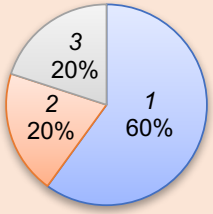
"Experiences of CMR contributed to their own growth"

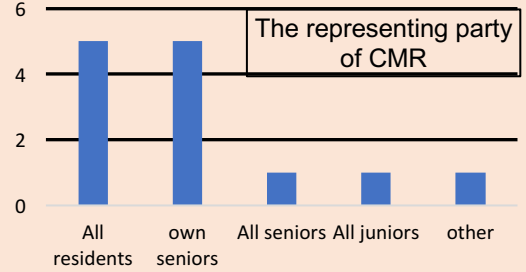
mean score of Likert scale : 4.89 out of 5

Grade of CMRs



Number of CMRs a year





Other questions

- **Advantage**

Get honored 70%

- **Disadvantage**

Increase of workload and duty hours 90%

No supports from their parties 50%

- **Preparations**

No preparations 50%

Conclusion

There is variation of demographics and role of the CMR System in Japan. In general, those who experience the system feel growth, but also feel the increased workload of the job. We lack a standardized accreditation system which organize, teach and oversee CMRs in Japan, so we hope a system will be established in the near future.

D1024

THE PERCEPTION OF MEDICAL STUDENTS AT NUMED TOWARDS A CAREER IN MEDICAL RESEARCH

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Introduction

With the rapid advancement in basic sciences, medical research will need to keep abreast of the changes and translate them into clinical practice. This will warrant an increased number of medical researchers. However, the proportion of graduate medical students choosing a research career pathway has declined in recent years [1]. Introducing research early in the medical curriculum has shown promising results of piqued interest among students [2]. It is pertinent to assess the interest levels of medical students at NUMed about pursuing a career in research and if the interest is low, to identify barriers and attempt to rectify them early during their medical student life.

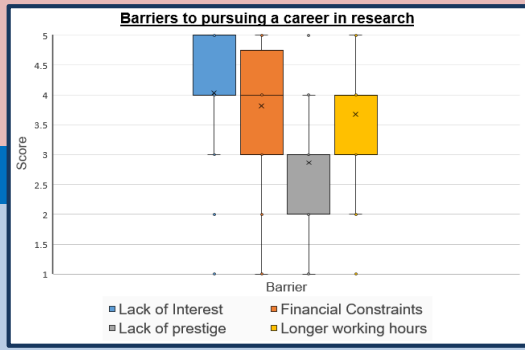
Methodology

A quantitative cross sectional study was carried out using anonymous, voluntary questionnaires for data collection. The questionnaires were distributed between the 28th of February 2017 – 7th of March 2017 among MBBS students of NUMed from stage 1 – stage 5 after obtaining informed consent. The questionnaires consisted of binary, multiple choice and Likert scale questions. Once the questionnaires were collected, statistical analysis was carried out in the R Environment for Statistical Computing.

Results

Data from 294 students was collected spanning all five stages of the MBBS course. (Females – 65%). 40% show an interest in pursuing a career in medical research. Only 30% believe that carrying out medical research will help their career prospects in Malaysia. Though interest in pursuing a research career showed a slight downward trend across the five years, there was no significant difference among stages (Chi squared test: $\chi^2 = 2.05$; $p = 0.72$) or between genders (Chi squared test: $\chi^2 = 1.22$; $p = 0.26$).

The most notable barriers were lack of interest, financial constraints and longer working hours.



Conclusion

A reasonable level of interest was seen towards medical research across all five stage of the MBBS curriculum at NUMed.

Most people agree that the lack of interest is the biggest barrier towards pursuing a career in medical research.
Therefore, steps should be taken by the university to introduce research into the curriculum to stimulate interest and broaden the career options of MBBS graduates.

References

1. Reinders, J.J., Kropmans T.J., and Cohen-Schotanus J., Extracurricular research experience of medical students and their scientific output after graduation. Medical Education, 2005. 39(2): p. 237-237.
2. Zier, K., Friedman E., and Smith L., Supportive programs increase medical students' research interest and productivity. Journal of Investigative Medicine, 2006. 54(4): p. 201-207.

D1025

Enhancing E–learning by curriculum design

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Introduction

E-Learning is popularly used in medical education because of easy learner access and scalability. It may be used to supplement or replace other learning activities in a training programme[1]. Curricular design for E-learning recommend use of case-based scenarios and building interactive quizzes into the module to enhance learners' engagement and retention of learning[2]. Potential disadvantages include impersonal learning without opportunity for feedback[1].

We aimed to evaluate the effectiveness of our interactive online Paediatric Surgery Orientation Program by comparing the learner response to this new program (Figure 1) with a previous orientation program

Methods

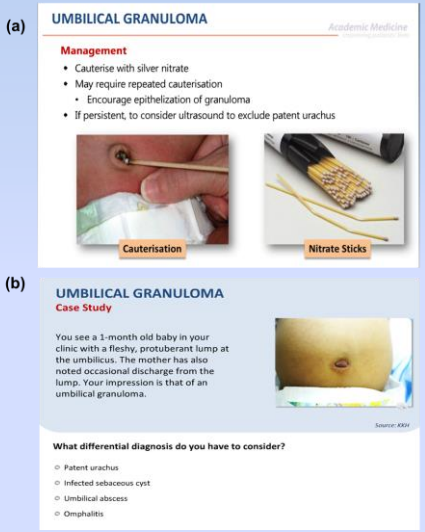
It is compulsory for all new junior doctors to complete the departmental orientation program that comprises general paediatric surgery topics and external topics on pain management, head injury and hydrocephalus, shunts and external ventricular drains (EVDs). The orientation program was converted from old (Voice annotated power-point VAP and traditional faculty-delivered) lectures to new interactive online lectures in July 2016.

Post program learner feedback was collected from January 2014 to August 2017. Respondents were asked to rate their confidence level in managing the conditions taught before and after the module, using a 5-point Likert scale (Table 1). The mean difference in confidence-improvement after the modules (old versus interactive) were analysed using Mann-Whitney test.

Table 1: Example of survey question and response options

Before/After the lecture, I was ____confident of managing cases that were taught in the lecture					
Response options	1 not at all	2 a little	3 neutral	4 fairly	5 very

Figure 1. New interactive lectures with (a) theoretical knowledge and (b) case-based scenario and quiz



References

1. Jayakumar N, Brunckhorst O, Dasgupta P, et al. e-Learning in Surgical Education: A Systematic Review. J Surg Educ 2015;72(6):1145-57.
2. Kerfoot BP, Baker H, Jackson TL,, et al. A multi-institutional randomized controlled trial of adjuvant Web-based teaching to medical students. Acad Med 2006;81(3):224-30.

Acknowledgements
We thank the curriculum designers of the new interactive program

Results

For the general paediatric surgery topics, there were 58 responses: 35 (60.3%) VAP and 23 (39.7%) interactive. For the external topics, there were 30 responses: 7 traditional lectures and 23 interactive.

All types of lectures increased the doctor's confidence to manage conditions taught but the difference was greatest for interactive lectures. Median confidence-improvement after the old program's lectures was **1.17 (0.71 to 1.22)** and the new program's lectures was **1.37 (1.30 to 1.43)** respectively ($p<0.05$).

The largest difference between the old and new program lectures was for 2 external topics, Head injury and Pain management.

Table 2: Mean difference between pre and post lecture

	Mean difference between pre and post lecture	
General Paediatric Surgery Topics	VAP, N =35	Interactive, N=23
Fluid and electrolyte	1.22	1.30
On call problems	1.2	1.39
Common Clinic problems	1.17	1.37
TPN	1.34	1.30
External Topics	Traditional N =7	Interactive, N=23
Basics of Paediatric Head Injury	0.57	1.43
EVDs	1.15	1.43
Pain Management in Children	0.71	1.30
Median (interquartile range)	1.17 (0.71 to 1.22)	1.37(1.30 to 1.43)
Mann-Whitney test	P=0.006	
Mean (SD)	1.05 (0.29)	1.36 (0.06)

Conclusion

Traditional lectures, VAP and interactive online lectures were all effective in improving learner's confidence but the interactive lectures had the highest scores. The variable efficacy of different topic modules could be related to the topic itself or the design of the lecture.

We recommend incorporating interactive quizzes and using case-based scenarios to enhance learning when creating online lectures.

D1026

Evaluating the Effectiveness and Sustainability of Near-Peer Simulation-Based Teaching among Junior Residents of a Residency Programme

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BACKGROUND

Near peer teaching has been gaining popularity as it has been shown to improve learner's understanding, targeted at an appropriate level and promotes familiarization. Three second-year internal medicine residents self-initiated this study to evaluate the effectiveness and sustainability of near-peer simulation-based training within a residency program.

SUMMARY OF WORK

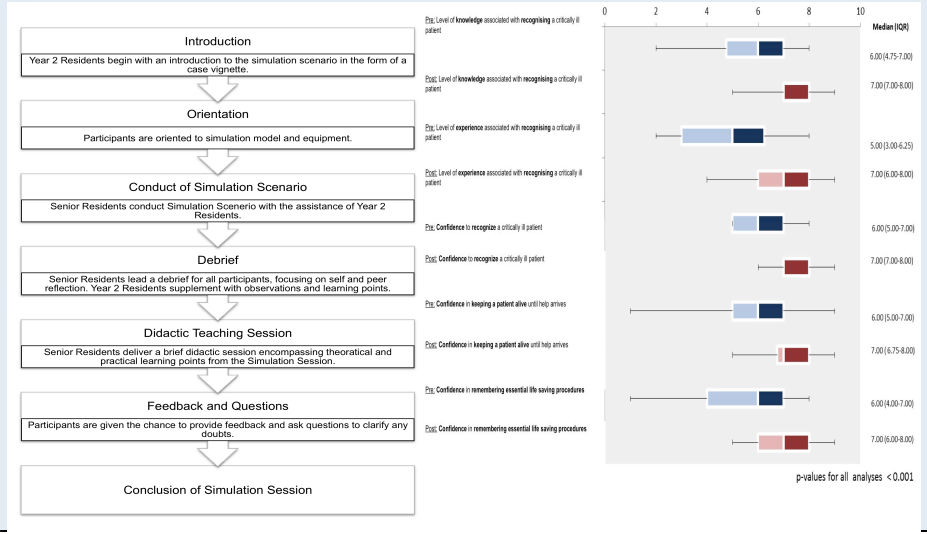
42 first-year residents were recruited. Participants underwent a simulation-based training program conducted over 5 weeks. Each week involved either an emergency or acute clinical scenario. A structured questionnaire was administered prior to and after the course to compare participants' perceived knowledge, experience and confidence in managing the clinical scenarios.

CONCLUSION

Near-peer simulation training was found to be a viable and valuable method of instruction for first-year residents in cultivating knowledge, increasing experience and instilling confidence. It also shows good promise of continuity, with many first-year residents inspired to organize subsequent sessions.

RESULTS

83% of participants agreed/ strongly agreed that the scenarios were realistic. There were improvements of knowledge, experience and confidence after the course. The greatest improvement was experience (Median 7.0, interquartile range 6.0-8.0 vs. Median 5.0, IQR 3.0-6.3). 65% of participants are keen to help with future training.



D1027

Residents' Expectations & Perceptions of Clinical Teaching Activities in National Dental Centre Singapore (NDCS)

Ong M

Department of Restorative Dentistry NDCS, Singapore

Aim:

- To report on residents' (i) expectations and perceptions of clinical teaching activities performed by faculty and (ii) satisfaction with their first year experience in the residency training programmes (RTP).

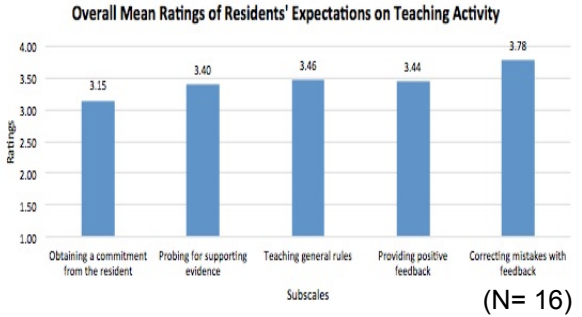
Method:

- AY2015 orientation session – 14-item survey: rate importance placed on faculty engaging in various teaching activities based on the one-minute preceptor in microskills (ETA) (4-point Likert scale).
- Start of AY2016 – 13-item survey: rate faculty in performing the microskills (RFF) (4-point Likert scale).
- Annual programme 8-item evaluation – rate level of agreement with "My overall Residency experience with NDCS is satisfactory" (5-point Likert scale).

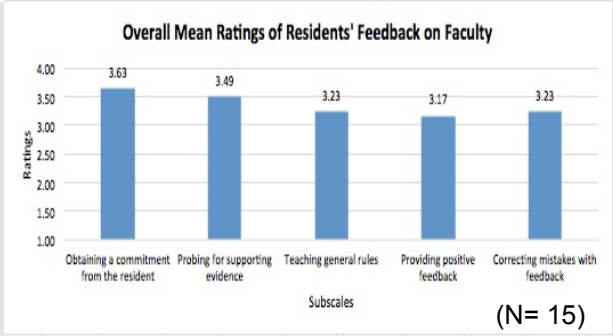
Results:

RTP	Endo	Perio	Prost	Ortho	OMS
Yr 1	2	2	3	6	3

- The overall mean rating for satisfaction with Residency experience with NDCS was 4.46.



(N= 16)



(N= 15)

Conclusion: Based on this small cohort of Year 1 residents, their expectations and perceptions of clinical teaching activities performed by RTP faculty may contribute to their satisfaction with Residency experience. Faculty will continue to be encouraged to employ the 5 microskills in clinical teaching to maximize their teaching moments with residents managing patients in busy outpatient clinics in NDCS.

Acknowledgement: Thanks to staff from the Medical Education Research and Evaluation (MERE) department, Academic Medicine Education Institute (AM.EI) for the help in the analysis.

Presentation No:
D1028

ENHANCING INTEGRATION IN THE FIRST PHASE OF THE MBBS CURRICULUM, FACULTY OF MEDICINE, UNIVERSITY OF COLOMBO THROUGH AN INNOVATIVE MODEL

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Introduction

- Faculty of Medicine, University of Colombo, has adopted an innovative curriculum model for the MBBS programme since year 1995.
- Incremental changes which are introduced periodically have been a consistent feature of this curriculum since then.
- Every year the perception of the graduates regarding current curriculum is obtained. Based on these feedback and experience of our own and extended Faculty, reviews and the systematic comparisons of our curriculum against identified good practices elsewhere are carried out at a central curriculum development and evaluation committee.
- The main subjects are Anatomy, Physiology and Biochemistry organized under the stream 'basic sciences'. In addition, Community Medicine and Behavioural Sciences are organized in two parallel streams.

Justification

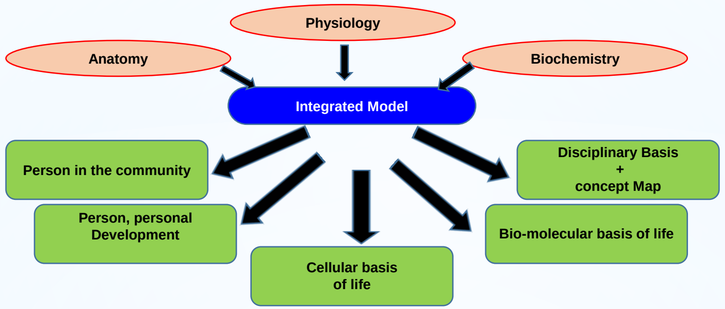
- Despite innovations brought in to the curriculum two decades ago, the first phase of the MBBS curriculum remains largely subject based.
- Fragmented teaching schedules, students' concerns about lack of relevance and a lack of connections between different subjects have all been discussed previously as issues related to this subject based arrangement of the curriculum.
- Therefore, a need to enhance integration between the subjects in the first phase of the curriculum was highlighted during the recent past. An integration between these subjects and clinical sciences is vital to provide students with a meaningful learning experience that facilitate development of contextualized knowledge base relevant for future practice.

Objective

The objective of this study was to develop a model that would enhance integration within the first phase of the curriculum

References

- Curriculum University of Colombo, Faculty of Medicine 2016
- Ronald M Harden, *The integration ladder: a tool for curriculum planning and evaluation*, MEDICAL EDUCATION 2000;34:551±557
- Patricia Thomas, MD, *The Genes to Society Curriculum Reform at Johns Hopkins University School of Medicine*



Five levels of organization

	Anatomy	Physiology	Biochemistry
Foundation			
Person in the community			
Person, personal Development		assessment of neuronal function, abnormal nerve conduction??ANS modulation	
Tissues, organs & inter connections	Female reproductive cycle & ovulation (L-Embryo), Gameto genesis (L), Development of Placenta (L), 1st week of Develop. and Implantation (L), Second week of Development(L) , Third week of Development (L) Coverings & lining membranes (L), Epithelia & Glands I (L), Epithelia & Glands II (L), epithelia & glands (H1), Epithelia & Glands (H2), Connective Tissue (L), Histology of Skin (L), Skin (H), Excitable Tissue -*muscles and nerves* (L1/2/3), Blood vessels and Lymphatics (L)	Homeostasis, Body Fluid Compartments, Fluids & Electrolytes, Nerves, Synapses, ANS & its receptors	
Cellular basis of life	Cell 1 & 2 (L)		Functions of the cell Cytoskeleton
Bio-molecular basis of life	Gene 1 & 2 (L), Structure & functions of chromosomes (L), Chromosome abnormalities (L1/2)	Transport mechanism in the cell (fluid & electrolytes)	pH and buffers Carbohydrates I (L), Carbohydrates II (L) Lipids I (L), Lipids II (L) Proteins I (L), Proteins II (L), Proteins III (L) Nucleic acids (L) DNA Packaging (L) Composition and functions of Bio membranes (L) Transport across membranes (L) Bioenergetics & Oxidative Phosphorylation (L) Vitamins I (L), Vitamins II (L) Enzymes I (L), Enzymes II (L), Enzymes III (L), Enzymes IV (L)
Disciplinary Basis + concept Map (L)	Introduction to Anatomy (L), Anatomical terms & body planes (L), introduction to body cavities (L), Development of body cavities (L) Arrangements of body into systems & regions (L), Introduction to dissections (WR) Answering questions in Anatomy (L)	Physiology Introduction	Biochemistry Introduction

Eight integrated themes

- Foundation
- Locomotor + Neuromuscular
- Lympho reticular + Blood + Haem & Iron
- Thorax + Cardiorespiratory + Cardiac biomarkers
- Abdomen + GIT + Nutrition/ Intermediary metabolism
- Endocrine Histology + Hormones + Metabolism & Hormones
- Pelvis + Renal & Reproductive physiology + Renal calculi
- Head & Neck, Neuroanatomy+ Neurophysiology, Special Senses

Methods

- A series of workshops was conducted with academics involved in the first phase of the curriculum.
- From all three curricular streams, a total of thirty academics involved in the workshops.
- Based on the inputs from Medical Educationists a conceptual model to promote integration was developed.
- Workshop participants were presented with this model and it was refined based on their ideas and suggestions.
- The curriculum content was reorganized within the refined model and a consensus agreement was reached to implement the model subjected to approval by the central curriculum development and evaluation committee.

Results

- The refined phase one curriculum is organized along five cross cutting levels of organization, i.e. Bio molecular basis of life, Cellular basis of life, Tissues, organs and their inter connections, Person and personal development and Person in the community.
- Within this broad organizational framework the content was rearranged along a series of eight integrated themes. They are; foundation, locomotion, blood and lympho-reticular, Cardio-respiratory, gastro-intestinal and nutrition, renal and reproductive, endocrine and metabolism and nerves and special senses.
- Details of integrated teaching/learning strategies and assessment are yet to be finalized.

Conclusion

- In keeping with the need to provide holistic and meaningful learning experience to students, we developed an innovative model for the first phase of the MBBS programme to enable a synchronization of teaching learning activities.
- Importantly a consensus was reached to implement the change and the academic staff involved in the programme had ownership to the innovative model developed to enhance integration.
- After implementation, we will consider to refine the curriculum with high integrated level.

D1029

It's Not Too Early To Start Simulation Training In Premedical BasicScience Education

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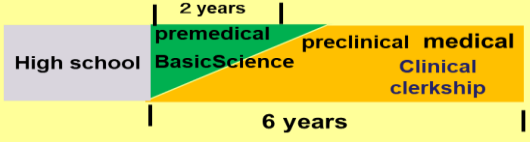
Introduction

In Japan medical school lasts 6 years. The first 2 years concentrate on the sciences basic to medicine.（Fig1)

Medical School Fig1



In recent years, it has become clear that many students injure themselves and others when first using dissecting tools. Also much time was needed to teach about using such tools effectively and efficiently. Thus, in 2016, we introduced simulation training with the aim of improving safer and more effective instrument handling for basic science education. In this qualitative study, we explored the learning outcomes of this early introduction of simulation training for students and faculty

Methodology

In 2016, during anatomy and cell biology courses, we introduced simulation exercises to teach students how to operate dissecting devices, microscopes and other needed tools. These included folding miniature paper cranes with forceps and searching marked beans under a microscope. After implementation, semi-structured interviews were conducted with 11 faculty members who planned and organized classes (6 anatomy and 5 cell biology staff members).

Results

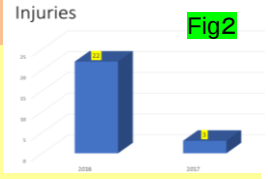


Fig2

Among these outcomes were:

1)Students' motivation for learning increased by becoming aware of their personal challenges (e.g. difficulties related to binocular vision, problems with using forceps smoothly), and then practicing on their own.

2) By carrying out simulation exercises related to instrument handling before the actual animal and cadaver dissections, sessions could be carried out much more smoothly.

Fig3

3) The incidence of injury at dissection decreased significantly:.（Fig2）

4) Groups became more collaborative and thus students were more able to achieve the course objectives.（Fig3) In addition this instructional strategy was useful for bridging the basic science and clinical medicine.

All 11 faculty members were agreeable to continue this preparatory simulation program.

Conclusion

Simulation practice during initial medical training brought about several meaningful learning outcomes for leaners as well as teachers. It also helped integrate the sciences basic to medicine and clinical practice.

D1030

PROMOTING STUDENT ENGAGEMENT IN LARGE GROUP TEACHING: A PRACTITIONER INQUIRY

Ma. Brenda Carbonilla Pancho, MD, MPH, PGDipMedEd, Newcastle University Medicine Malaysia, Malaysia

Introduction

Large group teaching is the most efficient teaching method in undergraduate medical education. However, its many drawbacks include passivity and lesser engagement of students.

A practitioner inquiry was conducted to gain understanding about student engagement in large group teaching. The following were the inquiry questions: 1) What is student engagement? 2) What are the factors that influence student engagement? and 3) What strategies should be used to maximise student engagement?

Methodology

A lecture on learning disabilities was delivered by the author to Year 1 MBBS students of Newcastle University Medicine Malaysia. A focus group discussion involving six students who attended the lecture and a semi-structured interview of a colleague who observed the lecture were then conducted. The interviews were recorded, transcribed and analysed qualitatively using framework analysis. The themes that emerged from the data were categorised based on the inquiry questions and on existing theories on student engagement.

Results

Table 1. Levels of Engagement (based on the **Model of Engagement with Learning**) (Whitton & Moseley, 2014)

Superficial Engagement	
Doing **(Participation)**	Asking and responding to questions, giving comments
Commitment **(Attention)**	Giving focused attention, thinking about answers to questions
Deep Engagement	
Enthrallment **(Captivation)**	Being interested, being able to follow the flow of the lecture
Feeling **(Passion)**	Feeling positive about the topic, enjoying the lecture
Belonging **(Affiliation)**	Establishing connection, being included in the discussion
Being **(Incorporation)**	Understanding the topic, changing perception of self and others

Table 2. Factors that influence student engagement

Content	Level of difficulty, relevance, organization
Process	Interaction, delivery dynamics, feedback
Student	Learning style, motivation, communication skills
Teacher	Communication skills, passion, openness
Context	Size of lecture hall, seating, scheduling

Table 3. Strategies that promote engagement

Active learning (Barkley, 2010)

Cognitive Domain	**Affective Domain**
▪ Highlight and explain important/difficult concepts ▪ Avoid information overload ▪ Link to other topics ▪ Use multimedia	▪ Use stories/narratives ▪ Show passion for the topic ▪ Establish rapport ▪ Use humour

Motivation (based on the **Self-Determination Theory**) (Ryan & Deci, 2000)

Value	Communicate relevance of the topic
Autonomy	Give opportunities for self-directed learning
Competence	Give opportunities for self-assessment
Relatedness	Establish connection with students

Conclusion

Student engagement occurs at different levels and has motivation and active learning as its main elements. Based on the findings, the author plans to improve student engagement in large group teaching by aiming for deeper levels of engagement, enhancing motivation, stimulating both the minds and emotions of students and seeking feedback to determine what students value in teaching sessions.

D1031

STANDARDISATION of MINOR SURGICAL PROCEDURE TEACHING

Foo FY
Yishun Polyclinic, Singapore

Introduction

Teaching of minor surgical procedures (MSP) in Yishun Polyclinic has traditionally been done with the junior doctor being in the “hot seat”. When the new doctor is called up to perform the procedure, a senior doctor will supervise, teach and guide the junior through. There is currently no standardisation of what is being taught. Furthermore, the stress of performing the procedure on a real-life patient can lead to suboptimal learning as well as complications and complaints. As such, there is a true need to standardise Minor Procedure teaching.

An overhaul of MSP teaching begins by tackling our most common procedure – ear syringing.

Methodology

A teaching session was introduced to doctors new to the procedure. This session includes:

1) A short presentation – detailing patient case selection, management options, administrative procedures, possible complications and strategies for recurrence prevention.

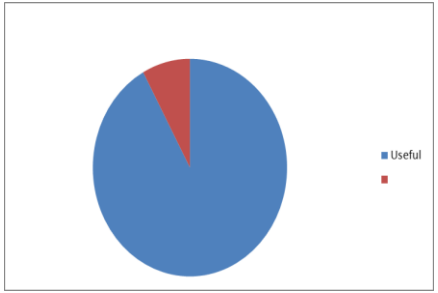
The presentation is kept intentionally brief – full of pictures and with only essential text required for learning.

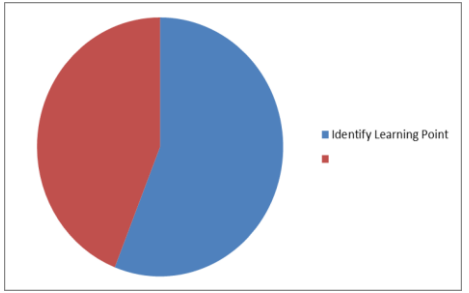
2) Hands-on demonstration and practice – around 50% of the overall teaching time.

3) Questions and answers.

4) Teaching slides are kept online for easy reference.

Results





A post-teaching survey was conducted. The response was overwhelming positive – 92 % of respondents found the session both “useful” and “easily understood”.

56% of respondents were also able to identify at least one learning point from the session.

Conclusion

This first step in changing the way MSP is taught in our busy polyclinic is encouraging. Moving forward, the teaching of other minor surgical procedures must also be standardised. These includes: steroid injections of trigger fingers, removal of skin lumps, and nail avulsions.

D1032

ARE WE TEACHING HIGH VALUE, COST-CONSCIOUS CARE IN OUR CURRICULUM? A SINGAPORE MEDICAL SCHOOL'S PERSPECTIVE

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

INTRODUCTION

- Increasing healthcare expenditure is a cause of concern and research has shown that healthcare intensity are associated with training experience which has lasting effect.
- There is an urgent need to incorporate teaching on cost and value in healthcare in the undergraduate medical education.

AIMS

- To determine the medical students' perceptions of whether high-value, cost-conscious care (HV-CC) is part of the curriculum of Yong Loo Lin School of Medicine, National University of Singapore (NUS).
- To also assess their attitudes, barriers and consequences of HV-CC.

METHODS

- A self-administered survey was distributed to undergraduate medical students, preclinical Phase III (P3) at the start of year 3, and clinical Phase V (P5) towards the end of year 5.
- The survey consists 35 four-point Likert scale questions and 3 other subjective questions.

RESULTS

- 162 (54%) P3 and 122 (40%) P5 students participated in this survey.
- 54% P3 and 55% P5 students had not heard about HV-CC.
- 58% P3 and 54% P5 students claimed there was no such teaching.

ITEM	RESPONSE (%) Strongly Agree / Agree	
	P3	P5
Physicians' practice are key drivers of high healthcare cost	79	84
Physicians play a prominent role in limiting unnecessary tests	100	99
Physicians should contain cost	95	94
Eliminating unnecessary tests will improve safety	87	84
Increased healthcare expenses do not equate to better outcomes	71	74

CONCLUSION

- Medical students have significant insight into HV-CC regardless of actual patient exposure in clinical years.
- Medical education curriculum should be improved to address the gaps, knowledge and attitudes towards HV-CC.

SURFACE MARKING ON STANDARDIZED PATIENTS (SPs) AS A TOOL TO TEACH CLINICALLY RELEVANT ANATOMY TO YEAR-1 MEDICAL STUDENTS.

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NUS National University of Singapore

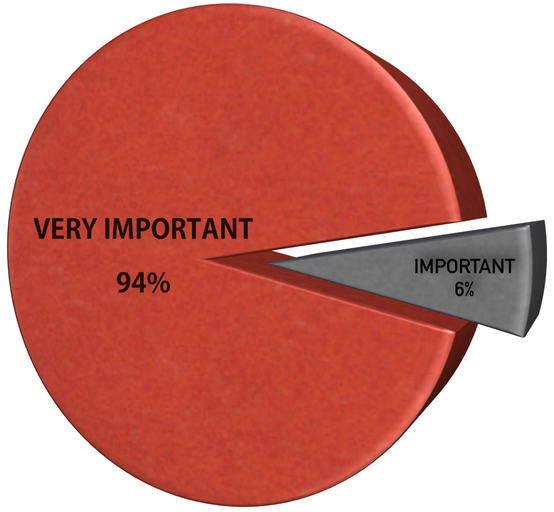
D1033

BACKGROUND: Understanding Gross and Surface Anatomy is one of the cornerstones of medical education. Surface anatomy is essential in enabling students to locate & identify anatomical structures in studying anatomy. Furthermore, a clear understanding of surface anatomy helps medical students appreciate the normal location of organs & diagnose medical conditions with abnormal clinical signs (e.g. Apex Beat, Fundus of Gallbladder, Renal Angle, Tracheal Deviation etc.,) & in treating patients (e.g. Needle Decompression in Tension Pneumothorax). Standardized Patients (SPs) provide medical students with an authentic environment to learn; as well as emulate patients. We studied the effect of SP in medical students' experience of better understanding Anatomy & appreciating the clinical relevance of anatomical structures during clinical examination.

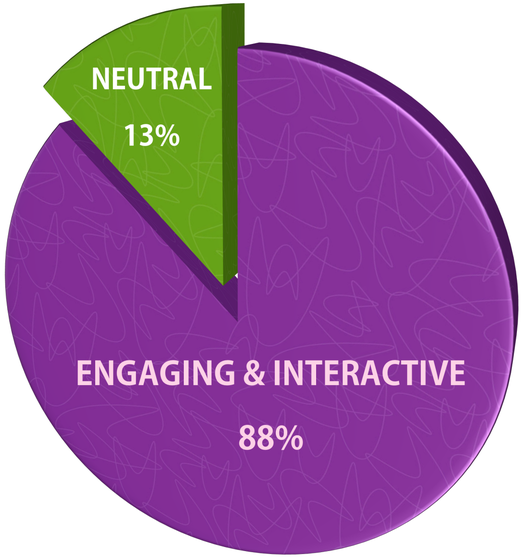
METHODOLOGY: A Pilot-Study consisting of 1st year Undergraduate Medical Students (M-1) from National University of Singapore participated in this study. Students attending Tutorials (small group teaching) were requested to take a survey on week-1(Beginning of Study) & week 7 (End of Study). n=36 (All students): Control group=18 students & Test group=18 students. Students were in their preclinical years undergoing human anatomy education. The students attended 7 Small Group Teaching Sessions, each teaching session lasted 2 hours. SP was usually a student volunteer. The last Anatomy Tutorial involved an Assessment (Quiz) with 60 open ended questions, followed by Museum Session, & a session with SP. After these sessions students were administered with survey questionnaire. The survey was conducted via a paper-based anonymous survey containing questions in a multiple choice or 5-point Likert style format. Anatomy knowledge with introduction of SP was evaluated for improvements made in clinical examination skills.

RESULTS: The Survey Responses was analyzed to understand the effectiveness of small group teaching combined with use of SPs & Museum Session in the learning of Anatomy; with a special reference to learning of Surface Anatomy. The survey results have given us an insight as to how engaging, clinically relevant and effective the small group teaching sessions were for medical students in understanding & applying Anatomy. Students felt (**1**) "Clinical Correlation of Anatomy was useful", (**2**) Using SP had greater impact on cognitive, affective, & psychomotor learning among medical students & (**3**) Anatomy knowledge with introduction of SP showed improvement in their clinical examination skills. Any concerns, which have been flagged, may be overcome by clear communication & empowerment of students. Some students prefer Collaborative Learning style (CLC) session with Higher order thinking questions & allowing CGs (groups) to come up with solutions.While some students prefer Videos & Animations, most students prefer Powerpoint slides before the Tutorials to make annotations.The Anatomy Quiz was well-received & worked as an useful tool to assess their knowledge. In "**Conclusion**" students agree that SPs facilitated Knowledge Application & Retention & Requested additional hands-on sessions with SPs or a session with patients.

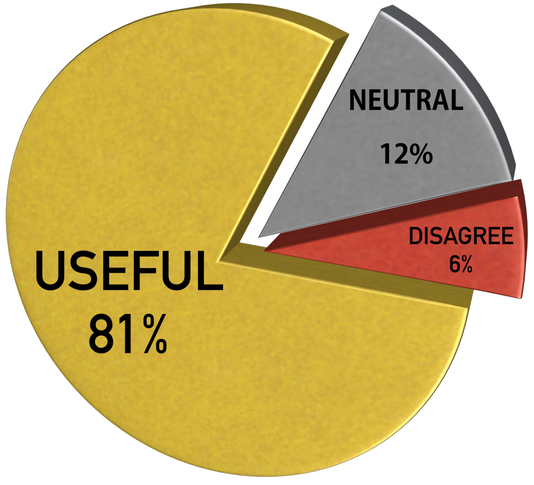
LEARNING ANATOMY & RELEVANCE TO CLINICAL PRACTICE



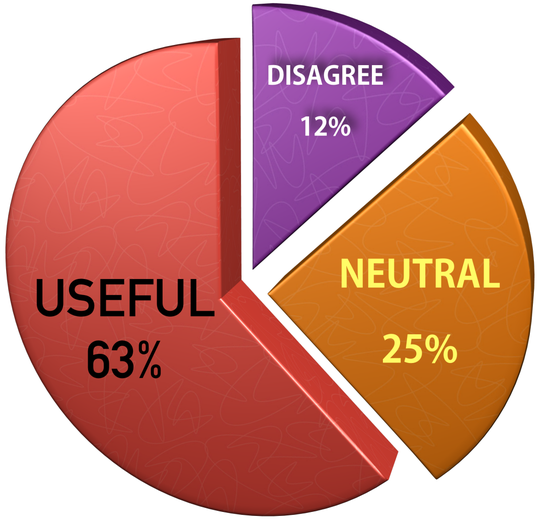
"SMALL GROUP" TEACHING.



ANATOMY MUSEUM SESSION



SURFACE MARKING ON SP



D1034

Introducing an Online Assessment Platform for WBA

Forrest, K.[1], Tepper, C[1]., Morton, R[1]., Smith, O[1]., and Fraser, T[2].
[1]Medical Program, Bond University, Australia, [2] Osler Technologies, Australia

Introduction

Bond University has partnered with Osler Technologies to develop an electronic platform to monitor attendance and compliance and to aggregate student performance data on work-place based assessments (WBA). Student clinical placements are undertaken in over 150 locations with up to 800 clinical supervisors observing, assessing and providing feedback on student performance. Current manual, paper-based processes are inefficient, time-consuming, and prone to error and limited opportunity for timely feedback to students.

Methodology

We have developed a fully mobile-enabled, secure, digital platform available on *any* device from *any* location that will allow a range of clinically relevant assessments to be conducted, at the bedside by clinical supervisors. Clinical supervisors can track student progress and identify those that require additional support, helping to provide the best education experience possible. Faculty have real-time student performance data allowing for earlier interventions than previously possible.

Results

Delivering the project across so many sites and supervisors involved considerable implementation and change management processes. The needs of busy clinicians were taken into account with guest log-ins and multiple modes of assessment accepted by the platform. For instance, the ability to voice record was introduced, enabling students to immediately access assessor feedback. This has resulted in increased communication between students and their assessors and very positive response from the student body.

Conclusion

Digitising the Medical Program processes for monitoring attendance, conducting and collating clinical assessment and delivering feedback at sites of clinical exposure, has created significant efficiencies in the delivery of our program. Feedback indicates that this leads to a vastly improved student experience with real-time, enhanced feedback on assessment performance and timely student remediation which will assist our students to become safe and competent ‘work-ready’ interns.

BOND UNIVERSITY +OSLER

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ESSENTIAL PROCEDURAL SKILLS REQUIRED FOR A BASIC DOCTOR WORKING IN REMOTE LOCATIONS

D1035

Solomon Sathishkumar*, Anand Zachariah*, Kishore Pitchamuthu*, Anna Pulimood* and Jack Boulet**
***Christian Medical College, Vellore India,** **ECFMG, USA

Background: MBBS graduates of Christian Medical College (CMC), Vellore India, after their training, are required to work independently or under supervision in rural mission hospitals. Therefore the training has to equip them for a range of procedural skills and handling of emergencies.

Objectives: To identify essential procedural skills required for working in rural hospitals.
To identify areas of procedural training that needs further strengthening

Methods:
Graduates who had completed internship (6), graduates who had completed at least 1 year of rural service (7), rural hospital teachers (8) and teachers in CMC were administered questionnaires. Focus group discussion was conducted for the graduates. A procedural skill was considered essential if > 75% of teachers indicated so. Procedures that need further strengthening were identified if ≥ 50% graduates indicated so.

Results:
Number of essential procedural skills specialty-wise identified: *Medicine 17, Surgery 17, Paediatrics 8, Obstetrics and Gynaecology 9, Orthopaedics 4, Anaesthesia 7, ENT 6, Ophthalmology 1.*

Procedural skills that require further strengthening*: Medical:* pleural aspiration, nasogastric tube placement, chest tube and intercostal drainage, basic ultrasound for Deep Vein Thrombosis and pleural effusion, central venous access, airway management, basics of handling a ventilator, performing an Electrocardiogram. *Surgical:* lymph node biopsy, excision of subcutaneous swelling, measurement of central venous pressure, proctoscopy, rectal enema. *Pediatric:* neonatal assessment and resuscitation, paediatric lumbar puncture, paediatric basic life support, intraosseous cannulation for infusion. *Obstetric and Gynaecology:* Pap smear, Intra-Uterine Contraceptive Device insertion, tubectomy, forceps and vacuum delivery, dilatation & curettage, caesarian section. *Orthopaedic:* basic casting, basic splinting, basic fracture and dislocation management. *Anaesthesia:* basic and advanced life support, airway skills including bag mask ventilation, intubation, acute trauma care, spinal anaesthesia, regional and Ketamine anaesthesia. *ENT:* syringing and wax removal, removal of foreign body, packing of nose for epistaxis, Tracheostomy, Cricothyrotomy. *Ophthalmology*: direct ophthalmoscopy.

Conclusion: This needs-assessment will be used to develop a skills curriculum to prepare doctors who can work in rural areas. The skills list is relevant to all medical colleges in India and is useful in determining the requirements for MBBS training.

D1036

Possible factors associated with dropout thoughts among students at a Government Medical School

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[1]Medical Education, King Saud University, Saudi Arabia, [2] College of Medicine, King Saud University, Saudi Arabia

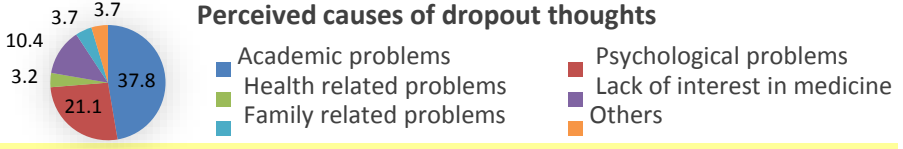
Introduction

Although College of Medicine at King Saud University (KSU) is one of the oldest medical schools in the Middle East, and has very restricted and high-quality students' selection criteria. Some medical students still think of dropping out. However, We found no local published studies looking deeply into this phenomenon. Therefore, this study was conducted to measure the prevalence and the possible factors associated significantly with the potential thoughts of dropping out among medical students, during the academic year 2016-2017.

Methodology

A cross-sectional study was conducted among KSU medical students from all academic levels, during the academic year 2016-2017. A self-administered questionnaire was constructed, validated and then distributed electronically via e-mail to all medical students (approximately 1500 students). Only 587 students returned completed questionnaires, for an overall response rate of 39.13%. the statistical analysis was performed using Statistical Package for the Social Sciences (SPSS) version 22 software. (SPSS Inc., Chicago, IL, USA).

Results



More than half (51.4%) of KSU medical students have thought of withdrawal at least once. Facing academic difficulties was the commonest reason behind thinking of dropping out. Majority of students with lower GPA mean have thought of withdrawal (p=0.042). The odds of governmental high school graduates contemplated dropout is less by 34% than those from privates (OR=0.66, P=0.012). On the other hand, studying according to a plan and prioritizing tasks in managing time were common characteristics of students who have not had thoughts of withdrawal. Given the p-values 0.001 and 0.000, respectively.

Conclusion

Dropout thoughts prevalence among KSU medical students is very high. Academic struggling is accused as the number one reason behind these attacks of dropout thoughts. Medical Education department at KSU should implement some sort of academic guidance programs. Addressing symptomatic students to help them tackle precipitants of withdrawal thoughts, before actually dropping out.

D1037

Five-Year Development of a Pharmacy Residency PGY1 Programme at an Academic Medical Centre-University Hospital In Singapore

Lim SW[1], Wu TS[1]

[1]Pharmacy Department, National University Hospital, National University Health System, Singapore

Introduction

The National University Hospital (NUH) Pharmacy Residency Post-graduate Year 1 (PGY1) Programme was developed to provide a robust clinical pharmacy and pharmacy practice skills training to groom pharmacists to serve patients in the evermore complex medical landscape. They will also learn to demonstrate professional leadership and develop life-long learning skills that will lead to greater career satisfaction.

Methodology

Annual curriculum meetings are held to make improvements in the existing programme and to review feedback from residents. Selection and recruitment of eligible preceptors are done to increase its training capacity. Efforts are put into developing quality of training by preceptors. Residents upon completion of programme are tracked to evaluate whether they fulfill the purpose of the residency.

Results

Outcome of residents

75% and 33% of graduated residents pursued a post-graduate degree in clinical pharmacy and achieved US Board Certification in pharmacotherapy respectively. All are involved in teaching and/or preceptoring work.

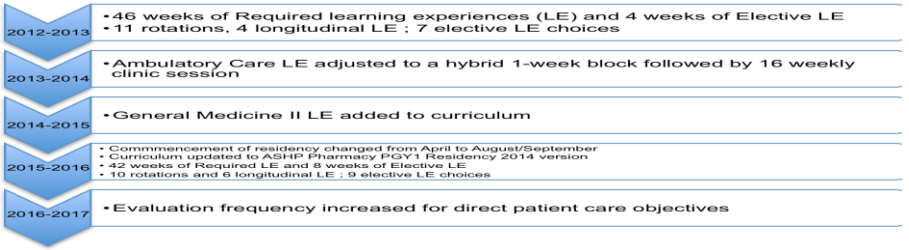


Figure 1 Curriculum changes

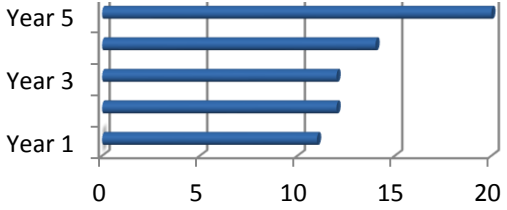


Figure 2 No. of faculty members per year

Conclusion

NUH Pharmacy Residency PGY1 programme meets its purpose of providing applicable and quality pharmacy training to its residents.

It continues to seek out new ways to improve its curriculum through annual reviews to ensure its relevance in providing valuable pharmacy post-graduate training to our pharmacists. It also endeavours to develop its faculty members by equipping them with the appropriate teaching skill sets.

D1038

Skill day：Enhance the accuracy of operating medical instrument of the ICU nurse by authorized mechanism.

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[1] SICU Head Nurse, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Taiwan

[2]Supervisor, R.N., M.S.N., Kaohsiung Medical University Hospital, Kaohsiung Medical University , Taiwan

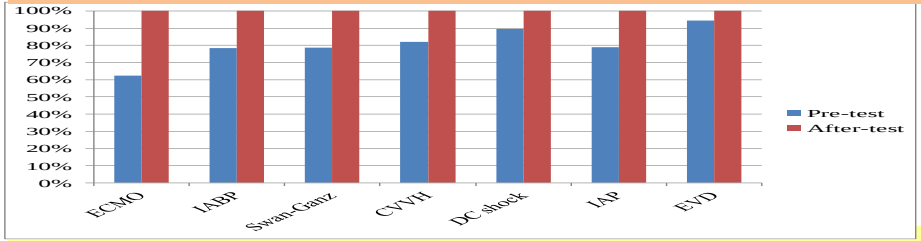
Introduction

The condition of critical patients progress rapidly. We must use different medical modalities and invasive devices for treatment and evaluation. The education of instrumental operation depend on the manual and by the word-of-mouth between staffs, which result in learning one-sided and different ways.

Methodology

There are seven common medical instruments in our unit. The senior seed teacher from different units were in charge of development the operation video and checking list. Then to upload the teaching material to digital learning platform. There were several seed members from each unit accomplished e-learning class and certificate by OSCE way in skill day. They came back to their unit and certificate each staff.

Results



The staffs were allowed to care this kind of patient after certification. Those who did not have the certification may care such patient under the instruction of the certificated staff. The accuracy increased from 80.6% to 100% after this project. The project is beneficial.

Conclusion

We have integrated education resources by the e-learning platform and established a authenticating mechanism to achieve consistency, standardization, and high-quality nursing care. However, the technology progressed rapidly. We updated the teaching materials and authenticated the staff in ICU every year. The staff can provide a secure nursing care environment by the promotion of Skill day.

D1039

Multiple Mini Interviews for Undergraduate Allied Health Programmes in Singapore

Meredith Yeung[1], Lee A[1]

[1]Health and Social Sciences Cluster, Singapore Institute of Technology, Singapore

Background and Aims

Admission selection in healthcare professions should share the same quality assurance processes as assessment. However, the interview processes of the allied health programmes around the world are largely varied, imperfect and a high-stakes process for all stakeholders involved; yet, the outcomes of the selection process may profoundly affect patient care during training and beyond. Ideally, the interview process should be objective, valid, reliable, and allow the candidates the opportunity to represent themselves to their best potential. The Undergraduate Allied Health Programmes in Singapore Institute of Technology (SIT) adopted the Multiple Mini Interview (MMI) created by Eva et al. [1] since the inaugural admission exercise in 2015. With the intention to recruit both academically able and those with the potential to develop health professional qualities: care, communication, passion, inquisitive mind-set and the sound ability for ethical reasoning. This poster reports the development of MMI format into the admission process.

Methods

The MMI model has been implemented at SIT. Introductory and calibration workshops were attended by key stakeholders (academics, Heads of clinical departments, senior clinicians, practice educators and private practitioners) who would serve as interviewers. MMI questions and scoring mechanisms were scrutinised, clarified and calibrated using mock interviews. Modifications were made to scenarios based on peer review and feedback. An evaluation were obtained from interviewers. There were two parts to the evaluation form, a 12-structured statements and stakeholders were required to rate on a 7-point Likert Scale (1-strongly disagree to 7-strongly agree), and an open commentary section. Descriptive statistics were used to analyse the quantitative portion of the survey, while content analysis and thematic description was applied to the qualitative data.

Results

Data was collected by 79 interviewers. Interviewers agreed the MMI is a fair process for applicants (83.5%); a good way of assessing interest and potential as healthcare professionals (78.5%), and it tested more aspects of a candidate than traditional interviews (72%). They concluded the MMI format was structured, objective, rigorous and unbiased and assessed a valid range of competencies (67%). Some comments:

"Pick the right candidates (with approach) is an important starting point.
"MMI is a more objective way of selection interview."
"This is an assessment of candidate's ability to think on the spot, within the given time, provided a good gauge of ability to analyse and can prevent rehearsed responses."

Some of the challenges were: to ensure the interviewers' consistency and warrant questions are designed similarly required attention. MMI is time- and labour-intensive. Interviewer feedback suggested some scenarios may be more challenging than others for candidates depending on their age, background and life experiences.

Conclusion

The introduction of the MMI format has been a positive experience. Refining of the administrative process to decrease the administrative workload and having a bigger depository of question bank can offer greater sensitivity and reliability of the admission interview. Ongoing evaluation and monitoring of professional suitability of recruited students will be undertaken. The same MMI process with refinement will be used for entry in 2018.

The authors wish to acknowledge Dr Benjamin Soon for the inception of MMI.

Reference:
Eva, K.W., et al., An admissions OSCE: the multiple mini-interview. Med Educ, 2004. 38(3): p. 314-26.

D1040

USE OF QUIZUP TRIVIA GAME APP FOR QUIZZING

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

Introduction

In contrast to gamification by use of educational platforms for quizzing, educification of the QuizUp trivia game and social network platform used by students for entertainment may eliminate the extraneous cognitive load[1,2] of learning a new platform and enhance engagement. QuizUp allows for repeated practice of multiple-choice question stimulus-response pairings, which is expected to promoting learning according to Skinner's operant conditioning learning theory[3]. The repeated isolated practice of key component knowledge to achieve fluency and automaticity facilitates the development of mastery[4-7]. QuizUp may help to promote fluency and automaticity as it scores not only accuracy but also speed.

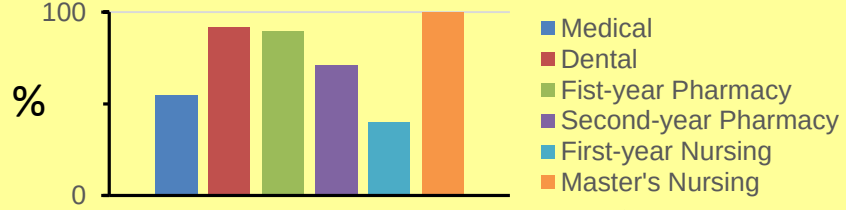
1. Van Merrienboer, J. & Sweller, J. *Medical Education* **44**, 85-93 (2010); 2. Young, J.Q., Van Merrienboer, J., Durning, S. & Cate, O.T. *Medical Teacher* **36**, 371-384 (2014); 3.Skinner, B.F. *Harvard Educational Review* **24**, 86-97 (1954); 4. Salden, R.J.C.M., Pass, F. & van Merrienboer, J.J.G. *Computers in Human Behavior* **22**, 321-333 (2006); 5. White, B.Y. & Frederickson, J.R. *Artificial Intelligence* **42**, 99-157 (1990); 6. Wightman, D.C. & Lintern, G. *Human Factors* **27**, 267-283 (1985); 7. Ambrose, S.A., Bridges, M.W., DiPietro, M., Lovett, M.C. & Norman, M.K. Jossey-Bass, San Francisco, CA, (2010).

Methodology

Quizzes were provided on QuizUp for 299 second-year medical, 54 second-year dental, 185 first-year pharmacy, 197 second-year pharmacy, 125 first-year nursing, and 41 Master's nursing students. Quizzes covered 13 topic areas, and each contained a bank of 35 to 100 best answer multiple-choice questions. Participation was estimated from numbers of new followers registering after the announcement of the quizzes to each cohort. Qualitative comments in anonymous end-of-semester student feedback were collated.

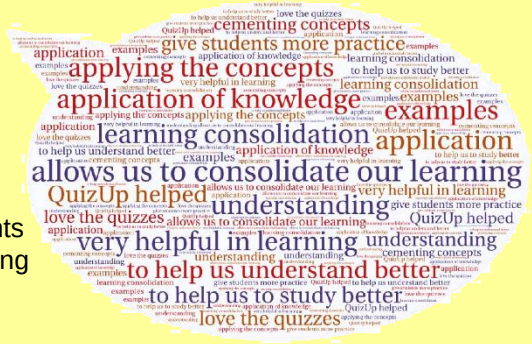
Results

Estimated participation rates:



Qualitative feedback:

- consolidation of learning
- application of knowledge
- enhances understanding
- promotes further learning
- enables interprofessional interaction between students from different classes playing the app with each other



Conclusion

Presentation of multiple-choice quizzes on the QuizUp platform was well-received by students. Students believed that the quizzes helped them to consolidate and apply their learning. Further research is required to confirm whether the QuizUp quizzes enhance learning outcomes.

D1041

Improved Reliability of Summative Portfolio Assessment for Family Medicine Certification by Japan Primary Care Association (JPCA)

Hirotaka Onishi, International Research Center for Medical Education, The University of Tokyo, Japan
Ryo Takayanagi, Gumma Family Medicine Center, Maebashi Kyoritsu Clinic
Yasuki Fujinuma, Centre for Family Medicine Development, Japanese Health and Welfare Co-operative Federation

BACKGROUND

- JPCA's Family Medicine Board exam consists of (1) written test (MCQs), (2) clinical skill assessment, and (3) portfolio assessment.
- All the candidates must submit 18 items of portfolio after 3-year training. Rublic for all 18 areas was disclosed in 2016: (1) Biophychosocial model, (2) Family-oriented care, (3) Integrated care, (4) Behavioural change, (5) Community health promotion, (6) EBM/communication, (7) Professionalism/life-long learning, (8) Teamwork/network, (9) Education, (10) Research, (11) Health promotion and prevention of a patient, (12) Pediatrics, (13) Gerontology, (14) End-of-life care, (15) Women's/Men's health, (16) Rehabilitation, (17) Mental health, (18) Emergency care
- This study aims to evaluate the effect of the rublic on reliability.

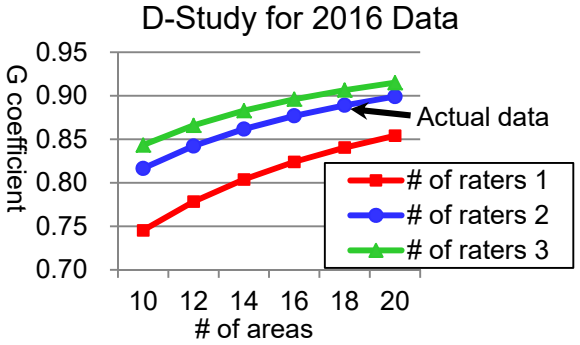
METHODS

- Scores for 2014-2016 were analyzed.
- Each report was marked by two independent raters.
- Generalizability (G) study was conducted for person (*p*), item (*i*) and rater (nested by item; *r:i*) each year.

RESULTS

	EVC%		
	2014	2015	2016
p	14.7%	17.5%	19.8%
i	8.5%	9.0%	6.0%
r:i	2.9%	2.4%	6.3%
pi	25.9%	21.8%	21.4%
p(r:i)	48.0%	49.2%	46.4%

	G Coefficients		
	2014	2015	2016
	0.842	0.872	0.889



DISCUSSION

- Reliability of portfolio assessment was sufficient for summative decision making, and improved from 2014 to 2016.
- Two raters for each report are sufficient.
- The reason why rater's variance is high remains unclear.

Poster ID: D1042

MORNING ROUNDS: A SIMULATION EXPERIENCE FOR SECOND YEAR MEDICAL STUDENTS TO PROMOTE CLINICAL REASONING

Authors: **Plochocki, G**, Boese, T
Behavioral and Clinical Medicine Department, American University of the Caribbean, Sint Maarten

BACKGROUND

Participants:

Second year medical students in groups of 5 - 6

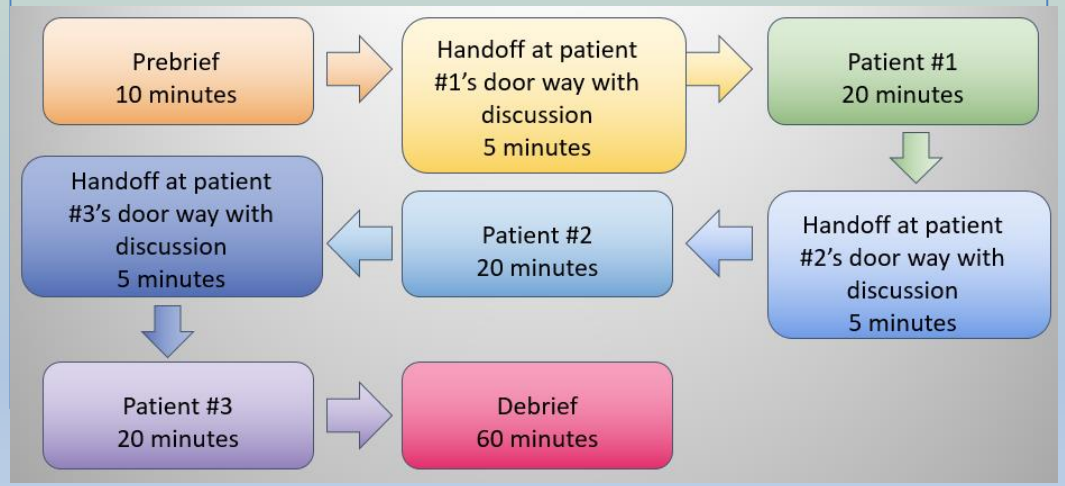
Scenario:

Three patients admitted to the Emergency Department, each with an acute presentation of dyspnea (In the second simulation, each patient presents with chest pain)

Objectives:

1. Form differential diagnosis for each patient.
2. Demonstrate teamwork, communication, and resuscitation skills

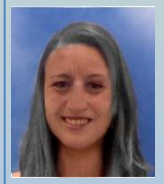
LOGISTICS



THE PATIENTS

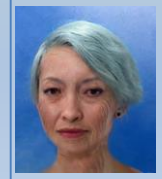
CC:
"I have had difficulty catching my breath for the past 2- 3 days"

HPI:
Cough
Yellow phlegm
PMI: COPD



CC:
"I've been out of breath since I woke up this morning"

HPI:
Frothy phlegm
PMI: Asthma



CC:
"I haven't been able to catch my breath since this morning"

HPI:
Sharp pain on the left side around the nipple when she takes a deep breath
Long plane ride 2 days ago
Pain in calf
PMI: COPD

DISCUSSION

This simulation activity is designed for the deliberate practice of forming differential diagnosis by comparing and contrasting finding in patients that present with the same symptoms. This format promotes acquisition of clinical reasoning skills to gather and synthesize information in order to recognize patterns in the presenting patient.

TAKE HOME MESSAGE

The sequential presentation of patients with the same acute presentation is an effective strategy to enhance acquisition of critical thinking skills in second year medical students.

American University of the Caribbean
School of Medicine
est. 1978

D1043

THE TEACHER'S PERSPECTIVES ON THEIR ROLES AS A MEDICAL EDUCATOR AND BLENDED LEARNING

Inthrani Raja Indran[1], Tang Ching Lau[2], Shing Chuan Hooi[3], Dinesh Kumar Srinivasan[4]

[1]Pharmacology, [2]Medicine, [3]Physiology, [4]Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Introduction

Though blended learning (BL) is becoming a distinct feature of education, implementation can be impeded by a lack of effective plans and understanding of the stakeholders' needs. This study hopes to gain a better understanding of teachers' perspectives on their roles as a medical educator, teaching and learning strategies and BL.

Methodology

The study was conducted via a web-based anonymous survey containing closed ended questions primarily in a multiple choice or 5-point Likert style format. The survey web link was disseminated via email to 202 teachers teaching Phase I/II medical students at NUS-SoM. The survey site received 78 unique participant visits and 28 of those who visited the survey site completed the survey.

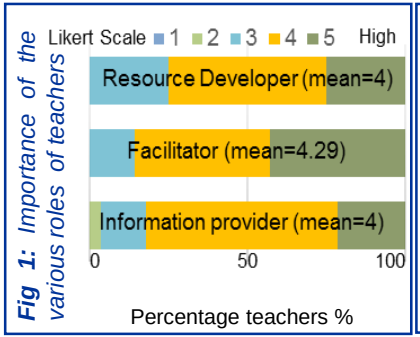


Fig 1: *Importance of the various roles of teachers*

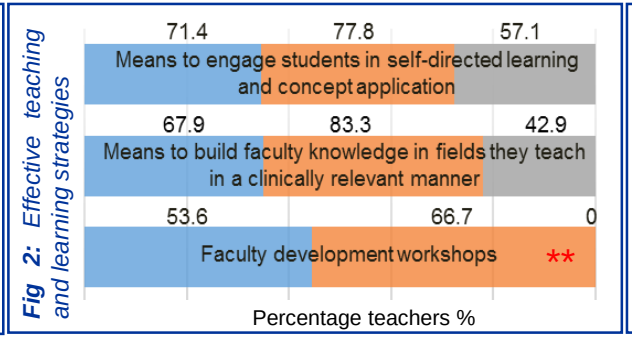


Fig 2: *Effective teaching and learning strategies*

Table 1: *BL awareness*

I understand and have experience implementing BL	60.7%
I know how BL is implemented but have not tried	17.9%
I have never heard /heard but unsure how BL is implemented	17.8%

Percentage teachers %

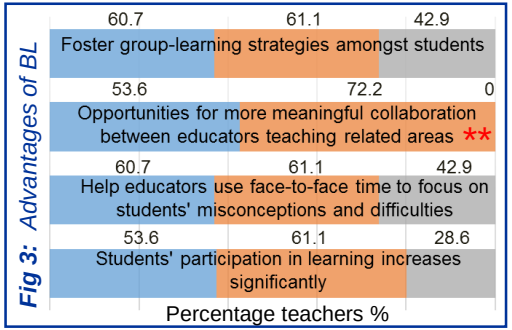


Fig 3: *Advantages of BL*

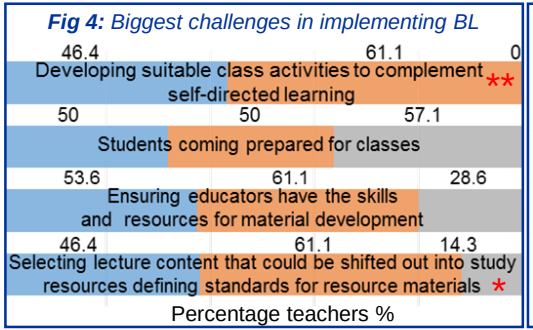


Fig 4: *Biggest challenges in implementing BL*

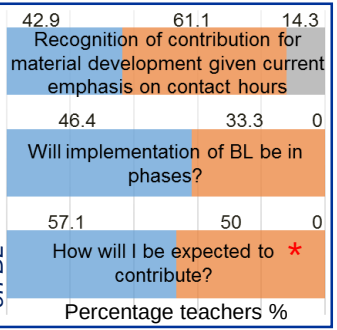


Fig 5: *Teachers' concerns on BL*

** p<0.005, * p<0.05 teachers on educator vs research track

Legends

- All teachers (n=28)
- Educator Track (n= 18)
- Research Track (n=7)

Conclusion

The key concerns, which have been flagged, can be overcome with clear communication and pilot prototyping of BL contextualised to NUSMed needs, educators empowerment with new capabilities and time to develop learning resources#, and measurement of involvement and outcomes of BL to recognize the teachers' efforts#. It is also important to note that teachers from different tracks may have significantly different needs and concerns, which needs to be reflected upon.

Key forms of organisational support that teachers would like to have

ID D1044

The Learning Environment and its Application to Mentoring

Ong ZX[1], Simone Quek[1], Krishna LKR[1,2,3,4], Toh YP[5]

[1]Yong Loo Lin School of Medicine, NUS, Singapore, [2]National Cancer Centre, Singapore,
[3]Duke-NUS Medical School, Singapore, [4]Centre for Biomedical Ethics, Singapore, [5]National University Hospital, Singapore,

Background & Aims

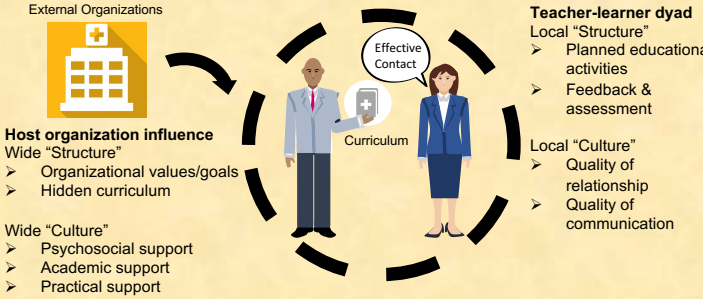
- Mentoring is pivotal in medical education.
- Significant gaps remain in understanding its nature and development, especially in Mentoring Environments (ME).
- Extrapolating MEs as a subtype of Learning Environments (LE), we can gain insight into MEs.

Methodology

- 58 papers published between 2000 & 2015 relating to clinical learning & medical training were identified from PubMed, Scopus, ERIC & Cochrane Library databases.
- Open coding & thematic analysis were then carried out.

Results & Discussion

- 2 main themes were identified, “structure” & “culture”, each with subthemes of “local” & “wide” factors.



- LEs and MEs share a **complex, evolving, context-specific, learner/teacher/relationship/organization -dependent nature** that justifies extrapolation of lessons learnt within the LE to the ME’s context.
- Both “local” and “wide” factors in structure or culture can influence the other, with variable interactions, suggesting a **non-linear relationship that is entwined and co-evolving.**

Conclusion

- Changing perspectives in conceptualizing LEs & MEs lead to significant implications on designing mentoring programs & research.
- Systems thinking integrates understanding of ME as potentially a **complex adaptive system**.
- Design processes require **careful consideration** of the healthcare system, clinical specialty and host organization, in addition to mentor and mentee factors.
- ME studies should be **longitudinal with a multidimensional approach to all parties involved.**
- **Ethnographic studies** to study culture within the mentoring dyad, the organization & the wider system.

D1045

A NARRATIVE REVIEW OF MENTORING PROGRAMS IN FAMILY MEDICINE

Charmaine Low[1], Toh Ying Li[2], Toh Ying Pin[3], Lalit Krishna[1,4,5,6]

[1]Yong Loo Lin School of Medicine, NUS, Singapore [2]Monash School of Medicine, Australia [3]National University Hospital, Singapore [4]Duke-NUS Graduate Medical School, Singapore [5]Centre of Biomedical Ethics, NUS [6]Division of Palliative Medicine, National Cancer Centre, Singapore

Introduction

- Family physicians need to understand the healthcare system and their community well
- Mentoring results in personal and professional development of family medicine trainees
- Conflation with existing practices threaten successful employ of mentoring in training programs
- This paper identifies elements contributing to effective mentoring in family medicine

Methodology

- Literature search on mentoring of junior doctor or medical student by Family Medicine mentor between 1st Jan 2000 and 31st Dec 2015
- Exclusion of non-novice mentoring and mentoring in other specialties

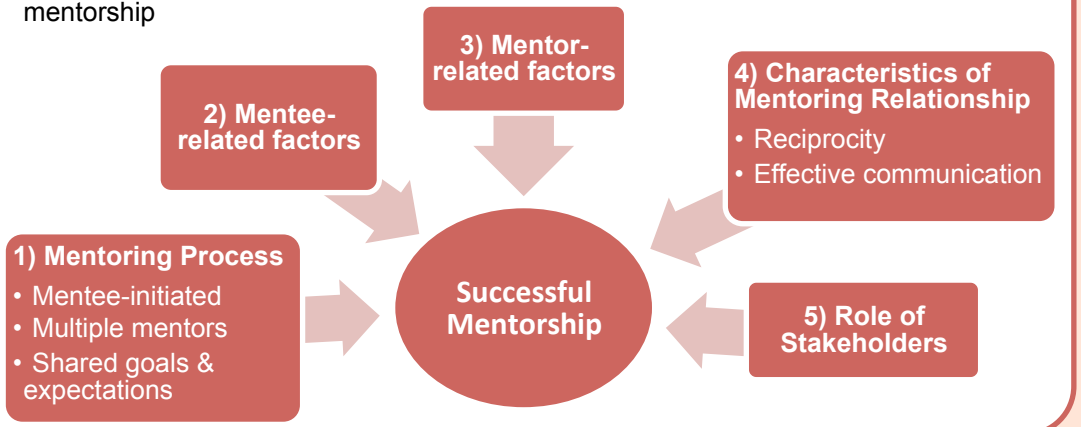
1973 abstracts retrieved

9 articles selected

Thematic analysis on "detail-rich codes" related to mentoring process

Results

- Thematic analysis identified 5 categories of themes which contributed to successful mentorship



Conclusion

- Successful mentoring programs depend on effective mentoring relationships and environments that facilitate mentoring process
- Further context-specific study is needed for sustainable mentoring programs

D1046

A Successful Introduction of a Variety of Technologies Purposefully Prepares Faculty to Teach Good Patient care

Batty, H[1,2], Ghavam-Rassoul, A[1,3], Peranson J[1,3].

[1]Department of Family and Community Medicine, University of Toronto, [2]Women's College Hospital, [3]St. Michael's Hospital, Canada

Our curriculum design map demonstrates how **specific technologies and educational strategies** lead to outcomes of importance for clinical teachers.

Use by Clinical Educator	Use in our Fac Dev Program	Tool / App	Health Care Provider Use
Teaching students at a distant location	Distance learning by distributed teams and remote participants	Communication tools Skype, Google Hangouts, Adobe Connect	Telemedicine Remote patients groups Participation in CME
Student competency portfolio Academic promotion documentation Share opinions & practices	Portfolio to compile & organize scholarly narrative of experiences & opinions	Blog Wordpress Google Site	Recertification Patient directed health care blogs
Communicate and contribute to a community of educators Role model professional online communication and presenc	Build a community of educators Role model professional online communication	Social Media & Messaging Apps Facebook, Twitter, What's App	Participate in a community of healthcare providers, within limitations of privacy and confidentiality
Collaborating with colleagues at a distance	Collaborating with colleagues at a distance	Cloud storage and collaboration tools Dropbox, Googledocs	Collaborating with colleagues at a distance
Organization of course materials and homework administration tasks	Organize course materials Program administration	Learning management system (Blackboard)	Increased IT literacy Enables EHR &other institutional software use
Value asynchronous communication, collaboratio & learning from each other	Asynchronous communication, collaboration & learning	Asynchronous communication tools Discussion board	Patient support groups
Organize resources and manage citations for teachir	Organize resources and manage citations	Reference manager software	Organize resources for health care delivery

These outcomes include participants' **technological fluency and confidence for creating both** interactive student-centred learning and patient-centred healthcare.

*The **INTAPT (Interprofessional Applied Practical Teaching)** course is a long running foundation course for several Health Professions Teacher Education Programs (certificate, fellowship and Master's). Our program participants described many impactful characteristics of this faculty development program in a reflective exercise.*

D1047

An Innovative Micro-modules Platform for Flipped Classrooms in Medical Education:

THE ELEARNING CLINICAL SKILLS (EC SKILLS) CHANNEL

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e-CLINICAL SKILLS CHANNEL

- Aims to assist in the learning of clinical Anatomy as well as other clinical skills among medical students in the bridging course
- Compatible with all types of smartphone and tablet device
- Composed of illustrations with explanations, animations, and videos

KEY FEATURES

- Notes for Clinical anatomy
- Micro modules for clinical Skills
- Videos for surgical procedures
- Case Study Scenarios
- Self-reflection quizzes

BACKGROUND

The transition of pre-clinical to clinical education requires changing learning approach, from the memorization of facts to the application of knowledge. To facilitate adaption to new learning style, our team has developed an innovative e-learning platform called the eC Skills Channel and employed in the teaching for surgery specialists in combination with conventional teaching methods in a blended learning approach.

COMPARISON OF TEACHING APPROACH

Passive Learning (Authoritarian Approach)

Information is presented passively using lecture notes,
Limited time is allowed for questioning, clarification or discussion
No opportunity for application of higher-level cognitive skills because it is not requires

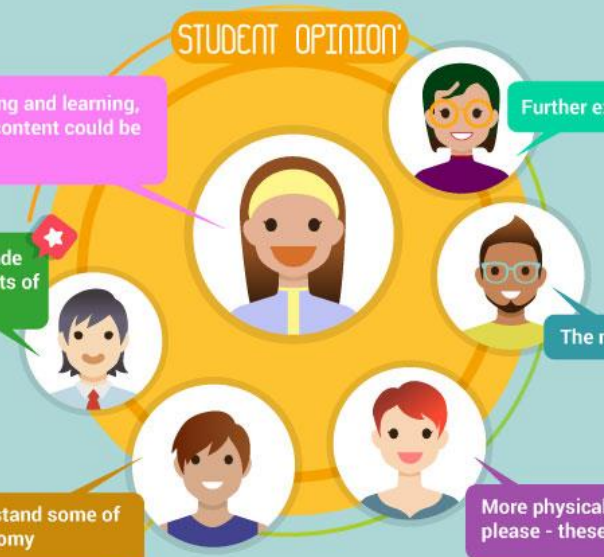
▶ Outcome: Attain a superficial understanding of topic

Active Learning (i.e Blended Learning)

Utilize technology as instrument in complementary to didactic lectures
Engage student in the discussion
Empower student capacity to take an initiative in the learning

▶ Outcome: Attain a deep, conceptual understanding

STUDENT OPINION



- Good for enhancing understanding and learning, would be great if more detailed content could be included.
- Further explanation of answers is need for quiz.
- Concise descriptions and well-made videos are the most attractive parts of the whole website!
- The menu interface is not user-friendly .
- This helps me a lot to understand some of the confusing points of anatomy
- More physical examination videos in Cantonese please - these are very helpful!

The Way Forward: The development of the eC Skills Channel is promising to take a leading role in medical education and support student's learning requirements

D1048

PREPARING SENIOR RESIDENTS TO BE FACULTY

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Introduction

Besides being clinical care providers, faculty are expected to be teachers, researchers and administrators. A good medical teacher is able to facilitate, role model, mentor, provide information, plan and develop education resources, and assess students effectively. This involves developing a different skillset and mindset that current residency training programs do not emphasize. The SingHealth Anaesthesiology Residency Program (SHARP) senior residency education series aims to introduce residents to the concept of faculty development and facilitate a smoother transition into their roles as faculty and anaesthesiology specialists.

Methodology

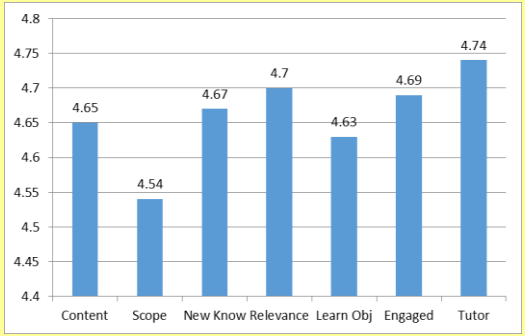
Based on a needs analysis, a structured teaching program encompassing 16 topics organized into 3 modules and delivered as 17 interactive teaching sessions was developed by SHARP faculty (Table 1). The 17 teaching sessions are spread throughout the 2 years of senior residency over 3 training sites. 6 of these topics are hosted by SHARP faculty on the national senior residency anaesthesiology teaching platform ETHER (Empowerment Through Holistic Education in Residency) which is conducted monthly by the different anaesthetic departments of Singapore on a rotational basis. Each teaching session is evaluated by attendees who are also asked what they learnt and how the teaching session can be improved. The first run started in March 2017 and to date 13 topics have been completed.

Table 1: Modules and topics

Module	Topic	Site	Learning platform
Specialists in training	How to manage a poor patient outcome? How to manage a complaint?	KKH	Small group teaching
	How to manage high risk patients: principles of risk management and counselling	SGH/ ETHER	Large group teaching
	Wellness in anesthetic career Monitoring and managing burnout	SGH/ ETHER	Large group teaching
	Equipment procurement	CGH/ ETHER	Large group teaching
	Planning a new service	SGH/ ETHER	Large group teaching
	Administrative issues	KKH	Small group teaching
	Interesting clinical scenarios	KKH	Small group teaching
Medical teachers in training	Small group teaching	CGH	Small group teaching
	Principles of standard setting and assessment	KKH	Small group teaching
	Work-place based assessments – how to assess your juniors?	KKH/ ETHER	Large group teaching/ workshop style
	Work-based Teaching	KKH	Small group teaching
	Supervision, demands, challenging scenarios, and management strategies	KKH	Small group teaching
	How to be a good mentor/ mentoring strategies	KKH	Small group teaching
	Essentials of Feedback 1 and 2	KKH	Small group teaching
	Helping residents in difficulty	SGH	Small group teaching
Patient advocates and quality manager in training	Quality in anaesthesia	KKH	Small group teaching
	Clinical governance	SGH/ ETHER	Large group teaching

Results

Graph 1: average evaluation scores



Q1	The content was appropriate for my current level of understanding
Q2	The scope covered was adequate for the time allocated
Q3	I have gained new knowledge from today's session
Q4	I can see the relevance of this to my future work
Q5	The learning objectives were clear
Q6	I was engaged in learning during this session
Q7	The tutor communicated effectively

Score Legend:	
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Conclusion

We have developed the SHARP senior residency education series/ faculty-preparedness program by incorporating it into existing education platforms. To date, it has been well received by senior residents who can see the relevance to their future work as faculty.

Having a program- specific faculty development program enables the discussion and awareness of program-specific issues that faculty face. It also allows the transmission of information regarding resources available within the program that faculty can tap upon.

D1049

PERCEPTIONS AND ATTITUDES OF UNDERGRADUATES VS POSTGRADUATES ON EFFECTIVENESS OF ROLE PLAY IN TEACHING HAEMATOLOGY-ONCOLOGY EMERGENCIES

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Background and Aims

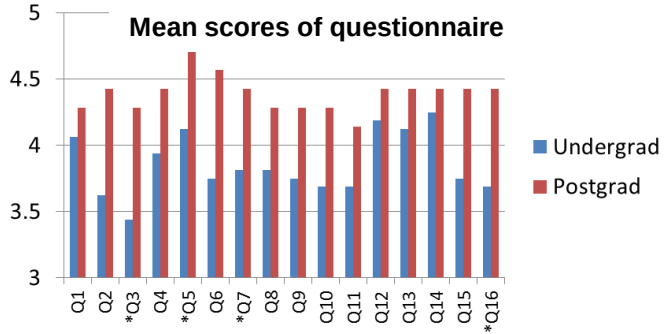
Handling of haematology-oncology (haem-onco) emergencies can be daunting to young doctors due to their complex and urgent nature that requires rapid intervention. Role play simulating real-life scenarios of haem-onco emergencies is novel at our institution. We aimed to explore the differences of perceptions and attitudes between undergraduates (in clinical years of medical school) and postgraduates using this teaching method.

Methods

16 undergraduates and 7 post graduates participated in this study. Participants from both cohorts were assigned the roles of doctor, patient/family, or observers for the scenarios. A Likert scale questionnaire designed to examine their perceptions and attitudes towards the teaching method was administered. The questionnaire was kept anonymous.

Results

In general, postgraduates perceived role play to be better than conventional didactic teaching methods (p=0.045). In particular, postgraduates were more satisfied that role play provoked critical thinking and removed barrier of communication with the tutor (p=0.017). Postgraduates would also recommend role play earlier in their training (p=0.047).



Q3: Role play is better than conventional teaching methods eg: didactic lectures
Q5: Role play provoked critical thinking
Q7: Role play removes barrier of communication with teacher
Q16: I would have recommended role play in my earlier training
1-Strongly disagree, 2-Disagree, 3-Neither agree nor disagree, 4- Agree, 5-Strongly agree

Conclusion

Postgraduates appreciated role play as a more effective teaching method for haem-onco emergencies and would recommend it to be used in teaching earlier in their training. These attitudes are likely shaped by their work experience and recognizing that learning from simulating real life scenarios would better equip them with practical skills for work. We plan to incorporate role play into routine teaching in our institution.

National University Cancer Institute, Singapore
A member of the NUHS

NUHS National University Health System

NUS National University of Singapore

D1050

HOW OCCUPATIONAL THERAPISTS LEARN TO BECOME CLINICAL EDUCATORS

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Occupational Therapy Department, Tan Tock Seng Hospital, Singapore

Introduction

This qualitative study aims to explore how Occupational Therapists (OTs) in a public hospital in Singapore learn to become educators at the workplace based on current faculty development approaches, so as to inform development and sustainment of faculty development programmes.

Methodology

Six 60-90 minute focus group sessions involving a total of 20 OTs were conducted between October and November 2016. Sessions were tape-recorded, transcribed and coded. Cross checking of codes, reflexivity and thematic analysis were carried out.

Results

OTs start to learn to become educators when they were OT students.
"As a student, I observed my supervisor how he would mentor me…then I reflect… I will do this or not do this for my student."
Education training and availability of guidelines were useful for the OTs.
"I think after I went through the courses…they actually helped me learn more of the learning needs model and apply it more comfortably."
"I learnt from clinical guidelines and supervisory framework."
Opportunities to take on educator roles helped OTs develop confidence.
"For me, it was learning on-the-job… and adjust my teaching method."
"I am getting better in educating students but it is an on-going process in getting to know students or junior staff."
OTs appreciated feedback and learning from other educators' experiences.
"I try to get feedback and suggestions from seniors."
"I learnt from what people share on their experiences."
"When students ask questions and we are unsure, we will discuss with colleagues."

Discussion

Kolb's experiential learning theory describes grasping and transforming experiences within a learning environment.

Grasping experiences

Started as early as *being a student.*

Formal faculty development courses helped develop and conceptualise their practice models.

Transforming experiences

Engaged in *self-reflection* and ongoing learning through *active experimentation with different learners and colleagues' feedback.*

Perceived as the **most** important contributor to becoming educators.

Conclusion

Health professionals learn to become clinical educators through experiential learning. Program planners of faculty development programmes should conscientiously incorporate learning activities that facilitate Kolb's experiential learning cycle.

Special Thanks: NHG HOMER grant and the 20 OTs who shared their experiences

D1051

USING EYE TRACKING TO EVALUATE A NEW CURRICULUM MAPPING RESOURCE

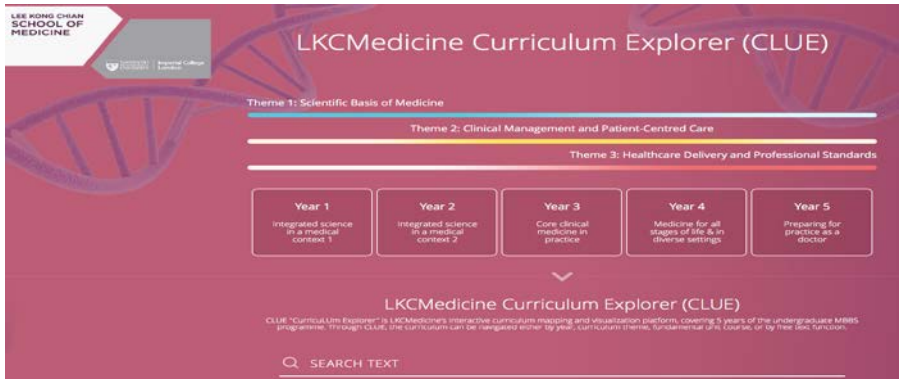
Claire Ann Canning, Nabil Zary. Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Background and Aims

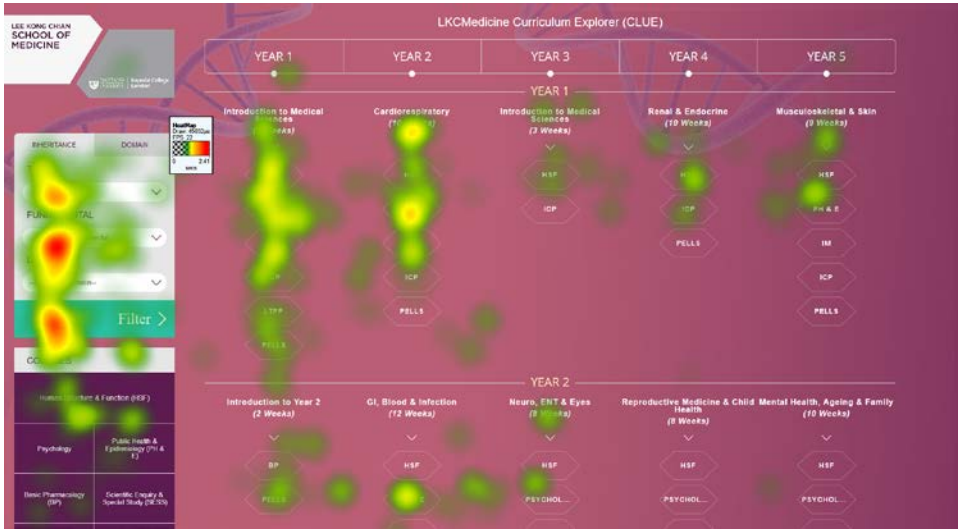
A dynamic curriculum mapping visualisation tool enables educators to make connections across the curriculum, and to maintain alignment of intended curriculum outcomes. Eye Tracking, extensively used in psychology, is gaining momentum in medical education. Using Eye Tracking is a novel way to explore how faculty utilises this platform, with the aim of improving functionality and ultimately curriculum improvement.

Mapping the Curriculum

A design based approach was adopted bearing in mind the different needs of our stakeholders.



Heat Map of Mapping Task



Conclusion

Through interrogating different aspects of the curriculum it is easy to identify where unnecessary overlaps exist. By relating topics across the years it identifies curricular areas that sit in isolation. By relating topics across the years students and faculty can appreciate why and when certain topics are taught (students) and faculty can identify what has been previously taught and potential gaps.

D1052

CORRELATION BETWEEN FRESNO TEST AND BERLIN QUESTIONNAIRE ON THE ASSESSMENT OF APPRAISAL SKILLS IN EVIDENCE-BASED MEDICINE

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*Department of Internal Medicine, #Department of Education and Clinical Training, Kaohsiung Medical University Hospital, Kaohsiung City, Taiwan

Background and Aims

Teaching evidence-based medicine (EBM) has become a core content in modern medical curriculum. Various assessment tools have been developed to assess EBM competence, however, none of them has been proven optimal. Fresno test and Berlin Questionnaire are two validated tools that presented in different formats. This study aims to assess the correlation between the two tools on assessing appraisal skills in EBM.

Method

We recruited 204 medical students who were in their first clinical year from August 2013 to July 2014 at Kaohsiung Medical University. The students received a 16-hour EBM training course within their curriculum in the first semester. At the end of the semester, they were assessed by using a written test consisted of mixed up items from both the Fresno test and Berlin Questionnaire. We categorized the items in both tools into 5 domains: 1. Asking question 2. Databases and searching 3. Study design and internal validity 4. Magnitude of treatment effect 5. Diagnostic accuracy. Pearson' correlation were tested on domains 3, 4 and 5 between the 2 assessment tools. Domains 1 and 2 were not compared because items in Berlin Questionnaire did not assess these domains.

Results

All of the 204 students completed the study, 152 (74.5%) from the 7-year high school leaver entry program and 52 (25.5%) from the 5-year graduate entry program.

Four items in the Fresno test and 6 items in the Berlin Questionnaire were grouped in domain 3. Three items in the Fresno test and 4 items in the Berlin Questionnaire were grouped in domain 4. One item in Fresno test and 4 items in Berlin Questionnaire were grouped in domain 5.

Correlations between the two instruments according to each EBM domain

EBM domains	Pearson's correlation coefficients	P value
1. Asking question	NA	
2. Databases and searching	NA	
3. Study design and internal validity	0.174	p<0.05
4. Magnitude of treatment effect	0.135	p>0.05
5. Diagnostic accuracy	0.264	p<0.05

Conclusions

Fresno test and the Berlin Questionnaire are 2 validated tools purport to measure a comprehensive range of EBM knowledge objectively. However, our study results showed that there were only weak correlation between these 2 tools in the assessment of appraisal skills, mainly from the domains of understanding study design, internal validity and diagnostic accuracy.

D1053

Correlation between Academic Performance and Stress level among Preclinical Medical Students of Thammasat University, Thailand

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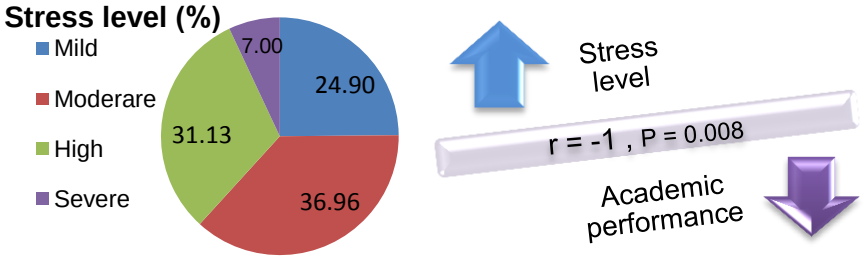
Introduction

Stress is usually experienced among medical students and can cause either physical or psychological problem; however: there is stress which has a beneficial effect on health or performance. The academic pressure is one of the stressors that exist not only in general students, but also medical students. Many pieces of research about academic performance and stress level were shown that they affect each other in the negative correlation. On the other hand, some pieces were shown in the opposite way. However, it has never ever researched on stress level and academic performance in preclinical medical students. Therefore, this study aims to illustrate the correlation between academic performance and stress level.

Methodology

Cross-sectional study was conducted among Thammasat University's preclinical medical students (2^{nd} – 3^{rd} year) in, 2016. The participants were asked for complete the questionnaire that consisted of two parts.
For the first part, Cumulative Grade Point Average (CGPA) referring their academic performance was collected. Secondly, Suanprung stress test-20 (SPST-20), a Thai standard stress test from the Ministry of Public Health, was additionally assigned to complete. The collected data were analyzed by using descriptive statistics and Pearson's correlation. All stages of this study were approved by the human ethics committee of Thammasat University No.1 (Faculty of Medicine) with certificate number 205/2559.

Results



From the response data (75.59%, n = 257 response rate), 58.37% were female. It was shown that average of CGPA from the respondents was 3.29±0.41. Interestingly, moderate stress from average stress level score(38.14 ± 16.05 from 100) was revealed. Additionally, the percentage of respondents with mild, moderate, high, and severe stress was 24.90%, 36.96%, 31.13% and 7.00%, respectively. There is a significant weakly negative correlation between academic performance and stress level (r = - 0.1, P = 0.008).

Conclusion

The results conferred that higher level of stress and academic performance was represented in an opposite direction. Therefore, the faculty of medicine should focus especially on the low-performed medical students to help them in stress management. Nevertheless, there may have other factors that should be more concerned because the correlation between academic performance and stress level wasn't strong.

D1054

A QUESTIONNAIRE SURVEY OF AWARENESS OF PHYSICAL ACTIVITY AMONG THE FACULTIES OF MEDICAL COLLEGE

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Introduction

Today's lifestyle should always be associated with the physical activities to reduce the risk of conditions such as cardiovascular disease, Type 2 diabetes, Osteoporosis and Cancer. Unfortunately, that potential is not being fully understood – especially in teaching faculty. It is also proven that the growing epidemic of obesity linked to recent decline in physical activity both in home, school and working places.

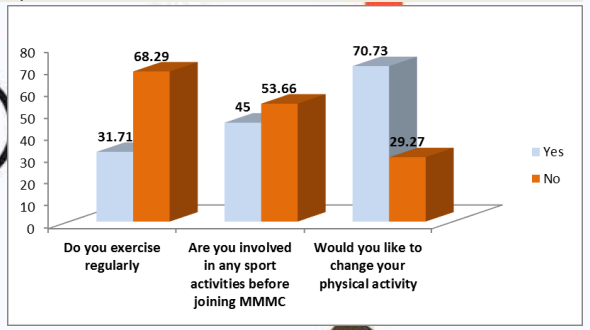
Methodology

Questionnaire study was implemented without any manual intervention. No experiment was conducted in the research. All the faculty members of Melaka Manipal Medical College (MMMC) were asked to answer the question pertaining to physical activity in a specific way. A total 45 faculty members were participated in the study. The questions in subject were selected from various sources and compelled to required form. These pre validated questions were implemented in the study.

Results

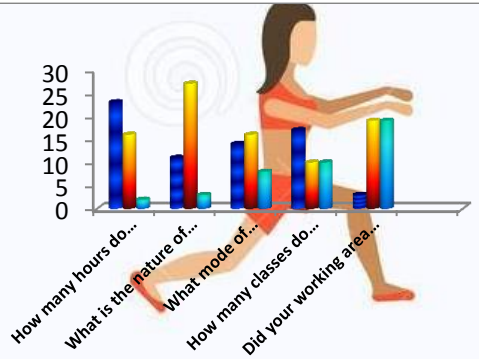
Showed lifestyle is restricted mostly to sedentary and moderate work. Most of faculties were using bike and cars to reach there working place

The physical activities in the form of exercise and sports activity were lacking. The majority of faculties were in agreement with changing the life style.



Conclusion

In addition to the importance of a physical activity faculty acts as a role model, engaging in a physically active lifestyle is very important. Achieving and maintaining a health-enhancing level of physical fitness is one of the basic standards for good teaching and maintaining good health. Physical activity in professionals leads to both personal health benefits, and improve job satisfaction. Infrastructure improvements such as sports activity in colleges among faculties, would help reduce obesity and non-communicable diseases.



D1055

HOW MEDICAL STUDENTS BEGIN TO DO CLINICAL PROBLEM SOLVING

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[1]University Medicine Cluster, NUHS, [2] Dept of Medicine, YLLSOM, [3]Medical Affairs (Education), NUHS, Singapore

NUHS National University Health System

Introduction & Objective

Developing diagnostic skills is a major objective in medical education. We have shown previously that Structured Reflective Practice (SRP) may be a useful framework for medical students to organise their reasoning processes[1] and medical students also tend to be over-confident about their diagnostic skills[2]. This study aims to evaluate how medical students in their first clinical clerkship year begin to learn and practice diagnostic reasoning.

Methods

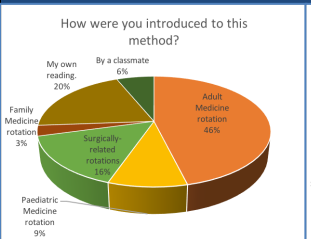
As an introduction to structured, deliberate clinical problem solving practice, in their first clinical clerkship year, third-year medical students from Yong Loo Lin School of Medicine were given a short lecture on the principles of diagnostic reasoning and were encouraged to apply any of these principles to every case that they encounter. Upon completion of the year, each student was sent a 6-question survey via email link. These questions were designed to enquire how they learnt diagnostic reasoning strategies, which strategy they were using, if they practiced it and if they knew what Bayes' Theorem was.

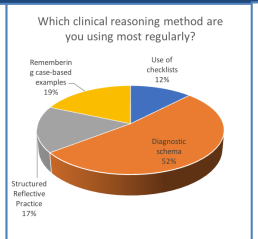
Results

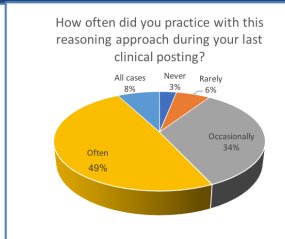
Of 300 students sampled, 94 responded (31.3%) and out of these 94, 77 (81.4%) students indicated that they have been practising with a well-defined clinical reasoning method for diagnosis.

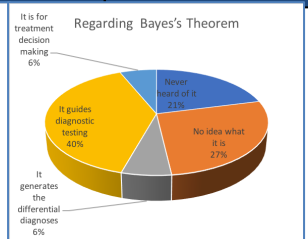
Discussion & Conclusion

About a quarter of the students were introduced to various practices through their own reading or their classmates. **This highlights the potential of peer-teaching or independent learning when interests have been stimulated**. The majority of respondents practiced diagnostic reasoning using a variety of approaches, predominantly via diagnostic schema and case-based exemplars. **This suggests that students prefer strategies which employ memory and recall as opposed to open-ended critical thinking**. Most importantly, the vast majority of students practiced using these strategies occasionally, often and all the time. This is of note as **students demonstrated the ability to persist with these strategies** despite this being a low-intensity and low-resource intervention to introduce problem-solving skills to novice clinician-trainees.









1. Kee A, Lim TK. Can we really teach diagnostic reasoning to naïve medical students? 13th APMEC 2016 (abstract).
2. Kee A, Lim TK. How do medical students learn diagnostic reasoning? 14th APMEC 2017 (abstract).

D1056

RECALLECTIONS: INCREASING REFLECTIONS AND LEARNING ON CALL

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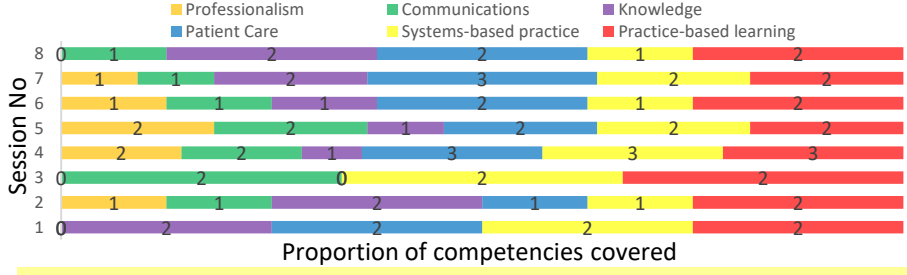
Introduction

- Patient exposure is crucial for learning, and refinement of the clinical acumen.
- Experiences during night call provide ample learning material, but discussion is limited due to the need for expedient management.
- Resources are also concentrated on existing teaching curriculum, and their structure may not fully utilise the educational opportunity from night calls.
- Residents gave feedback that they manage interesting patients on call, and wished to share the learning points with their peers.
- ReCallections was developed to enhance the educational content of calls.

Methodology

- ReCallections is a resident-led initiative.
- Objectives:
  1) Provide a platform to share on-call experiences
  2) Foster a culture of reflection
  3) Nurture the teaching culture
  4) Provide an opportunity for clinical quality improvement via peer-review learning.
- Sessions are conducted monthly, lasting 1.5 hours with 2-3 clinical encounters. Senior residents and faculty members function as facilitators.
- Residents were invited to share experiences, which may be clinical, but can also encompass issues with communications, ethics, and professionalism.

Results



- 8 sessions with 18 clinical encounters from February 2017 to October 2017
- Topics included the importance of a concise handover, dilemmas in discussing extent of care, and principles in consent taking.
- Senior guidance has allowed residents to rectify misconceptions.
- Being peer-driven, ReCallections has helped to develop the learning culture, and promotes a habit of reflective learning.
- Reflection and sharing of learning experiences helps to reinforce learning.

Conclusion

- ReCallections is a way to reflect and learn from calls, and more attempts should be made to explore more ways to maximise learning from service.
- Discussion is ongoing to further enhance the learning experience of residents, with plans to collect quantitative feedback from residents.

D1057

15th ANNIVERSARY APMEC Asia Pacific Medical Education Conference

Working Hour Reduction Program of Junior Doctors in Kaohsiung Medical University Hospital

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Introduction

Overtime duties and busy schedules make medical professions an over-loading job. It not only damages doctors' health and emotion, but also dampers the quality of health care and safety. It happens in our country, especially for junior doctors. Therefore we use a technologic program supported by the hospital authority to reduce the working hour for these doctors.

Methodology

There were three phases of actions to reduce working hour less than 88 hours per week and no more than 32 hours continuous working time for junior doctors. First (May 2015~Aug 2015), we surveyed working hour of our resident doctors. In second phase (Sep 2015~July 2016), we encourage the departments to follow the rules by adjustment of duty schedule. In the third phase (Aug 2016~De 2016), we locked down duty arrangement system by electronic technologic method to make sure the rules were completely followed. In the mean times, we also have junior doctors' questionnaire survey and monitor to make sure the policy was followed.

Results

With the program, the working hours of junior doctors decrease gradually. In average, weekly working hours reduced from 74, 68 to 61 hours in internal medicine department, and from 80, 75 to 71 in surgery department in phase 1, 2, 3 respectively. The reduction of working hour is successful proceeded because of the refreshment of more nursing practitioners and the technology method. However, the monitoring survey from questionnaire still found some violations in phase 2 and 3.

Conclusion

The program demonstrated that stepwise strategies and with the help of technology are necessary to reduction the loading of junior doctors. It also revealed the monitor system and fully support from the hospital authority are critical to success. Still, the refreshment of more practitioners or replacement of other participating doctors for the shortage of man-power is a key for reduction working hour of junior doctors.

D1058

Pilot Study: Acceptance of Smart Home Monitoring Technology among Older Adults in Singapore

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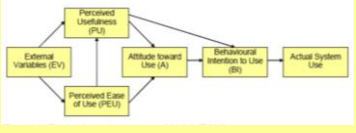
[1]Lee Kong Chian School of Medicine, NTU, Singapore

Introduction

There will be increasing demands on healthcare resources and caregivers as Singapore's population continues to age. Due to limited capacities in healthcare institutions such as nursing homes, more elderly will be encouraged to age in the community. Thus, interests in smart home monitoring technology to assist older adults (aged 60 years and above) with aging in place are growing. However, since smart home devices are not widely used yet in the mainstream market, limited knowledge exists regarding older adults' interests and concerns towards the system in Singapore. Hence, the objective was to conduct a pilot study surveying older adults to determine facilitating factors and barriers affecting their acceptance of such technology.

Methodology

Participants from six centres were recruited to participate in a survey. Based on the well-established Technology Acceptance Model, 7 factors were evaluated on their correlations and effects on older adults' behavioural intention to use.



Results

Eighty-two valid responses were collected (36 older adults aged 60 - 69, 28 aged 70 - 79, and 18 aged 80 and above). From the analysis, attitude towards use and behavioural intention to use were found to be significantly correlated with high levels of perceived usefulness ($r=0.41$, $p< 0.001$ and $r=0.30$, $p=0.007$), perceived ease of use ($r=0.48$, $p<0.001$ and $r=0.31$, $p=0.004$) and social influences ($r=0.46$, $p<0.001$ and $r=0.51$, $p<0.001$), but were not significantly impacted by age, familiarity and perceived potential disadvantages.

Conclusion

In conclusion, smart home providers may find these factors useful in marketing consumer-centric devices that will benefit older adults. Ultimately, these devices should not replace caregivers, but provide a supportive and supplementary role. Additionally, governmental legislation for subsidies to enhance financial support can pave the way for greater acceptance of the technology, especially for older adults who are living alone.

D1059

OPIOID RISK MITIGATION & OVERDOSE RESUSCITATION

College of Medicine
UNIVERSITY OF CENTRAL FLORIDA

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INTRODUCTION

From 1999 to 2014, more than 165,000 people in the U.S. died from overdose related to opioid pain medication, and U.S. medical schools have been called upon to strengthen curricula on the appropriate use of opioids, including an emphasis on risk mitigation strategies in an effort to prevent addiction and overdose.

METHODOLOGY

Additional didactic and training experiences in pain management including opioids have been added during the four year curriculum at the authors' institution. One module, Opioid Risk Mitigation Strategies and Overdose Resuscitation, provides an overview of the opioid crisis and utilizes an interactive, web-based simulation of an evolving clinical case of severe pain, with quizzes to help consolidate knowledge and promote critical thinking. The module incorporates recent clinical guidelines published by the Centers for Disease Control, the American Heart Association, and the Substance Abuse and Mental Health Services Administration and focuses on risk mitigation and overdose resuscitation including how medical providers can educate patient and caregivers about emergency use of naloxone to help save lives.

RESULTS

This active learning module is used at the authors' institution as part of a didactic jointly taught by Psychiatry and Family Medicine faculty during the Psychiatry Clerkship, and can likely be helpful also in graduate and continuing medical education as an independent study self-learning module or in an interactive didactic session with an expert facilitator. Feedback to date from students and faculty has been positive. The module has been published on MedEdPORTAL and is readily available for free use by medical educators.

CONCLUSION

Use of interactive, multimedia online learning modules, and multidisciplinary collaboration in teaching such as by Psychiatry and Family Medicine faculty, can facilitate training in the treatment of pain and prevention of opioid addiction and overdose. Free online access to the above training module is available either as part of a free database of peer-reviewed, web-based, interactive learning modules for medical educators in Psychiatry at http://admsep.org/csi-emodules.php?c=emodules-description&v=y or at *MedEdPORTAL Publications.* 2017;13:10621 https://doi.org/10.15766/mep_2374-8265.10621

Opioid Overdose: Assess & Activate Emergency Services

Cardiopulmonary Resuscitation

Naloxone Nasal Spray

Stay until Emergency Services Arrive

D1060

DEVELOPMENT OF A CLINICAL DECISION SUPPORT SYSTEM FOR DIABETES CARE: A PILOT STUDY IN FINAL YEAR MEDICAL STUDENTS

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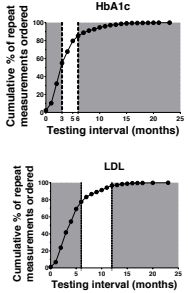
Introduction

- Management of complex chronic diseases such as diabetes requires the interpretation of multiple laboratory test results.
- We developed a diabetes dashboard system with clinical decision support functions and compared it to an existing laboratory reporting system
- We evaluated its effectiveness in final year medical students using simulated clinical scenarios

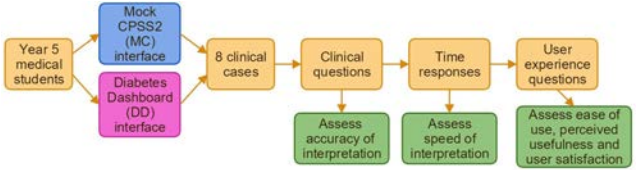
Suboptimal monitoring



Methodology

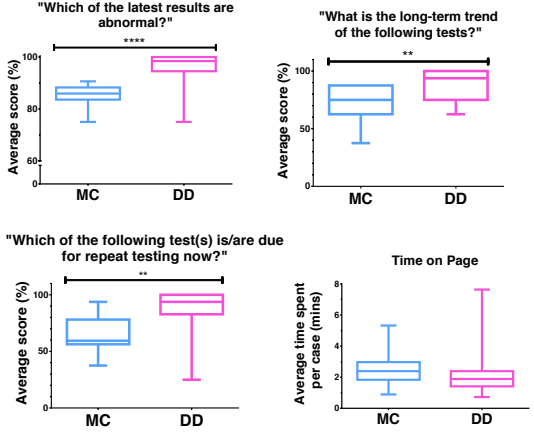
- Design of diabetes dashboard incorporating alerts and interactive graphs

- Survey comparing the diabetes dashboard (DD) and the hospital system (MC) in final medical students (n=34) using 8 clinical scenarios.

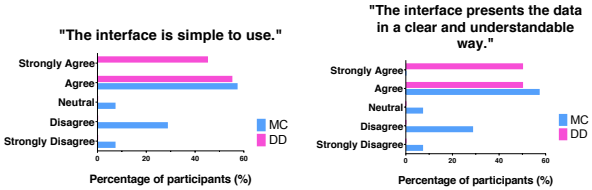


Results

- Comparing accuracy and speed of interpretation



- Comparing user experience



Conclusions

- Using the DD, participants scored better at interpreting abnormal results, long term trends and identifying when tests need to be repeated, compared to students using the MC.
- On the whole, the DD was more well-received by participants than the MC interface.

Future Directions

- Performing the study with a larger sample size incorporating qualitative feedback on how lab investigations are interpreted
- Extending the dashboard for other chronic diseases

D1061

ACGME SIX CORE COMPETENCIES BODY MIND MAP

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Introduction

The Accreditation Council for Graduate Medical Education (ACGME) six core competencies(System-based practice, Medical knowledge, Practice-based learning and improvement, Interpersonal and communication skills, Professionalism, and Patient care) had been endorsed by many medical educational authorities. However, studies found that it's difficult for learners to implement the six core competencies in daily practice, partly because of lack of knowledge of the competencies.
Therefore, we proposed the "ACGME six core competencies body mind map" as a visual mnemonic to help learners memorize and recall the six core competencies in their daily practice in an interesting way.

Methodology

An introductory lecture of the ACGME six core competencies based on the visual mnemonic "ACGME six core competencies body mind map" was delivered to 203 undergraduate medical students in a training course in Kaohsiung Medical University Hospital.
The learners were asked to imagine that they work under the system(SBP), retrieve medical knowledge from the right brain, perform PBLI with the left brain, do IP&CS with mouth, put "professionalism“ in heart, complete "patient care“ with hands.
All learners received written tests which required the learners to fill in the title of ACGME six core competencies in a blank version of the map right after and five days after the curriculum. The mean memory error rates of six core competencies were calculated and compared.

Results

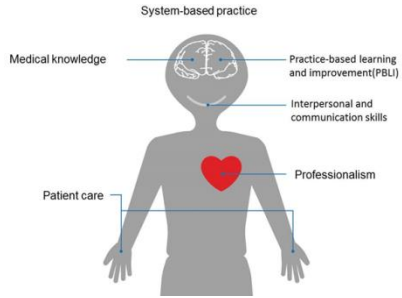

Figure 1. ACGME six core competencies body mind map

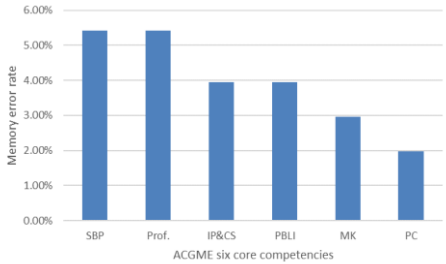

Figure 2. The memory error rates of six core competencies

Figure 1: The “ACGME six core competencies body mind map”.
Figure 2: At day 5 test, the memory error rates for System-based practice(SBP), Professionalism(Prof.), Interpersonal and communication skills(IP&CS), Practice-based learning and improvement(PBLI), Medical knowledge(MK), and Patient care(PC) were 5.4%, 5.4%, 4%, 4%, 3%, 2%, respectively.

Conclusion

The "ACGME six core competencies body mind map" is an effective visual mnemonic for memorizing the title of the ACGME six core competencies. The mean memory error rates of the six core competencies at five days after the curriculum were all lower than 5.4%. Whether good memory retention improves implementation needs further study.

D1062

VIRTUAL REALITY IN CPR EDUCATION

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Introduction

The Problem: Cardiac arrest survival remains low despite CPR intervention.
The Goal: To determine if CPR education using Virtual Reality (VR) can alleviate The Problem.

Methodology

The Subjects: 30 CPR instructors.
The Process: Interviews before and after subjects tested a CPR VR Simulation.
The Set-Up:

Results

The Perceptions:

Current CPR Education	Unideal Test Preparation
	Unideal Test Performance
Features of VR Useful for CPR Education	Fidelity
	Engagement
	Resource Conservation
	Memory Enhancement
Potential Role of VR for CPR Education	Method: Blended Learning Tool
	Target Populations: Lay Public, New Learners, Qualified Persons

Conclusion

The Solution: VR has a potential role in CPR education because it can overcome limitations of current CPR education.
The Future: Implementation of proposed VR features and methods, and studies on target populations.

IMPROVING GENERAL INTERNAL MEDICINE CME USING CURRICULAR DEVELOPMENT AND CHANGE MANAGEMENT CONSTRUCTS

D1063

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[1, 2] Division of Advanced Internal Medicine, University Medicine Cluster, National University Health System, Singapore

Introduction

One of the cornerstones of Academic General Internal Medicine is offering continuing medical education (CME) program to the many learners and practitioners caring for patients. The Division of Advanced Internal Medicine (AIM)'s CME program was not informed by the scope of general internal medicine or learner needs. There was variability in the presence of learning goals and objectives and educational strategies and pedagogies were diverse. Lastly, there was not an ongoing evaluation of the sessions or curriculum as a whole.

Methodology

Feedback regarding CME was obtained during the divisional retreat in December 2016 from all the stakeholders clarifying adult learning. Work groups were formed for each of the new CME categories identified. In order to better meet the needs of our learners and patients, we utilized Kern's 6-step curricular framework to create a robust CME program. As for the change management strategy, we focused on engaging everyone in the process such as senior faculty pairing with juniors to increase buy in. Speakers were invited systematically and informed of the expectations and relevant process documents.

Results

CME categories	Frequency	Format for Each Category
Subspecialty SR Teaching	Weekly	Process Documents were prepared by work groups in the following format for each of the categories. 1. Category 2. Introduction/Context 3. Learning Objectives 4. Pedagogy 5. Topic Ideas 6. Logistics
The 20 minutes consult	Weekly	
Junior Residents Grand Ward Round	Weekly	
Radiological Round	4 times per year	
Joint AIM Nursing round	4 times per year	
Spectrum of Care	4 times per year	
AIM Career track	4 times per year	
SR Topic Review	4 times per year	
PRL (Peer reviewed learning)	Monthly	
SR Journal Club	Twice Monthly	
SR-Led teaching	Every 5th Wednesday of the month	
Division Head's Morbidity and Mortality Round	Every 5th Wednesday of the month	

The new format divisional CME has been implemented since April 2017 and adjusted further after the initial feedbacks. We are currently in the process of obtaining formal feedbacks from the all types of audience on the sessions.

Conclusion

We present our work on the CME revamp with multiple target-oriented categories and systematized the process. We learnt and utilized the curricular development and change management constructs to improve catering the learners' need.

D1065

A proposal for a 4th wave of Education for Collaboration

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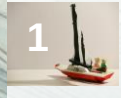
The First Three Waves of Education for Collaboration

In this paper, we show how education for collaboration (E4C) has evolved in three main historical waves in Canada and other Western countries. These first three waves were called "Interprofessional Education" (IPE). The first wave (Canada,1959-75) was defined by a desire to educate students together so that they would meet national workforce challenges. The second (Canada & USA, 1994-1999), focused on workforce management, and aimed to give students the right knowledge to address healthcare needs, exposing them to other healthcare roles. The third wave (global, 1999-today) uses concepts from patient safety, suggesting that IPE can curb errors, improve outcomes, and prepare clinicians for complex healthcare needs.

The 6 Failures of the Third Wave

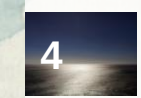


IPE is logistically complex and costly. Best practices in the IPE literature include small-group learning, which itself is resource-intensive and requires a unwieldy level of wizardry.

IPE is developmentally inappropriate. Students in their first or second year of study rarely understand their own scope of practice fully, and therefore cannot either explain it to others nor assimilate what others' scopes might be.

The link between IPE and health outcomes is still missing. Several reviews of the IPE literature have demonstrated that more than 30 years into IPE scholarship, we still cannot confirm the critical link. The WHO has also rescinded its support of IPE.

The 6 Failures of the Third Wave (cont'd)



IPE insufficiently engages with theory. While it has been deemed atheoretical, IPE relies implicitly on "contact theory" (Allport 1954) but violates two of its core assumptions: a) that interactions should not be mandatory; and b) that hierarchies should be addressed and mitigated during educational interventions.

IPE rarely discusses power and conflict. In a previous study, we have shown that only .3% of 2,191 articles on IPE address power and conflict (Paradis & Whitehead 2015). This avoidance of a key issue underlying problematic collaboration ignores the very problem that IPE is trying to solve.

Healthcare is an inertial system which IPE cannot change. IPE places the onus for change on the most vulnerable elements of the system: students and new graduates. This is unfair and sets them up for failure, thus maintaining the status quo.

Conclusion: Finding a solution beyond the lamppost

We suggest that education for collaboration should take the form of uniprofessional education for collaboration at the pre-licensure level, followed by in-practice interventions that focus on usable and relevant skills. This solution would be developmentally appropriate, theoretically grounded, more likely to impact care, would pay attention to power, and would be logically more straightforward.

ID: D1066

EXPLORING THE EXPERIENCE OF UNDERGRADUATES IN e-TUTORING

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Background:

Challenges in STEM education in Malaysia

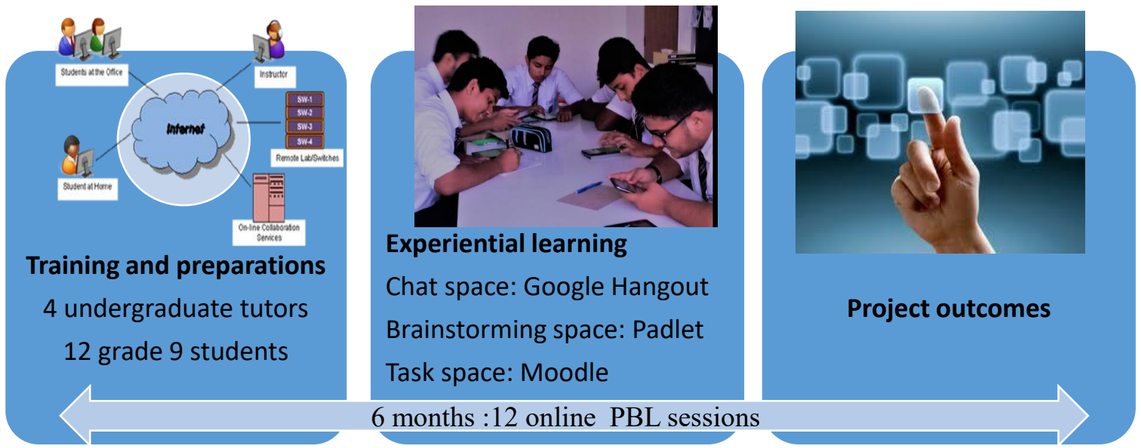
1. Declining enrolment
2. Low achievement standard
3. Lack relevance to real life problem

Strengthening delivery of science and mathematics through Problem based Learning (PBL) facilitated by undergraduates as enablers.

Method:

Basic qualitative research to explore e-tutors' experience through thematic analysis of their reflective reports after every lesson and focus group interview at the end of the project.

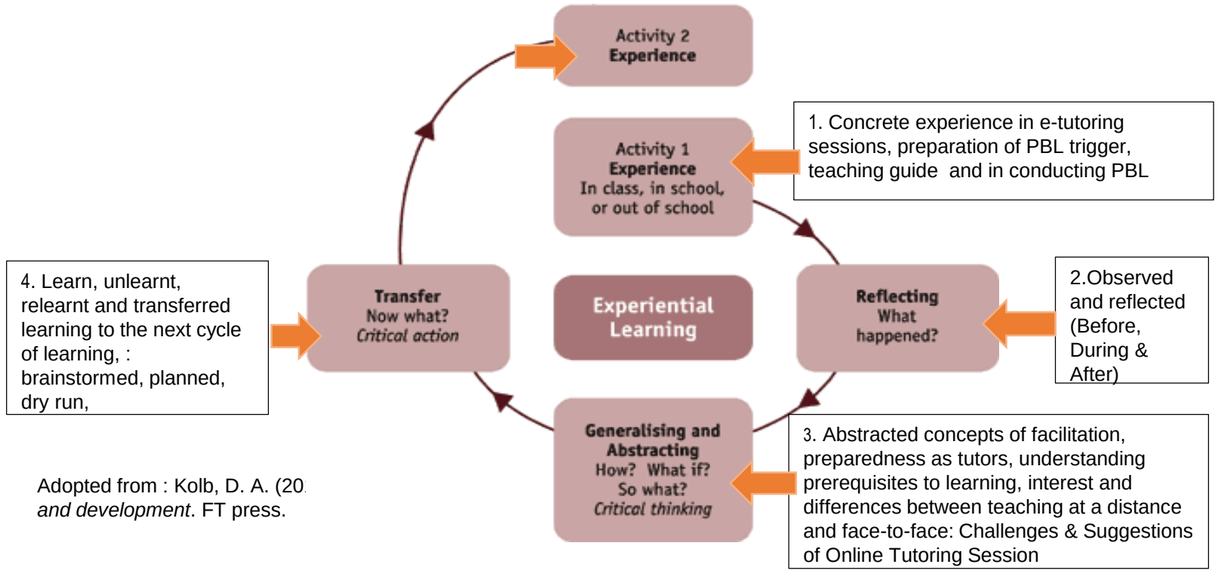
Figure 1: Method of study



Results

- Training helped tutors to "*structure learning based on intended learning outcomes and in developing learning and teaching guide"* (B2,T4; G1, T4)
- Tutors shaped thinking and understanding, initially tutees waited for answers, but were "*guided "to seek out relevant information to apply*, *using relevant questions" (G2, T1*),. "*Tutees looked up to tutors for guidance" (B1, T1)*.
- Tutors had to overcome feelings of "*anxiousness, scared, unsure about their role especially on their authority in classroom interaction*" (B1, T4; G1, T1)
- Tutors progressively learn through debrief sessions by project team and group reflection sessions on challenges, shared best practices and worked collaboratively to improve outcomes with each trigger.
- With each progressive *session*, "*tutors observed tutees improvement in defining the learning issues and group dynamics*" (G1; G2; B1; B2, T4)
- Tutors acknowledged differences in thinking and tutees' experiences. Tutors noted "*level of engagement was dependent on their interest in the PBL scenario and is gender dependent*" (B1,B2, T4).
- Limitations on e-tutoring even with synchronous audio, visual, and written capability, "*e-tutoring were still not as fulfilling as face to face learning, without full view of the learning environment and body language*" (B1; B2; G2,T4) further "*tutees could divert the view of the camera*" (B2,T4) and "*technical hiccups*" (B2, T4) lead to awkward moments of "*silence*" (B2, T4).

Figure 2: Tutor's experiential learning



Adopted from : Kolb, D. A. (20
and development. FT press.

Conclusion: Undergraduates learnt experientially as e-tutors in facilitating PBL for secondary school students.

Reference :
Andreason, K. (2015). Digital Divides: The New Challenges and Opportunities of e-Inclusions. New York: CRC Press, Taylor & Francis Group.
Yukawa, J. (2011). Telementoring in the K-12 Classroom: Online communication technologies for learning. Scigliano D. (Ed). Information Science Reference, Hershey. New York.

D1067

MOTIVATION, MINDSET AND GRIT OF RESIDENTS PREPARING FOR PACES

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Background & Aims

Mindset and Grit have become popular theories in modern achievement psychology. A fixed mindset is characterised by the belief that basic traits (such as intelligence) are fixed, whereas those with a growth mindset believe that they can be developed. Grit is characterised by the perseverance and passion to achieve long-term goals. Both theories suggest that motivation is a more important determinant of success than inherent ability.

We assessed the motivation, mindset and grit of 20 Internal Medicine Residents preparing to sit the the October 2017 diet of the PACES (Practical Assessment of Clinical Examination Skills) examination.

Methods

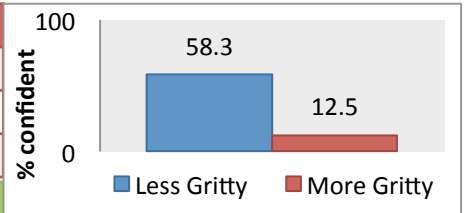
Residents from a single training hospital, were asked to complete an online survey designed to determine their educational history, level of preparation, perceptions of difficulty, and if they felt confident passing PACES on their first attempt. Two sections of the survey consisted of the 20-point Mindset Quiz (CS Dweck) and 12-point Grit scale (AL Duckworth).

Results

Comparing the mean mindset scores of Residents based on their educational history, level of preparedness, degree of confidence, and perception of difficulty, no correlation was found.

Table 1: Mean Baseline Demographics	
Residency Yr	2.8 ± 0.4
Yrs Since Graduation	2.5 ± 0.7
1st Attempt at PACES	19 (95%)

Table 2: Motivation, Mindset & Grit	
Confident on Passing	9 (45%)
Mean Mindset Score	35.7 ± 2.9
Growth Mindset	11 (55%)
Fixed Mindset	9 (45%)
Mean Grit Score	3.4 ± 0.4



Residents who were less confident of passing the PACES examination had higher Grit scores (p=0.040).

As previously demonstrated, those with more years of training also had higher Grit scores.

Conclusion

In terms of mindsets, all Residents tended towards the mean. As expected (and demonstrated in previous studies) grit scores increase with years of training. An unexpected correlation was found where grittier Residents were less confident of passing the PACES examination. The lack of statistical significance in other correlations could be due to the study being underpowered. More research is needed to determine the correlates of Mindset and Grit in Residents preparing for their post-graduate examinations to find predictors of future success.

D1068

NUHS
National University Health System

USING INSTRUCTIONAL ONLINE WEBPAGE TO ENHANCE VISUAL RECOGNITION OF HYDRONEPHROSIS AND IT'S SEVERITY BY ULTRASONGRAPHY

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[1]Emergency Medicine Department, National University Hospital, Singapore

Introduction and Objective

The use of point of care ultrasound in the emergency department enables doctors to make an accurate diagnosis of hydronephrosis & its severity to expedites the care of patients with this condition. Doctors are generally not confident in diagnosing the grades of severity of hydronephrosis using bedside ultrasonography in emergency medicine department.

We aim to determine whether the introduction of a web-based educational module increases visual recognition and knowledge in diagnosing the severity of hydronephrosis. The educational module consists of an online teaching of hydronephrosis and its grades of severity supported by ultrasonographical photos.

The pre-and post-tests at the beginning and end of the module serve as objective tools to measure the improvement of knowledge and visual recognition.

Methodology

This is a single centre, prospective study, which includes creating a dedicated instructional webpage using ultrasound images to diagnose and appreciate different grades of hydronephrosis.

The participants were doctors working in the emergency medicine department.

The duration of the study was 6 months.

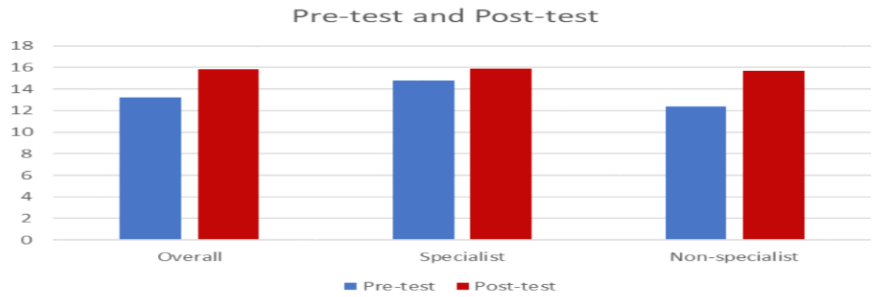
The online webpage consists of an educational model, pre-test, and post-test.

The educational model consists of an online power point presentation covering the definition and grades of hydronephrosis with galleries of ultrasound images demonstrating the different grades of hydronephrosis.

We measured participants improvement through their response to the pre-and post-test (both are 20 graphical MCQs of hydronephrosis and its grades).

This was an anonymous study. Broad titles of the participants (specialist, and non-specialist - senior residents, residents, medical officer) were collected to enable subgroup analysis.

Results



46 doctors participated in this study (16 specialist and 30 non-specialists). Overall there was an improvement from pre-test to post-test of all doctors with means of 13.2 versus 15.8 (p-value <0.001). This was more significant in a non-specialist doctor of 12.4 versus 15.7 (p-value < 0.001). The specialist group result was 14.8 versus 15.9 (p-value 0.1005). Furthermore, the specialist group done better than non-specialist on pre-test 14.8 versus 12.4, this difference disappeared on post-test 15.7 versus 15.9

Conclusion

This scholarly project is more useful among non-specialists compared to the specialists in improving visual recognition of hydronephrosis and its grades. Non-specialists were able to achieve comparable post-test scores to specialists after completion of this online module

D1069

Clinical educators' perceptions of the role and educational value of augmented reality in medical education.

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Introduction

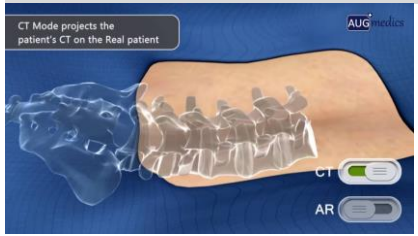


Figure 1: Use of AR in spinal surgery (Augmedics)

Figure 2: Use of AR in anatomy (Thorax viewer)

Methodology

This study aimed to explore clinical educators' perceptions of AR's role and educational value via a questionnaire.

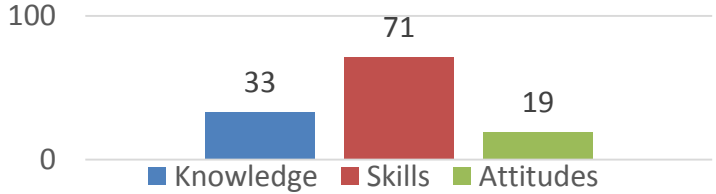
The role of AR was directed at AR's ability to: 1) augment physical context, 2) provide feedback and 3) improve patient outcomes. Perceived usefulness of AR was explored in the domains of knowledge, skills and attitudes.

Data analysis looked for any trends relating participants' perceptions and their prior experiences with simulation based medical education.

Results

A total of 26 responses were obtained. 70% of respondents had positive responses regarding AR's potential to 1) provide contextual learning and 2) provide feedback for learning. Further exposure to AR education technologies is required in order to qualify its impact on health outcomes.

Potential educational value in different domains (% positive responses):



Conclusion

In general, clinical educators are positive to the idea of using AR in medical education, especially in anatomy and surgery. Teaching of procedural skills is another area where AR can prove to be beneficial.

With increasing exposure to new forms of AR, the role and educational value of AR can be better explored.

D1070

Medical Students' KCSE Grade and Their Relationship to Academic Performance of Egerton and Moi Universities, Kenya

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3Department of Surgery, Moi University,4Department of Curriculum, Instruction and Educational Management, Egerton University,
5Department of Medical Education, Moi University, Kenya

Introduction

Admission into Kenyan public universities' medical schools is either by Kenya Universities and Colleges Central Placement Service(KUCCPS) or individual universities and their senates on self-sponsorship programmes (SSP) basis. The KUCCPS selected students have strong O-level grades in all subjects, with specific cluster science subjects and cumulative points. The SSP students have minimum university entry requirements and cluster subjects for admission unto the medicine and surgery (MBCHB) programme. While at medical chool sometimes students repeat a year, retake supplementary exams, or even are discontinued on failing to meet the pass mark (academic grounds). There is no accessed evidence in the literature that indicates the suitability of this selection criteria in use.

Methodology (14 Arial)

The study utilized ex post facto research design for Retrospective record review (3R) for academic year 2007/08, 2008/09 and 2009/10 as cohort classes. Target population was Medical students (MBChB) already examined at both preclinical and clinical course levels. Data captured using a data sheet document.

Results

		Preclinical		Clinical	
KCSE admission Grade -performance		MU	EU	MU	EU
Spearman's rho	Correlation Coefficient(rho)	-.128	-.199	-.116	-.085
	p value	.090	.088	.153	.474
	N	177	75	154	73
	Performance means	62.25	63.11	62.15	65.27

	MU	*EU*	MU	EU
(Constant)	62.996	66.363	62.780	67.045
English	**.647**	-.246	-.069	-.816
Kiswahili	-.534	**.066**	.290	.288
Mathematics	-1.065	**1.511**	.227	1.087
Biology	**.094**	-.983	-.010	.339
Chemistry	**.635**	-.070	.320	2.048
Physics	-.442	-1.348	-.423	-1.722

Performance at preclinical and clinical courses was not influenced by their KCSE grades at admission (MU and EU). KCSE English and Chemistry grades positively impact on preclinical performances. Biology, Mathematics, Kiswahili and Chemistry positively influence performance in Clinical courses.

Conclusion

A KCSE at admission has no influence on students' performance in preclinical and clinical courses at Moi and Egerton Universities. KCSE grades in English and Chemistry grades positively impact on students' preclinical performances. KCSE's Biology, Mathematics, Kiswahili and Chemistry positively influence performance in Clinical courses. Of interest is Kiswahili influence in performance in clinical courses

ID D1071

NATURE OR NURTURE - A CYCLIC ACTION RESEARCH REPORT ON COLLECTIVE COMPETENCE

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INTRODUCTION

To achieve competence in the entire healthcare set-up, the trainee students must introduced to the network of industrialists and interconnected challenges to enhance their professional abilities.

STATEMENT OF PROBLEM

Educators assume students acquire skills required for professional practice somehow at the time of graduation. But students as individuals are characterized by some confines that limit their collaborative and inter-professional abilities.

AIM

To conduct a cyclic action research on collective skill training program for dental undergraduates and to analyze the students' perspectives about the usefulness and importance of such programs in the curriculum.

METHODOLOGY

SEMI-STRUCTURED INTERVIEW

Delphi subgroups were consulted to design a reliable and credible collective competence framework - Ten managerial skills were finalized for prototype program

FUNCTIONAL AND SOCIAL APPROACHES

- We adopted a combination method for implementation

PROGRAM EVALUATION

- Course end feedback was obtained from participants who attended the entire series
- A close-ended questionnaire (Figure 1) with 5 points Likert Scale response was used to assess the effectiveness of the Program
- Descriptive statistics was applied (Table2)

NEED ANALYSIS SURVEY

Delphi experts' panel (n=50)
Delphi students' panel (n=50)

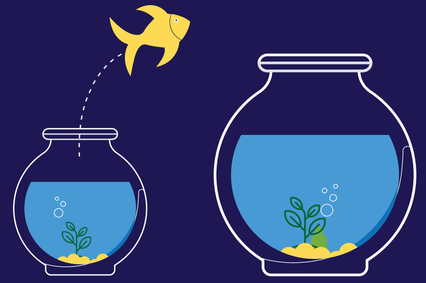
Graduating students are *not getting adequate organizational experience* to start their independent practice

ACTION RESEARCH

- Seven in-house faculty members were involved
- The program was offered to 80 CRI students
- Weekly program for 30 weeks

GUIDELINES

- Expose the reality in a positive way
- Break down the content/skill into small steps and pieces of information
- Encourage active participation
- A mentor alloted for follow-up trainn and one-to-one support



RESULTS

Table: 1 Topics suggested for collective competence training program

Program topics	Delphi experts (n=25)	Delphi students (n=50).	Total responses (n=75)
How to set a private clinic?	25	50	75 (100%)
How to purchase the dental materials from the suppliers?	25	50	75 (100%)
How to purchase dental equipment?	25	50	75 (100%)
How to maintain patient details in private practice?	20	43	63 (84%)
How to make professional deals with consultant specialists?	20	38	58 (77%)
How to start a corporate dental hospital?	15	42	57 (76%)
How to approach corporate and multi-specialty hospitals for job opportunities?	10	43	53 (71%)
How to get bank loan for starting a clinic	25	41	66 (88%)
How to handle ethical issues in dental practice?	25	50	75 (100%)
How to be a successful dental practitioner?	19	50	69 (92%)

1. The majority of the participants were strongly agreeing on the importance of collective competence and the necessity for including this training in the curriculum (mean = 4.8).
2. Participants strongly agreed that
   - They were introduced to a new dimension of successful dental practice (mean=4.85)
   - The program revealed solution for carrier-related issues (mean=4.5)
   - They can translate the learned skills to their career (mean=4.6).
   - The skills required to become a successful dental practitioner were made clear for them (mean=4.2).
3. The training on finance aspect (mean=3.6), team practice (mean=3.5) and trading of dental materials and equipment (mean=4.0) need to be addressed more efficiently in future sessions.

Out of 80 participants, 56% (n =45) attended the entire series. Course end feedback was obtained from 45 students.

Table: 2. Participants' response to feedback questionnaire

S.No	Fedback Statement	Mean	SD
1	I was introduced to a newer dimension of profession	4.85	0.363
2	The program series revealed practical solution for career issues	4.50	0.658
3	The training was relevant and fulfilled my expectations	4.57	0.620
4	The chances for applying the learning in reality is high.	4.61	0.493
5	I am clear about the competencies required to establish a successful practice	4.20	0.719
6	My understanding about financial logistics in career development was include.	3.65	0.640
7	Interest is developed on team practice	3.63	0.645
8	I have acquired an overall idea about successful dental practice	4.78	0.417
9	I have developed knowledge in trading dental equipment and materials	4.00	0.699
10	This program concept and training are essential for graduating students and need to be included in the curriculum.	4.80	0.453
	P value		<0.001**

CONCLUSION

1. The participant highly appreciated the usefulness of training program on collective skills and recommended to include it as a part of the dental curriculum.
2. Based on our study results, we suggest collective competence should be expressed in a different set of domains for breaking barriers in practice environment and for achieving 360° professional competence.

D1073

CREATING CLASSROOM INTERACTION BY INTERACTIVE QUESTIONING: AN ACTION RESEARCH

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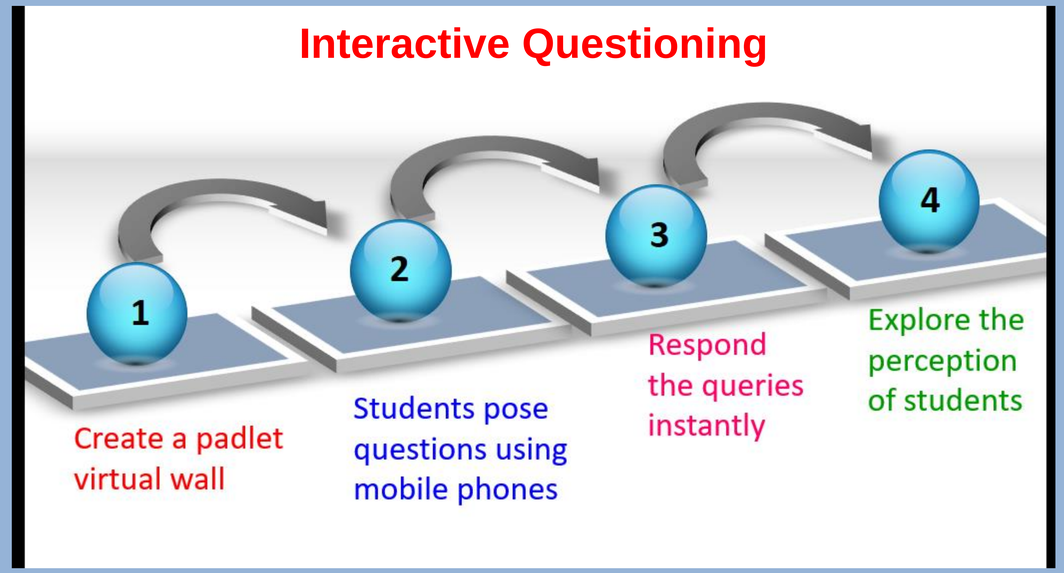
1. Problem encountered

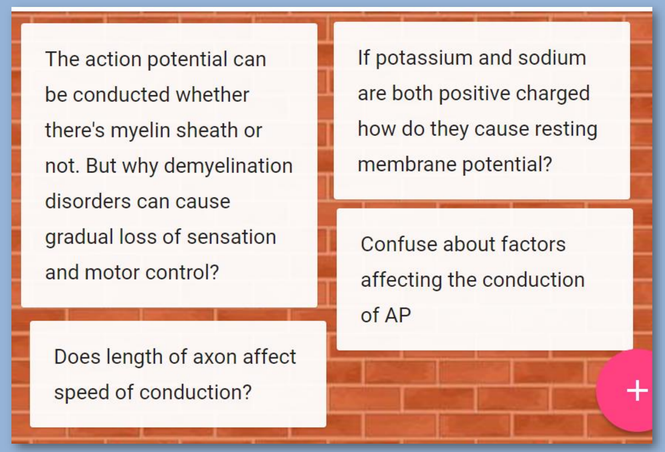
Passive Learning Experience in Didactic Lectures

2. Solution to overcome the problem

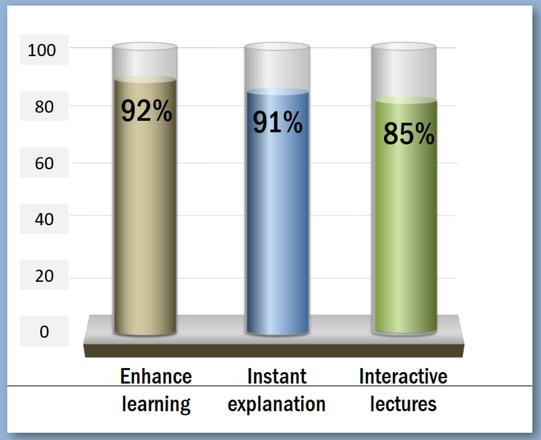


3. Outcomes achieved

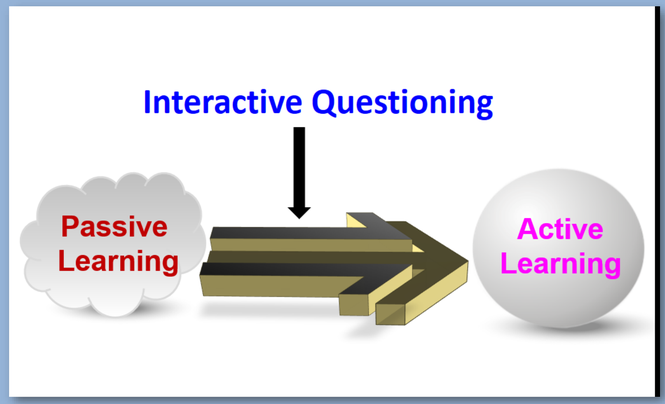
Students' questions

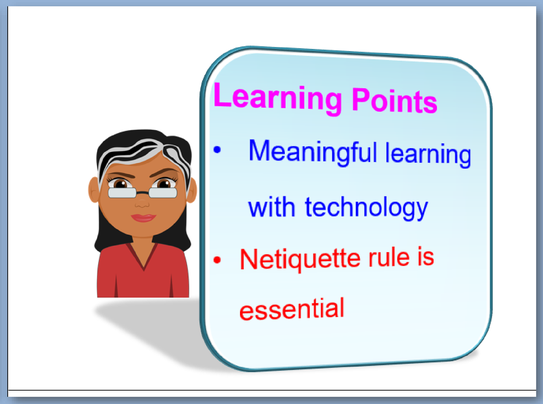


Students' perception



4. Conclusion





UNDERSTANDING AND PRACTICE OF SELF-REGULATED LEARNING IN NEWLY GRADUATED PHYSIOTHERAPISTS In SINGAPORE

D1075

ONG HK[1], Lee SS[2], Yoon S[3], Luo Z[4] and Stevens FC[5]

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Introduction

Self-regulated learning (SRL) is an active process whereby the learners set their learning goals and control their cognition, motivation, and behaviour towards achieving the goals.

Problem statement: SRL is an important learning trait but poorly observed in the NGPTs in SGH.

Aims: This is an empirical study aimed at exploring NGPTs' perceptions and practice of SRL, and to identify the barriers to SRL within our local setting.

Methodology

Semi-structured group interview methodology was used to inductively explore the interpretation of SRL and the learning strategies practiced by NGPTs. Pintrich's social cognitive model of SRL was used as a conceptual framework to further "illuminate and magnify" the practice of SRL

	NGPTs	SPTs
Number	15	15
Interview time (h:m)	3:28	3:56
Work experience (yr)	25 (22-33)	31(28-37)
Male: Female	5:10	5:10
Training	8 overseas	9 Master

HK & SS independently coded the scripts using content analysis approach. Coding scheme and evolving themes were finalized through consensus.

NGPTs-Newly graduated physiotherapist; SPT- Supervisor physiotherapist

Results

Understanding of SRL by NGPTs & SPT

While While the majority of participants correctly understood SRL as learning that was self-initiated, self-paced and self-motivated, multiple misconceptions oversimplification of SRL were discovered.

Learning Strategies of NGPTs

Major theme	Subtheme
Motivation for SRL	Improve patients' outcome Competency assessment
Seeking help	Supervisory support Colleagues or multidisciplinary care team
Experiential learning	Reflective thinking Trial and Error
Time effort management	Prioritization strategy Pacing as a coping strategy Tolerate unknown and ambiguity

Four themes of learning strategy were identified. Comparing with the social cognitive SRL model, there's a need to inculcate more learning strategies especially the self monitoring, self control and self reflective skills

Enablers & Barriers of SRL

Major theme	Barriers	Enablers
System factors	High workload pressure Work structure or organization Work cultures Hierarchy in care delivery	Protected time Emerging learning culture Learning resources
Learner factors	Cognitive overload Lack of interest / attitudes –not aligned Competing priority	
Supervisor factors	Power distance Unwilling supervisors Senior's other responsibilities	Supportive supervisors Co-learning styles Collaborative learning

SRL was perceived as important, yet not widely practiced due to system, personal & supervisor barriers High workload pressure was the most consistently cited obstacle.

SRL should be and could be enhanced, and there is a need to clarify the concept of SRL. The NGPTs, supervisors and hiring organisation need to take joint responsibility in the development of SRL in the NGPTs. 3 sets of recommendations were made for the NGPTs, supervisors and the management level.

D1076

THERAPEUTIC REASONING AND CONTEXT-LEARNING BY SIMULATION: FOR TEACHING ANTIBIOTIC PRESCRIBING

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Introduction

Current teaching of pharmacology to medical undergraduates is done in a 'drug centred' manner. Yet in clinical practice they have to work out from diagnoses to antibiotic. Here comes the concept of therapeutic reasoning.

Objective: Evaluation of student perceptions of teaching therapeutic reasoning in prescription of antibiotics in a simulated context-learning environment.

Drug centered learning in a class room

Patient centered learning in a simulated setting

Methodology

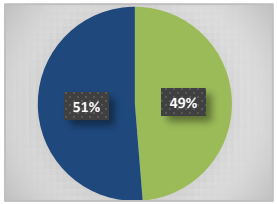
- A group of thirty nine final year medical students, during their professorial paediatric appointment at a Teaching hospital were included in the study, during the period of September to October 2016.

weekly teaching sessions on antibiotic prescribing with doctor –patient role play, using case scenarios.

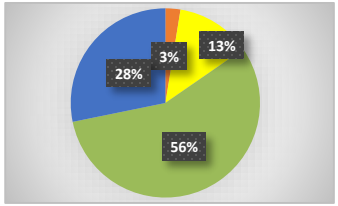
Feedback of performance was given and proper antibiotic selection and prescribing was discussed in relation to each case.

Student perceptions were assessed at the end using a questionnaire in five point Likert scale.

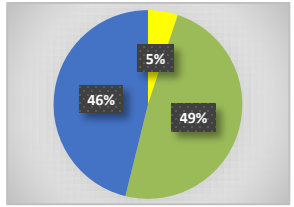
Results: Student feedback on new method of teaching



Improved rational Selection of antibiotics



Improved decision making in clinical setting



Improved prescribing skills

Strongly Disagree		Neutral	Agree
Disagree			Strongly Agree

Feedback for open ended questions:

- Good learning experience
- Better way of understanding the antibiotic selection in practice.

Conclusion

Teaching paediatric antibiotic prescribing with therapeutic reasoning in scenario based role play sessions was accepted well by undergraduates. Hence active learning in a simulated context learning environment should be encouraged.

D1077

Barriers and Challenges towards use of Self-directed learning in ACGMEI multi-cultural pediatric residency Program; The Residents Perspective

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1. Hamad Medical Corporation -Pediatrics Department, Qatar 2. Weill Cornell Medical College-QATAR

BACKGROUND

Self-assessment, self-directed learning (SDL)is one of the cornerstone for the new aura of teaching and learning . it had been Considered as one way to support transition from undergraduate to postgraduate Learning. using the skills of self-directed learning (SDL) by the residents in their training will improve their own professional development; challenges toward implanting (SDL) in the training program will create gap between residents and efficient training ,thus better understanding of those challenges will ensure earlier intervention by the program faculties and directors.

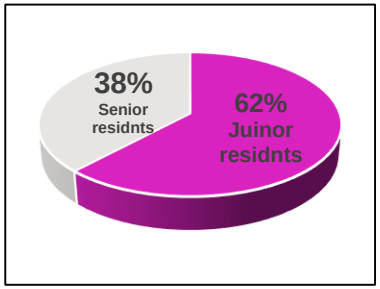
Our aim was to identify barriers to use SDL among pediatrics residents, to explore potential recommendations that can overcome challenges and to explore ideas to ward effective creation of individual learning plan and lifelong learning among residents.

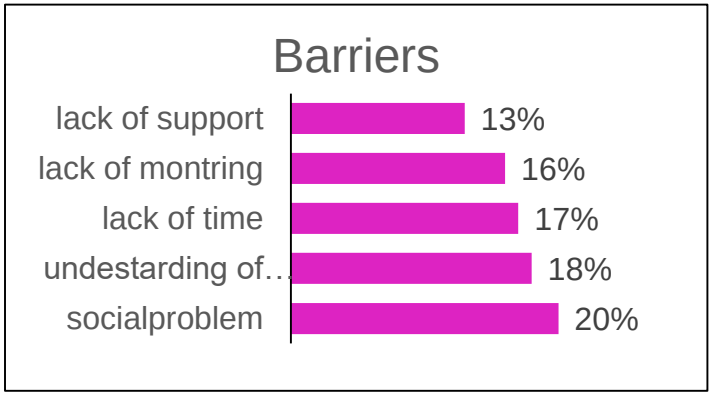
METHODS

Cross-sectional Survey included details of demographics and barriers to Self-Directed Leering use in clinical practice conducted from July -November 2016 among pediatrics residents at Hamad Medical Corporation main tertiary teaching hospital in Qatar.it include details of demographic, perception and attitude toward self-directed learning and challenges that might prevent effective SDL among residents .Questions offered objective answers utilizing 3-point Likert scale

RESULT

Out of 50 respondents,(31) juniors and (19) Seniors. Nearly (90%) perceived lifelong learning as necessary to physician's carrier. Major barrier identified were; Lack of balance between social life and clinical workload (20%), Insufficient understanding of how to construct an effective Individual learning plan (18%), Lack of time to create plan for (ILP) and to apply it (17%),Lack of monitoring (qualified teacher/ adviser) in (ILP (16%), maintaining residency training requirements (16%), Lack of support from residency program (13%)





CONCLUSIONS

Nearly all the residents in this study placed a high value on SDL and perceive it as beneficial for promote education and academic advancement. Our study shed light on the barriers limiting use SDL in ACGMEI program. Residents in training identified several barriers related to their learning level, program level and external environments. allow residents to have protected time and resource for teach SDL, implement Hands-on workshop in their curriculum, use frameworks support ongoing learning; regular meet with advisor to discuss ILPs and evaluate process can overcome these obstacles.

مؤسسة حمد الطبية
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D1078

A TIERED MENTORSHIP FRAMEWORK IN AN ORTHOPAEDIC SURGERY RESIDENCY PROGRAM

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INTRODUCTION

- Mentoring is a crucial element of effective resident medical education. There is however, little data looking at how Orthopaedic residents view mentorship programs.
- In our residency program, a tiered mentorship framework, where both faculty and senior resident mentoring are practiced, has been in place since 2014.
- This study aims to (1) evaluate the orthopaedic surgery residents' perception of faculty and senior resident mentoring and (2) establish factors perceived as being important in mentors and a successful mentoring environment.

METHODOLOGY

- An online survey was administered to all residents in the NHG orthopaedic surgery residency program from R2 to R5 .
- Questions were largely multiple choice questions and scaled-response questions with a few open ended questions. They covered the perception of the mentoring environment, the value of mentoring and the characteristics of an ideal mentor.

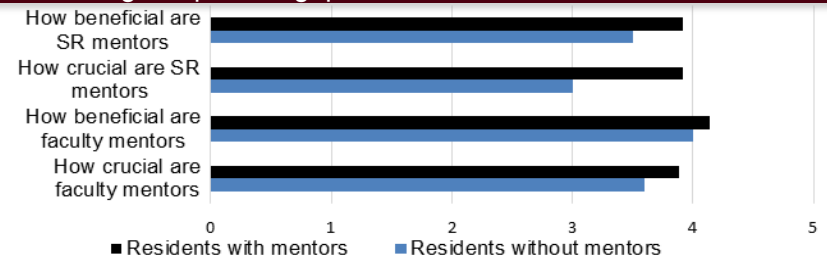
RESULTS

- Survey was administered to 33 residents across the residency batches from R2 to R5, with a response rate of 100%.

Residency year	Number with faculty mentors
R2	6/8 (75%)
R3	11/11 (100%)
R4	3/6 (50%)
R5	8/8 (100%)

Residency year	Number with SR mentors
R2	7/8 (87.5%)
R3	6/11 (54.5%)

- 53.8% (7/13) of junior residents chose their own SR mentors while the rest had their mentors assigned. Of the residents with a faculty mentor, 60.7% (17/28) of them chose their own mentors.



- Respondents with a self-selected mentor also had higher satisfaction levels than those with assigned mentors and felt that their mentor aided them more in supporting their educational experience and in making career decisions.
- Approachability, willingness to share and experience were the top 3 most desired characteristics in an SR mentor with ability to give feedback also highly valued for faculty mentors.
- 66.7% (22/33) of all residents felt that senior resident mentoring should be required in the resident program but only 30.3% (10 of 33) thought that it should be formalised.

DISCUSSION

- Studies have shown that various aspects such as career paths, research output and personal development can be influenced greatly by mentorship. Having tiered mentorship framework in our program was to ensure a holistic approach to mentoring of residents.
- We propose that an ideal mentoring environment should be (1) is tiered (encompassing both faculty as well as senior resident mentoring), (2) a system that allows residents to choose their mentors, and (3) have senior resident mentoring as a required part of residency but on a more informal basis.

PERCEPTION OF EDUCATIONAL ROLES AMONG FACULTY OF A TERTIARY LEVEL HOSPITAL IN SINGAPORE

D1079

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(All the authors have no disclosures to declare.)

Singapore General Hospital
SingHealth

Background & Aims

- Recognition of a teacher's role is part of good teaching culture and reinforces the teacher's commitment to teaching.
- The aim of this study was to evaluate the self-perception of teaching roles of the faculty in a tertiary level teaching hospital in Singapore.

Table 1. Questionnaire used to assess teacher's perceptions of teaching roles

Teacher's Role	Importance to medical school teaching programme					Current personal commitment					Preferred personal future commitment				
	None 1	Little 2	Some 3	Considerable 4	Great 5	None 1	Little 2	Some 3	Considerable 4	Great 5	None 1	Little 2	Some 3	Considerable 4	Great 5
Information provider 1 Lecturer in classroom setting															
2 Teacher in clinical or practical class setting															
Role model 3 On-the-job role model, (eg in clinics, ward rounds, etc)															
4 Role model in the teaching setting															
Facilitator 5 Mentor, personal adviser or tutor to a student or group of students															
6 Learning facilitator, eg supporting students' learning in problem based learning small groups in the laboratory, in the integrated practical class sessions or in the clinical setting															
Examiner 7 Planning or participating in formal examinations of students															
8 Curriculum evaluator - evaluation of the teaching programme and the teachers															
Planner 9 Curriculum planner, participating in overall planning of the curriculum through, for example, curriculum planning committees such as the Undergraduate Medical Education Committee															
10 Course organiser, responsibility for planning and implementing a specific course within the curriculum. This may, for example, relate to one system or one theme, or to a special study module.															
Resource developer 11 Production of study guides to support the students' learning in the course															
12 Developing learning resource materials in the form of computer programmes, videotapes or print which can be used as adjuncts to the lectures and other sessions.															

Methods

- An electronic survey was sent to the faculty of the Department of Gastroenterology & Hepatology, Singapore General Hospital to evaluate their perceptions of importance, current involvement and future intended involvement in clinical education.
- The questionnaire used was a validated questionnaire from Harden & Crosby 2000 (Table 1) evaluating the 12 roles of a teacher.

Figure 1. Mean values of faculty's current contribution to various teaching roles

Information provider		***Examiner***	
Lecturer in a classroom setting (>20 students)	2.60	Planning or participating in formal student examinations	2.63
Teacher in a small group setting (<20 students)	3.43	Participating in evaluation of the teaching program	2.43
Bedside teaching or teaching during ward rounds	3.73		
Role model		***Planner***	
On-the-job role model (clinics, ward rounds, etc)	3.43	Participating in planning of the curriculum	2.03
Role mode in the teaching setting (educational role model)	3.29	Responsible for planning and implementing a specific course within the curriculum	2.23
Facilitator		***Resource developer***	
Mentor or personal advisor to students	3.03	Involved in production of study guides to support student learning	1.80
Learning facilitator (e.g. supporting learners in problem-based setting)	2.67	Involved in developing learning resource materials	2.03

Results

- 31/35 faculty completed the survey (response rate 88.6%).
- 29% were junior faculty (Senior Residents) and 71% were senior faculty.
- Roles of clinical teacher, role model and mentor were ranked as most important with the highest current involvement (Fig 1).
- Faculty reported willingness to contribute more in their future involvement in all roles (Fig 2).
- Qualitative feedback identified time, recognition and clinical workload as barriers to teaching (Fig 3).

Figure 2. Faculty's perception of importance, current and future contributions to teaching roles

	Importance	Current	Future
Information provider			
Lecturer in a classroom setting (>20 students)	3.43	2.60	2.83
Teacher in a small group setting (<20 students)	4.43	3.43	3.79
Bedside teaching or teaching during ward rounds	4.52	3.73	3.90
Role model			
On-the-job role model (clinics, ward rounds, etc)	4.21	3.43	3.87
Role mode in the teaching setting (educational role model)	4.25	3.29	3.64
Facilitator			
Mentor or personal advisor to students	4.00	3.03	3.37
Learning facilitator (e.g. supporting learners in problem-based setting)	3.80	2.67	3.07
Examiner			
Planning or participating in formal student examinations	3.43	2.63	2.93
Participating in evaluation of the teaching program	3.60	2.43	2.90
Planner			
Participating in planning of the curriculum	3.77	2.03	2.87
Responsible for planning and implementing a specific course within the curriculum	3.27	2.23	2.80
Resource developer			
Involved in production of study guides to support student learning	3.23	1.80	2.30
Involved in developing learning resource materials	3.33	2.03	2.33

Figure 3. Narrative comments from survey participants

"Time is always the limiting factor in determining how much teaching we can conduct"

"Teaching is very important; unfortunately recognition for teaching is hard to quantify. Time needs to be set aside for teaching and this is hard to come by"

"(I am) disillusioned as a teacher because my perception is that none of the time spent is recognised. My clinical workload is similar to colleagues without formal appointments. Why am I burning myself out?"

Conclusion

- The roles of clinical teacher, role model and mentor are the most important and most relevant to the clinical faculty
- While most faculty are willing to contribute a larger role in education, they require protected time and recognition of their teaching roles.
- The results of this study provide a direction for the institution's faculty development efforts.

References

Harden RM and Crosby JR (2000). AMEE Education Guide No. 20: The good teacher is more than a lecturer. *Medical Teacher*, 22(4), 334-337

E-Poster
D1080

Gamification of Medical Education

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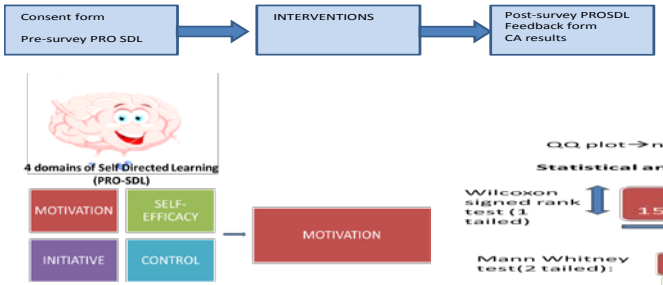
INTRODUCTION

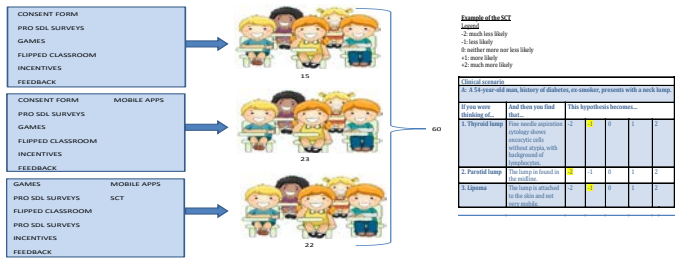
We want to create a Medical education system that encourages active participation in class for a fun learning experience.

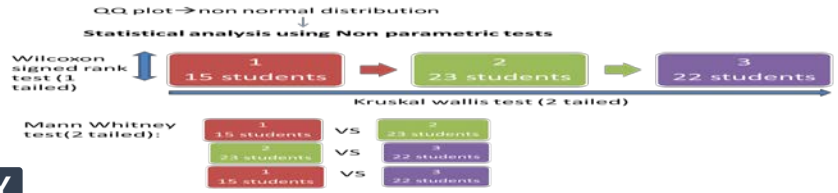
Objective: This study aims to encourage students to do Self-Directed Learning, through the use of appropriate interventions. In particular, gamification, to create a relaxed environment for an effective and enjoyable learning experience.

Hypothesis: Interventions will increase students' MOTIVATION to do SELF DIRECTED LEARNING.

MATERIALS AND METHODS



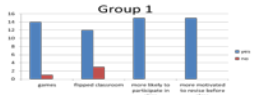


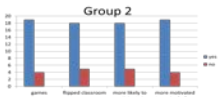


DISCUSSION AND SUMMARY

-There were inconclusive evidence that gamification works to increase motivation.
-Nonetheless, participants enjoyed the process, and we have garnered mostly positive feedback.
-CA results of participants performed better than cohort.

RESULTS





	Group 1	cohort		Group 2	cohort
CA1 overall score	79.06	76.07	CA2 overall score	74.24	73.2
CA1 anatomy score	84.59	80.9	CA2 anatomy score	82.1	80.3
winner	✓		winner	✓	

FEEDBACK

Quotes from students:

"I thought the games really made class participation more enjoyable and motivated me to revise beforehand so I could contribute."

"Introduction of "games" and "fun" into tutorial sessions create a more relaxed environment, enabling more lively and honest discussions to take place."

"The student presentations were particularly useful for me and motivated me to find out more about the segment I was presenting on. This is due to the fact that I wanted to give a good and useful presentation for my classmates."

"The student presentations were useful both in self- directed learning and learning from my peers." , "Lessons were very interactive"

D1081

Awareness of TMD & Orofacial Pain among Dental Undergraduates & Postgraduates

Tan HH, Wong ML, Sim YF | Faculty of Dentistry, National University of Singapore.

Introduction

Temporomandibular disorders (TMD) are a collection of painful musculoskeletal conditions characterised by chronic pain in the TMJ and/or masticatory muscles, limited mandibular range of motion and joint sound. Chronic TMD is a common orofacial pain condition affecting 6.6 - 10% of adults[1]. It is therefore important to incorporate TMD – its diagnosis and management in the dental undergraduate (UG) and postgraduate (PG) curricula to build their competencies in managing such conditions after graduation.

Aims

- Identify existing knowledge gaps related to TMD and chronic orofacial pain and
- Explore a preferred mode of delivering a TMD curriculum for the PGs and UGs.

The findings will facilitate the development of a customised and learner-centred curriculum on TMD at the PG and UG levels.

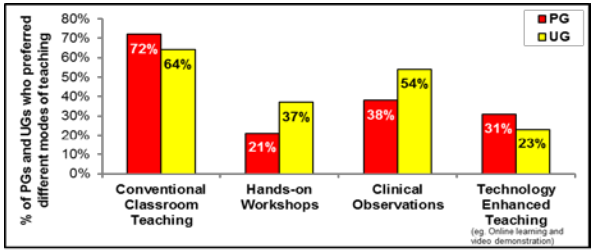
Methodology

A self-administered 35-item questionnaire (*Le Resche et al*[2]) was used to gather data on possible knowledge gaps.

The questionnaire was administered among PGs and 2nd, 3rd and final-year UGs. Survey responses were scored for agreement with expert opinions[2]. Kruskal-Wallis test was used to compare the scores between the groups of students. The level of significance was set at $p<0.05$. PGs and UGs were also asked to indicate their preferred mode of receiving the teaching for TMD.

Results

The response rate for PGs was 58% (N = 29) and that for UGs was 62% (N = 101).



Respondents' Preference for Different Modes of Teaching

Domain	No. of items	Post Graduate Residents (n=29)		Year 4 Undergraduates (n=30)		Year 3 Undergraduates (n=37)		Year 2 Undergraduates (n=34)		P-value
		Median Score	(IQR)	Median Score	(IQR)	Median Score	(IQR)	Median Score	(IQR)	
Psychophysiology	9	7	(1)	5	(2)	5	(3)	6	(3)	0.003
Psychiatric Disorders	4	3	(2)	3	(2)	1	(2)	2	(2)	0.006
Chronic Pain	10	5	(4)	4	(2)	3	(3)	4	(2)	0.243
Pathophysiology	12	6	(5)	1	(1)	2	(2)	3	(2)	<0.001
Overall	35	19	(7)	13	(5)	13	(6)	14.5	(6)	<0.001

Higher scores = Better Knowledge

Significant differences ($p < 0.05$) in knowledge between PGs and UGs were noted in the Psychophysiology; Psychiatric Disorders and Pathophysiology domains. PGs showed higher concordance with expert opinions than UGs. UGs scored low for the Pathophysiology domain indicating knowledge gaps related to TMD aetiology, diagnosis and treatment. Knowledge gaps related to causes, diagnosis and appropriate treatment of chronic pain conditions were also noted.

Conclusion

TMD and orofacial pain is a challenging topic, even for PGs. This underscores the need to initiate the teaching in the UG curriculum to address the knowledge gaps early in their training. Conventional teaching methods appear to be preferred by the PGs and UGs for this topic.

[1]*Von Korff, et al An epidemiologic comparison of pain complaints. Pain. 1988 Feb; 32(2): 173-83.*

[2]*Le Resche L, et al. Temporomandibular disorders: a survey of dentists' knowledge and beliefs. J AM Dent Assoc 1993; 124(5): 90-94, 97-106.*

D1082

An Attempt to Develop Teaching Materials Using Virtual Wards in Nursing Education

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Introduction

In recent years, e-learning utilizing multimedia has been introduced to education in the fields of medicine, nursing, and welfare at many medical universities and hospitals. By employing ICT, we attempted efficient knowledge learning, knowledge establishment, and the acquisition of medical and nursing skills. Results showed that students have obtained a high learning effect. However, creating teaching materials using ICT is difficult for instructors who are not familiar with ICT, and it requires a large investment and expenses to prepare environmental installation for information technology on campus. Now, we devised a relatively inexpensive ICT teaching material

Methodology

It is a virtual ward that use a computer software for architectural design “3D My Home Designer Pro8 (Megasoft)” which runs on Windows8 (Microsoft). This virtual ward was projected on a screen for students.
The teaching material we have created are: 1) videos showing differences the location of nurse station and hospital rooms can create in general wards, 2) videos showing possible view of patients who have reduced eyesight, 3) videos of hospital rooms and hallways in wards shown in different colors, 4) images of hospital rooms with photo images attached on ceilings, and 5) videos of the ward Nightingale had suggested.

Results

The above result showed that it is effective in advancing students’ thinking power on nursing to use ICT in nursing education.

Conclusion

From the above, we can see that the education utilizing virtual ward created by inexpensive ICT enable us to prepare teaching material that take, not just a single case but also distinctive nature of each ward, into account by appropriately reflecting specific arrangements and usage pattern of wards. Therefore, virtual wards allow students to train their mind towards assistance activity in nursing, and thus is an effective system in supporting students to improve their practical nursing ability.

D1083

VIRTUAL PATIENTS IN MASSIVE OPEN ONLINE COURSES: A RANDOMIZED CONTROLLED TRIAL EXPLORING LEARNER INTERACTIONS PATTERNS AND DROP-OUT BEHAVIOURS

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INTRODUCTION

Virtual Patients (VPs) provide active learning opportunities to develop clinical reasoning skills. Massive Open Online Courses (MOOCs) is a proposed approach to provide large scale training, but significant drop-out rate has been problematic. Incorporating VPs into MOOCs could be an approach to increase engagement and decrease drop-out from MOOCs. The aim of this study was to better understand VPs as a learning activity in MOOCs by investigating 1) learner drop-out patterns in VPs 2) the influence VP design has on drop-out rates.

METHODS

378 participants were randomised into two groups. (Group A n=190; Group B n=188). Both groups interacted with a VP on bladder cancer, but differed in the VP design. Group A interacted with branched VP while Group B interacted with linear VP. Data on node progression and VP attempts was analysed.

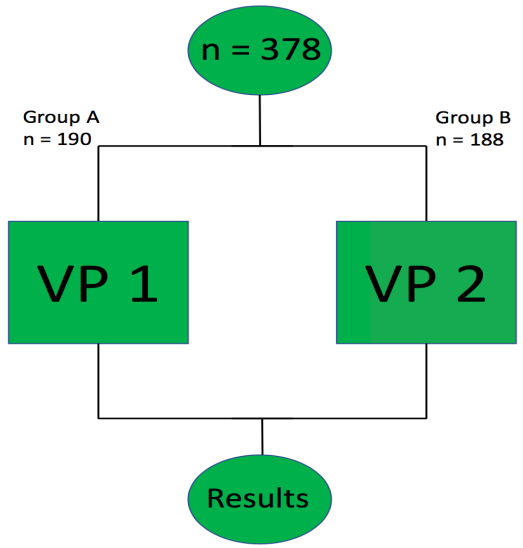

Figure 1: Study design of RCT

RESULTS

In general, drop-out rate from VPs was at 19%. Eight different interaction patterns were identified from VPs. Most participants either completed the VP in 1 linear attempt, 1 loop attempt or dropped out without starting the VP. We noted a statistically significant higher drop-out rate in the branched VP compared to the linear VP.

Learner Interaction Patterns			Total (n = 378)
Dropout	1 Attempt	Doesn't Start	51
		Start	14
	>1 Attempt	Doesn't Start	3
		Start	3
Completed	1 Attempt	Linear	209
		Loop	46
	>1 Attempt	Linear	36
		Loop	16

CONCLUSION

By mapping observed interaction patterns to individual learner we can ntify learning patterns as an initial step toward personalised learning. The design of VPs in MOOCs seems to have an impact on drop-out, a factor to take into consideration when designing a VP.

D 1084

DO LINE- GROUP REINFORCE LEARNING IN SURGICAL PROGRAM

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Introduction

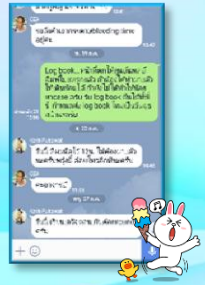
LINE is a freeware app for instant communication on electronic devices that most popular in Thailand. Medical students and course instructors are all familiar to LINE. We think that multiple useful feature in LINE may support learning capacity for medical students

Methodology

We set two LINE groups at the beginning of the course

1. **surgery yrs 4 :** We invited instructors , students and course secretaries and provide manual guide for surgical program, PPT of topics, schedules, appointment ,interesting cases and procedures in this group

2. **Surgery yrs 4 instructor**. Only instructors and course secretaries were invited. Student concealing data were provided in this



After the course was finished , all 24 students were evaluate outcomes of LINE groups by questionaire - base for how often and how much usefullness of detail activities : study manual guide ,study PPT topics,prepare schedule-program, make an appointment ,study interesting case and study procedure

Results

Frequence of activities in LINE groups

Frequences scale	Study manual guide	Study PPT topics	Prepare schedule program	Make an appointment	Study interesting case	study procedure
1 [least]	3.4	3.4	0	3.4	0	3.4
2	13.8	10.3	6.9	6.9	20.7	24.1
3	27.6	31.0	24.1	17.2	51.7	44.8
4	37.9	411.4	24.1	24.1	13.8	13.8
5 [most]	17.2	13.8	44.8	48.3	13.8	13.8

Usefulness of activities in LINE groups

scale	Study manual guide	Study PPT topics	Prepare schedule program	Make an appointment	Study interesting case	study procedure
1 [least]	0	0	0	0	0	0
2	13.8	10.3	13.8	3.4	13.8	24.1
3	13.8	20.7	10.3	20.7	27.6	17.2
4	31.0	31.0	24.1	20.7	31.0	37.9
5 [most]	41.4	37.9	51.7	55.2	27.6	20.7

75 % of Instructors, 100% of students and 100% of course secretaries join in Line- groups.

Make an appointment is the most frequence and usefullness activity in Line- group

70% of students studied data in Line-group before class lesson

Students also have Line-group that invite only students.

Conclusion

Even though only 75 % of instructors join Line-group,It still have ability to reinforce learning in surgical program. If we can structure Line-group by policy it may work more.. Numbers of interesting cases and procedures were provide in this Line-group

Do Viva voce examinations serve as an effective assessment strategy?

D1085

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[1] Medical Oncology, National Cancer Centre Singapore, [2] Division of Cancer Education , National Cancer Centre Singapore

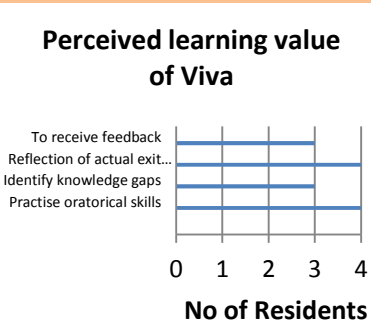
Introduction (14 Arial)

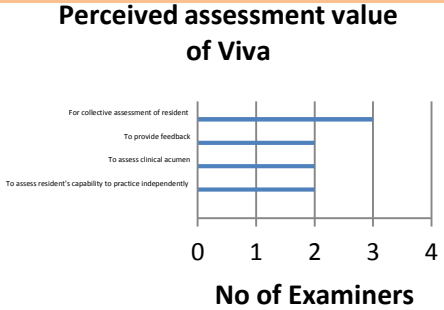
Viva voce examinations have been part of the medical oncology exit examinations in Singapore. In 2017, the format of the viva voce examination was modified in order to standardise the cases and discussion points to ensure fairness and better reliability of the examination process.

Methodology (14 Arial)

A mock viva examination was held with the final year senior residents who were due to sit for the exit exams in July 2017 in order to familiarize the examiners and the residents of the new format. A survey was held after the mock and the actual examination in order to gain an understanding of the perceived assessment value of the viva voce examination.

Results (14 Arial)





Residents' feedback

"Stimulates actual exam experience"
"Helps to assess candidate's thought process and how to deal with grey areas"
"To assess if one can verbalise one's specaialy opinion in a cogent manner"
" It is useful but should not be the only assessment tool"

Examiners' feedback

"Able to understand the challenges that the candidate face and struggle with"
"Candidates are forced to perform under pressure which may not be fair"
" Can have a good overall feel of a candidate's clinical capabilities

Conclusion (14 Arial)

Viva voce examinations are an important assessment tool. They serve as a good judgement of a resident's overall clinical acumen.

ID: 1086

NOVICE MENTORING IN POSTGRADUATE MEDICAL TRAINING – A THEMATIC REVIEW

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[1]Yong Loo Lin School of Medicine,National University of Singapore, [2]Singapore General hospital, [3]Department of Family Medicine, National University Hospital, [4]Division of Palliative Medicine, National Cancer Centre Singapore[4], [5]Division of Medical Oncology, National Cancer Centre Singapore, [6]Duke-NUS Graduate Medical School

[7]Centre for Biomedical Ethics, National University of Singapore

Aims

The term**: novice mentoring** refers to the mentoring between a senior and junior clinician.

This review seeks to identify and set out evidenced based guidelines on senior clinicians mentoring junior doctors in Singapore, to address growing concerns about the variable nature of mentoring experiences and the potential for negative mentoring.

Methodology

5 authors carried out independent literature searches evaluating accounts of mentoring in postgraduate medicine published in English or had English translations between 1st January 2000 to 31st December using PubMed, ERIC, Cochrane Database of Systematic Reviews, Web of Science, CINAHL and Embase databases.

Results

18 articles were included and thematically analysed. A Mentoring Framework as shown is based on the identification of core elements.

Conclusion

Novice mentoring requires a framework for an effective program, particularly in the face of growing use of blended support that add variability in mentoring practice. It allows for adaptations and novel inclusions.

A1087

DEVELOPING A HOLISTIC STUDENT SUPPORT INFRASTRUCTURE:THE LKCMedicine HOUSE SYSTEM

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[1]Faculty of Medicine, Imperial College London, UK, [2] Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Background and Aims

The Lee Kong Chian School of Medicine established its innovative House System for medical students in 2013 to create a holistic medical student welfare, pastoral and progression support system that;

- Facilitates students' transition into, through and from the undergraduate MBBS programme,
- Provides continuity through a consistent point of contact and support for each student throughout their studies,
- Facilitates students' intellectual, emotional, psychological and professional development,
- Supports the understanding of the profession of medicine as a science and an art,
- Facilitates effective and consistent mentoring, coaching and role-modelling from experienced clinicians and scientists (House Tutors),
- Facilitates a sense of belonging, community and support among students, and between students and assigned House Tutors,
- Picks up early alerts so that issues can be addressed before they escalate,
- Is integrated in a coherent and cohesive manner to the students' programme, curriculum and other progression monitoring processes,
- Incorporates students' input in shaping the support system to best meet students' needs and create a sense of ownership by students.

William Osler

Lim Boon Keng

Marie-Curie

Wu Lien-Teh

Alexander Fleming

Key Features of the House System

- Five Houses, each with a Senior House Tutor and additional House tutors from medical and scientific disciplines.
- House Tutors are elected by interview; positions are funded and regular training is provided.
- Ratio of 1 House Tutor : 20 students across the programme.
- Regular contact through individual, year level and whole House meetings that span academic, professional and social contexts.
- NTU "buddy system" of peer supporters integrated into the Houses.
- The House System's evolution has been shaped by students and Tutors and closely aligns with MedSoc and Student Union.
- The five "House Rooms" provide physical space for activities and relationship building.
- There is high buy-in and satisfaction from students and House Tutors.
- It can be challenging to ring-fence the time needed for the various meetings with House Tutors and other House activities.

Conclusion

The House system has proven to be a robust system that allows multiple levels of support, guidance and inspiration for the students, and meets the aims for which it was established.

D 1088

ANALYSIS OF STANDARDISED PATIENT RATINGS AND EXAMINER PASS-FAIL MARKS OF HISTORY TAKING IN 4 SPECIALITIES

[1] **Wong C**, [1] Au-Doung P, [1] Wong SYS, [2] Nelson T

[1] Public Health and Primary Care, Medicine, the Chinese University of Hong Kong, Hong Kong [2] Paediatrics , Medicine, the Chinese University of Hong Kong, Hong Kong

	1. ECFMG Clinical Skills Assessment	2. Ratings of Standardised Patients (SPs)
Back-ground	- Communication competencies best evaluated by persons trained to be patients (SPs)	- Widely used in clinical examinations - Seldom as formal grade assessments
Aims	- To explore correlation of SP assessment with examiner marks - To explore usefulness of SP marks for assessment purposes, e.g. in history taking.	
Methodology		
Students	- 218 students in Paediatrics, Psychiatry,Family Medicine and Obstetrics and Gynaecology examined.	
Examiners	- 2 examiners to rate the history taking stations from pass to excellent using:Fail≤19, pass 20-22, Fair 23-27, Good 28-31 and Excellent≥32. Max: 40	
SPs	-Chinese communication skills rating tool with 4 domains: empathy & respect, verbal communication, non-verbal communication and entrustable care, employing a six-point Likert scale (0-5) -SPs' total mark multiplied by two to reach maximum possible parity with the examiners (5x4x2=40)	

Results

	PAED	PSY	FAM	O & G
SP Grading mean ± s.d.	14.83±2.42	15.74±2.96	16.65±2.43	17.69±2.15
Correlation with Students				
FAIL	r=-0.091 p=0.845 to -0.270 p=0.558	r=0.615 p=0.269 to 0.712 p=0.112	N/A	N/A
EXCELLENT	r=0.113 p=0.425 to 0.177 p=0.209	r=0.114 p=0.347 to 0.169 p=0.162	r=0.207 p=0.063 to 0.243 p=0.028	**r=0.238 p=0.023 to 0.290 p=0.005**

Conclusion

Overall poor correlation in the relationship between SPs' and examiners' scores in identifying fail and excellent cases. Opportunity to incorporate SPs assessment to summative assessment remains, as they can provide perspective from the patients' angle.

D1090

Inspired medical professionalism by role model doctrine

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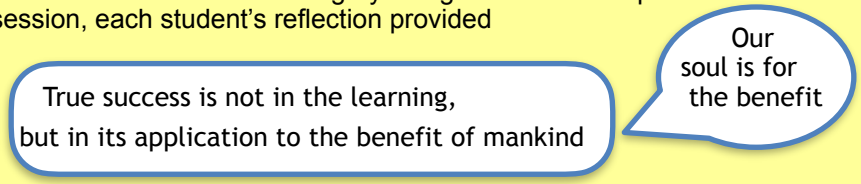
[1]Department Pediatric , Medical Education center Songkhla hospital, [2] Department Pediatric, Medical Institution, Country

Introduction

Teaching medical professionalism through “role model” and “ personal reflection guided by faculty “are widely held as the most effective technique for developing professionalism in medical students. In the southern part of Thailand where there are vastly different in culture, belief, Teaching these difference background student for professionalism is seem unreal.

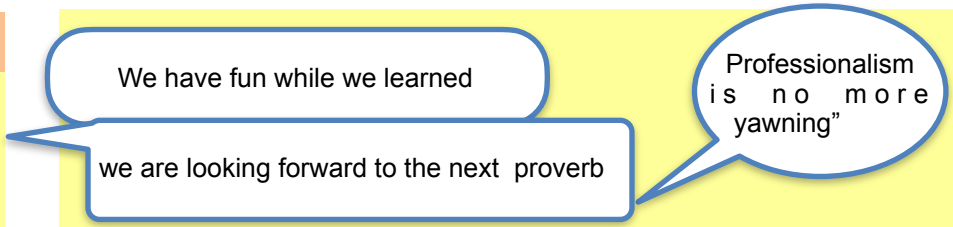
Methodology

19 doctrines from Prince Mahidol Adulyadej, the father of modern Thai medicine and public health, were selected and matched with standard professionalism. Groups of students were assigned to study in depth and presented their understanding by using various techniques. At the end of a session, each student’s reflection provided



Results

All students show more enthusiasm than the previous teaching method, case-scenario discussion. “We have fun while we learned””Professionalism is no more yawning” “I love the wrap-up session cause I have opportunities to see inside myself” “ we are looking forward to the next proverb.



Discussion

Teaching medical students to be professionalized is part of the curriculum. The specifies of sequence depth, details and the nature of how to integrate professionalism with other curriculum are individualized. The earlier approach the earlier students realized. These understanding and inspiring professional manners may result in the better behavior practicing doctors.

Conclusion

Teaching professionalism is diversity and depending on various cultural sensitivities and believes. It is the medical teacher's responsibility for the society to organize the curriculum implanting professionalism into every doctor. Using the doctrines from the well-known Role Model along with reflection under mentors supervision have affected the PNU medical students professionalism

Take home messages

Teaching professionalism is diversity depending on various cultural sensitivities and belief. Using “Role Model” or “Thy doctrines ” along with “Reflection” can inspire medical students and will implant the best performance into them to be a good practicing doctor in the future.

A THEMATIC REVIEW OF SUPERVISION IN INTERNAL MEDICINE

D1091

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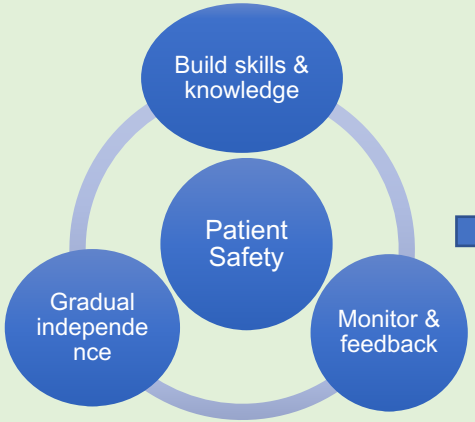
Background & Aims

Supervision is an important component of postgraduate training in Internal Medicine. Yet, it remains poorly defined with few established guidelines. This review aims to define supervision to better guide design and oversight in future programs.

Methodology

A literature search was conducted on English-language publications between 1 January 2000 to 31 December 2015 from databases including PsycINFO, EMBASE, Pub Med, ERIC and MEDLINE Ovid. Thematic analysis was carried out to form a narrative on supervision.

Results & Discussion



Goals of Supervision

- Professional, formal evaluative process
- Educational process, inclusive of a mentoring role
- Within an organizationally supported program

A Supervisory Relationship

Supervisee

- Recognize limitations and seeks help
- Confidence in clinical work
- Building relationships
- *Lost of decision-making autonomy*

Supervisor

- Provide direction
- Improve patient care
- Meet specific training needs
- *Time consuming*

Conclusion

Supervision differs from mentoring in that its main aims are targeted towards patient safety and residents' professional development. The relationship in supervision is a complex and evolving one, with nurturing yet evaluative roles. There is a need for a structure, proper training and resources in supervision programmes. Effective 'matching' of supervisor to supervisee would also enhance the effectiveness of supervision.

D1092

USING EYE TRACKING TO EVALUATE STUDENTS' NEEDS AND USABILITY OF A VISUALISED CURRICULUM

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[1] Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Background

A new curriculum map, CLUE (CurricuLUm Explorer) was developed at LKCMedicine.
This study aims to evaluate the usability of CLUE, explore students' needs, using a novel approach – eye tracking (ET).

Methods

Pre- and post-questionnaires, retrospective think-aloud (RTA), and ET data were collected.
The gaze video-RTA data were analysed for usability problems.

Results

Figure 2: Students' needs

Figure 1: Interface of CLUE (CurricuLUm Explorer)

Results (cont'd)

A total of 56 issues were identified – 3 were content related, and 53 were usability issues. The majority of usability issues were layout issues.

	Number of Usability Issues
Layout	25
Terminology	15
Data Entry	2
Comprehensiveness	6
Feedback	5

Table1: Types of usability issues identified

Conclusion

CLUE, although it met students' needs, required some usability improvements.
ET proved to be invaluable in providing insight into user behaviour. However, it must be triangulated with other traditional usability methods.
This study was able to engage student of curriculum evaluation and development.

Acknowledgements

We thank Dr Claire Ann Canning for her guidance and mentorship in this project. We also thank Objective Experience for loaning the Tobii X2-30.

D1093

ENHANCED TRANSITION FRAMEWORK FOR LOCAL-TRAINED NEW GRADUATES IN TTSH: AIMING TOWARDS EARLY CONFIRMATION FOR NURSES

Mary Leong Jan Mui, Peh Sue Cheng, Chee Pick Fong
Nursing Service, TTSH, Singapore

Introduction

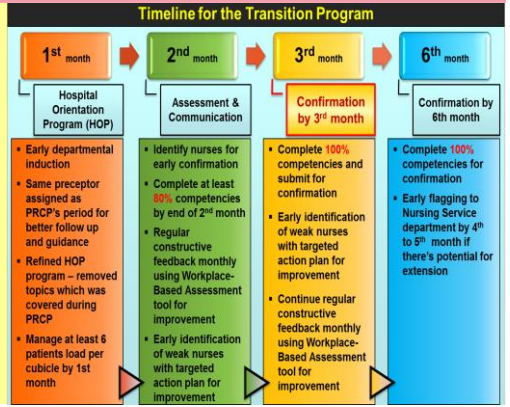
Background: Local-trained student nurses underwent 3 months of Pre-Registration Consolidation Practice (PRCP) in their final posting and another 6 months of probation when graduated. Numerous resources and efforts were put in place to ensure a smooth transition to practice for the graduates during the probation period. Nonetheless, the result was less than satisfactory. Therefore, there is a need to review and examine the induction and transition of new nurses into the organisation (Hoffart, Waddell, & Young, 2011; Lee, Hsu, Li, & Sloan, 2013).

Aims: An orientation programme with enhanced transition framework was developed to improve early confirmation rate through strengthening of clinical supervision and waste reduction.

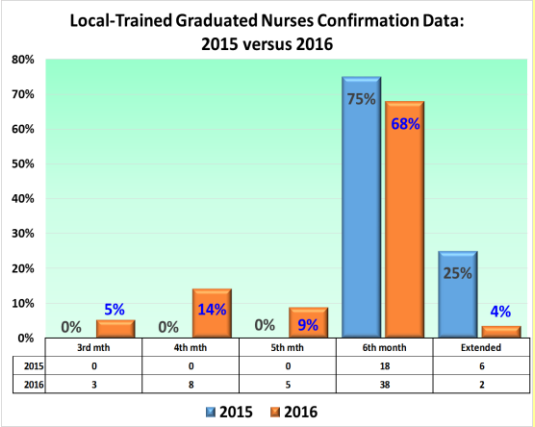
Methodology

A total of 56 local-trained graduates in inpatient general wards were enrolled to the program in 2016 and it included the following strategies:

- Early department induction.
- Same preceptor as PRCP for better follow up and guidance.
- Remove repeated topics covered during PRCP in Hospital Orientation Program (HOP) for more clinical hours for transition practice.
- Regular constructive feedback (monthly) using workplace-based assessment tool for improvement.
- Early identification of weak nurses for targeted action plan for improvement.



Results



Results:
The confirmation data for local-trained nurses posted to inpatient wards enrolled to the programme was analysed and compared with past year's results. It showed that 27% of the nurses were confirmed by 3rd to 5th month of their probation period. Only 4% of the nurses enrolled in the programme extended their probation as compared to 25% in the previous year. The findings were encouraging and promising.

Conclusion

The data implies that the enhanced transition programme strategies were effective to improve early confirmation, reduce re-training and increase productivity of graduate nurses. The transition framework serves as a future guide for nursing management towards early confirmation of local-trained new nurses.

References

Hoffart, N., Waddell, A., & Young, M. B. (2011). A model of new nurse transition. *Journal of Professional Nursing*, *27*(6), 334-343.

Lee, H. Y., Hsu, M. T., Li, P. L., & Sloan, R. S. (2013). 'Struggling to be an insider': a phenomenological design of new nurses' transition. *Journal of Clinical Nursing, 22*(5-6), 789-797.

D1094

DEVELOPMENT OF TEACHERS' INSTRUCTIONAL COMPETENCE IN TEAM-BASED LEARNING USING CHILDREN'S FAIRY TALE IN TEACHING DEMONSTRATION

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Background and Aims

Team-based learning (TBL) has been incorporated into Kaohsiung Medical University since 2012. Teaching demonstration is seldom used in faculty training for medical teachers, not to mention designing a demonstration with children's fairy tale. This study aims to report the creative TBL teaching demonstration and instructional development of teacher participants.

Methods

Thirty-three teachers participated in the study by attending the whole teaching demonstration and responding to a survey with questions indicating what instructional competence they have developed. The teaching demonstration was developed with 15 IRAT (focusing on the story line), 5 GRAT (physiology, ophthalmology and history of children's literature), and 3 application activities (toxicology and puzzle game) questions.

Results

More than 80% participants developed instructional competence in applying multiple instructional approaches for students' thinking, discussion, and self-directed learning. Teacher participants advanced their instructional competence through the TBL teaching demonstration. The developed instructional competence fits well to the core development of students' learning skills expected from TBL class. Follow-up investigation is needed with the teacher participants on how they practice the learned instructional competence into their own TBL classes.

Conclusion

Use of children's fairy tale "Snow White" helped participants feel at ease and fun to develop instructional competence. It helps participants understand what essential components and skills a TBL class requires. The mixture of group members from different disciplines give participants integrative viewpoints of our medical curriculum in reality. Integrating creative element into designing faculty training is important, which could enhance the effectiveness of teacher participants' instructional competence. By inspiring teachers' enthusiasm with familiar reading materials such as children's fairy tales, their motivation of developing TBL instructional skills could be stimulated and then better instructional practices could be anticipated.

D1095

Oral hygienists' experiences of a blended learning course in local anaesthesia

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UNIVERSITY of the WESTERN CAPE

Introduction

The scope of practice of oral hygienists (OHs) in South Africa has been revised. Qualified OHs therefore returned for further education and training.

Aim: to determine oral hygienists' experiences of a blended learning course in local anaesthesia (LA); and perceived competence to administer LA.

Methodology

Study design: Descriptive, cross-sectional.

Study population: Qualified OHs enrolled for a continuous education course.

A blended learning approach for the course was adopted.

Data collection: 2 self-administered questionnaires

Data was entered and analysed in SPSS®. Open ended questions were thematically analysed.

Results

Twenty-five female participants (mean age 44 years – SD 6.9). The majority (70.8%) had English as a 2nd language. All had a Diploma in Oral Hygiene obtained between 1980 and 2011.

Table 1: Opinions of the course (positives and concerns)

	Related to academic component	Related to clinical component
Positives	• The online assessment prior to contact session assisted in preparation for the course • Lecturer availability, expertise, and interest in teaching students • Explanation and demonstrations with adequate information • Sequencing of lectures followed by practical application in the clinics • Use of video clips and access to video-clips in own time	Participants' perception regarding: • confidence in administering LA in clinical environment: 84% Definitely/Yes ; 16 % Not sure • Theoretical knowledge to administer LA - 100% Definitely/Yes • clinical skill to perform procedure : 76% Definitely/Yes; 24 % Not sure
Concerns	• Anxiety related to: studying after a long break; English medium instruction • Insufficient time and opportunity to practise the skill and integrate theory with practice • Found the simulator 'buzzer model' the least useful learning aid	Anxiety related to: • identifying anatomical landmarks; • inflicting injury to patients

Conclusions and Recommendations

Blended learning was positively perceived by participants. Adults learners enjoyed the range of learning activities used, with particular reference to the hands-on approach of the clinical teachers. Not all participants felt confident and/or competent to practice LA immediately after the contact session. A model for a course to teach LA to adult learners is proposed.

Reference:

Lundgren BS and Houseman CA. **Continuing competence in selected health care professions.** J Allied Health. 2002 Winter;31(4):232-40.

New approach in developments of clinical practice guidelines in Ministry of Health Primary health care increases the value and reduce the waste

D1096

Alrayess Z[1]; Khan AS[2]

[1]FM, King Abdulaziz Medical school, MOH, Saudi Arabia, [2]FM, Medical school, King Faisal University

Problem Statement

In the Kingdom health system consists of several services offer by different stakeholders and more over the system is mainly run by expatriates come from different backgrounds and health culture. Thus the health system in Saudi Arabia requires standardized practice guidelines. In an initiative between the Ministry of Health of the Kingdom of Saudi Arabia (KSA) and McMaster University, we developed an approach to adapt multiple CPGs to the local healthcare setting based on the GRADE/DECIDE evidence to decision (EtD) framework

McMaster University

Methodology

Priority CPG topics were nominated by Saudi stakeholders. Work between panels and the methodology team was coordinated by the Saudi Centre for EBHC. We updated existing systematic reviews of effects, and conducted systematic reviews of context-specific evidence, including patients' values and preferences and cost-effectiveness, to prepare GRADE evidence summaries. During two-day workshops panelists received preparatory training sessions and worked on adapting recommendations.

(http://www.moh.gov.sa/depts/Proofs/Pages/Guidelines.aspx).

Results

A total of 260 recommendations adapted for 22 CPGs. These CGPs have been disseminated and available on Ministry of Health website (e.g Breast Cancer, Cervical Cancer, Osteoporosis and HTN, colon cancer, management of preeclampsia & eclampsia, obesity, Allergic Rhinitis, ST elevation in MI, migraine, sickle cell anemia and thalassemia) and we obtained feedback from 230 panelists. Noted successes included searching literature to consider local evidence . The EtD framework as a structured process for consensus and documenting panel decisions, and panel engagement. Challenges included email as a primary communication method with panels, and achieving multidisciplinary panel representation.

Conclusion

The experience to produce adapted CPGs in a short period is feasible but challenging. Developers may utilize this approach for adaptation and for de novo development. These CGPs will be helpful to reduce the variability in the practices and community receives high quality care at the primary health care level.

D1097

USING LMS FUNCTIONALITY FOR EARLY WARNING SYSTEMS

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RCSI

Learning Analytics in Early Warning Systems

Systems capable of identifying online learning behaviour indicators related to academic success or failure can be used to support existing early warning systems. Engagement in forum discussions and performance in online assessments/quizzes are the most reliable indicators of academic success in online modules. Other variables often studied, 'frequency of login' and 'time on task' have lower correlation to academic achievement. This study aims to promote and monitor student engagement online in a medical foundation year module using learning management system (LMS) quiz functionality and assess use of LMS data as a predictor of academic performance.

Methods

One of the five science modules taken by students in the first semester of a foundation year was adapted to include more than 160 self-regulated online quiz items. Student engagement in all science modules was monitored using activity reports from Moodle, the university LMS. Simple linear regression analysis of online learning behaviours (total online activity, total quiz activity, time on quiz tasks, total quiz score, forum activity) from the LMS activity report plus face to face class attendance rate was completed with module final score as the dependent variable. Multiple regression analysis of the statistically significant variables of 'quiz score' and 'class attendance rate' and subsequently binary logistic regression analysis of students classified as 'at risk' were completed. All statistical analysis was undertaken in SPSS.

Results

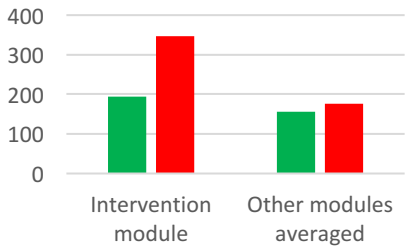

Fig. 1 Online activity in intervention module and other modules averaged (15/16, 16/17)

Variable	r_s	r^2	p
Quiz score	0.466	0.218	<0.001
Quiz activity	0.245	0.06	0.007
Total activity	0.23	0.053	0.012
Forum activity	0.203	0.041	0.027
Time on quiz tasks	0.2	0.04	0.030
Class attendance	0.334	0.111	<0.001

Table 1 Simple correlation recorded variables with module final score

Multiple linear regression analysis showed quiz score and class attendance statistically and significantly predicted module final score, $F(2,115) = 20.536$, $p < 0.001$, $r^2 = 0.263$. Binary logistic regression of this model correctly placed 'at risk' students 67% of the time. 16 students (14%) who were 'at risk' were mistakenly identified by the model as performing adequately.

Conclusions

Self regulated online quizzes increase online student engagement in face to face courses and can provide predictors of academic performance which may augment existing early warning systems.

D1099

Comparison of Psychometric Qualities of Two Clinical Examination Formats used in a Final MD Examination

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Introduction

The final certifying MD examination in our College is composed of two components, written and clinical. The clinical component is conducted in two formats; a traditional OSCE of 15 stations, each of 5 minutes duration, testing focused tasks of history taking, physical examination, practical skills/procedures, counselling, and management skills. A mixture of simulated patients and manikins are used and each station is marked against a station-specific checklist and a global rating by one examiner. The other format is eight short cases of 12 minutes each, testing a candidate's interaction with real unstandardized patients in four domains, approach to patient, clinical skills, problem-solving skills, and management skills. Two examiners assess each case independently by using rating scales. The psychometric qualities and suitability of the two examination formats as assessments tools in the final MD examination are compared.

Methodology

Data from 3 cohorts of students who sat for the final MD examination in June 2014 (108 students), June 2015 (118 students) and June 2016 (94 students) were used in the study. Statistical parameters such as mean and standard deviations for each format were determined. Generalizability theory was used to estimate the reliability and standard error of measurement of the OSCE and Short Cases in addition to the individual domains of the Short Cases. Pearson correlations between different examination components were also determined.

Results

Table 1:	2014, 2015, 2016				
Component	Mean (%)	SD	Pass Mark (%)	Reliability	SEM
OSCE	74, 74, 75	4.67, 5, 5.2	55, 58, 60.6	0.52, 0.53, 0.58	3.2, 3.4, 3.3
Short cases	74, 71, 69.5	6.17, 7.08, 5.9	50.5, 50.5, 49.9	0.58, 0.55, 0.52	4.0, 4.7, 4.1
Internal consistency (across 4 domains of SC)			60, 60, 57	0.93, 0.94, 0.93	1.95, 1.7, 1.55

Table 2:	2014	2015	2016
Written-OSCE	0.50	0.52	0.63
Written-Clinical	0.51	0.62	0.36
OSCE-Clinical	0.55	0.54	0.38

The reliability of the two formats ranged from 0.52 to 0.58 with the “short cases” format being slightly more reliable than the “OSCE” (Table 1). Domain reliability in the “short cases”, however, was very reliable with values ranging from 0.93 to 0.94. The Pearson correlations between the different exam components were moderate to high (Table 2).

Conclusion

The reliability of the two examination formats is comparable. However, the "short Cases" format has the advantage of assessing domains. Pearson correlations values might suggest that different parameters of competence were being assessed by the two formats. The suitability of any one format will depend on its validity, psychometric qualities and cost-effectiveness.

D1100

ASSOCIATION OF KNOWLEDGE AND PRACTICE OF STANDARD PRECAUTIONS AMONG STUDENTS

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[1,2] Medical Education Unit, Atma Jaya University, Indonesia

Introduction and Objective

- Standard precaution, which introduced in the 80's, is a mandatory basic protocol
- Plays an important role in preventing infection
- Standard precaution's practice in medical students is crucial
- To evaluate real world practice of standard precaution among students of Atma Jaya Medical School.

Methodology

- Cross-sectional study
- April to June 2017
- Involving 63 clerkship students of Atma Jaya School of Medicine, Jakarta, Indonesia
- Self-administered questionnaire to assess knowledge and practice of standard precaution
- Questionnaire contains 11 questions of knowledge and 11 questions of practice
- Association were analyzed using chi square test of independence

Results

- 98,4% agreed that standard precaution should be applied for all patients regardless of their infection status.
- 96,8% agreed that standard precaution necessary in contact with urine and feces.
- 38,1% believe that recapping allowed.
- 38,1% had needle-stick injury.
- There were no association between knowledge and practice of standard precaution. ($p>0,05$).

Conclusion

Despite available and ongoing curriculum that includes teaching and practice of standard precaution in premedical and medical years, the knowledge and practice of standard precaution in Atma Jaya Hospital are still inadequate.
A new approach in implementing adequate transfer of knowledge and practice of standard precautions is needed.

D1101

Children Perception on Volunteer Dental Clinic and Mini-educational Programs- a Questionnaire Study

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[2] Genetics Consultation Center, Buddhist Tzu Chi General Hospital, Hualien, Taiwan

[3] Department of Pediatrics and Medical Education, Buddhist Tzu Chi General Hospital, Hualien, Taiwan

Introduction

7- 12 years old

40 Hai-Tsuo children

Dental Care Technique

Medication Use

Mini-educational Programs

Generation of Bowel Habit

Recognized Our Body

Navigation: Tzu Chi Museum

Results

Recall Rate of Questionnaire: 98%

Dental Visit

- 72% children received at least once dental care.
- 62% visited at least once to the only medical center in eastern Taiwan.

Free Dental Care

- 46% children do not feel visiting dentist is a terrible event.
- 95% children do not know his or her dentist's name.
- Recall Rate of Revisit: 26%

Daily Dental Care Habits

- 54% children use flossing to clean their teeth
- 85% children brush their teeth every day.
- 79% children brush their teeth before sleep.
- 71% children did not checkup by their caregivers before sleep.

Mini-educational Programs

- 41% children want to be a dentist in their future life.
- 80% children feel happy and joyful about this volunteer activity.
- 100% children appreciate all volunteers involved in the activity.
- 38% children will share their experience after going back home.

Methodology

One teacher stands out

- read through every question
- point out how to answer the questions

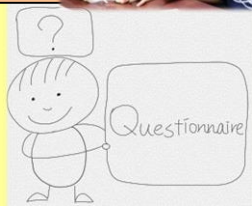
Helps from teachers and medical students

- Children was informed safe
- Children can ask any question

Group questionnaire survey was done in 30 minutes.

Conclusion

A child perception questionnaire involved many aspects, including questionnaire design, developmental milestone, background, cognition level etc. The timing and assisting them to accomplish a questionnaire are also important. Active participate in volunteer clinic and holding MEP in extra curriculum service learning activity guiding medical students to witness the effectiveness of health literacy promotion.



How Well Can We Measure Professionalism? A Systematic Review of Existing Instruments

ID: 1102

Yu Heng KWAN[1*], Kelly PNG[2*], Hendra GOH[3*], Jiekie PHANG[3], Ying Ying LEUNG[4], Yi SEAH[5], Julian THUMBOO[1], Swee Cheng NG[4], Warren FONG[4], Desiree LIE[6]

1. Program in Health Services and Systems Research, Duke-NUS Medical School Singapore, 2. Department of Pharmacy, National University of Singapore, Singapore, 3. Faculty of Science, National University of Singapore, Singapore, 4. Department of Rheumatology and Immunology, Singapore General Hospital, Singapore, 5. Faculty of Dentistry, National University of Singapore, Singapore, 6. Duke-NUS Medical School, Singapore

Singapore General Hospital
SingHealth

Introduction

- Assessing medical professionalism is **essential** to medical education.[1]
- Although various instrument to assess professionalism were developed, the validity of the findings is **dependent on the quality of the instrument** in use. [2]
- Hence, we **examined the psychometric properties of available instruments** that assessed medical professionalism with the aim of allowing educators to select amongst them an instrument suited to the needs of their program.

Methods

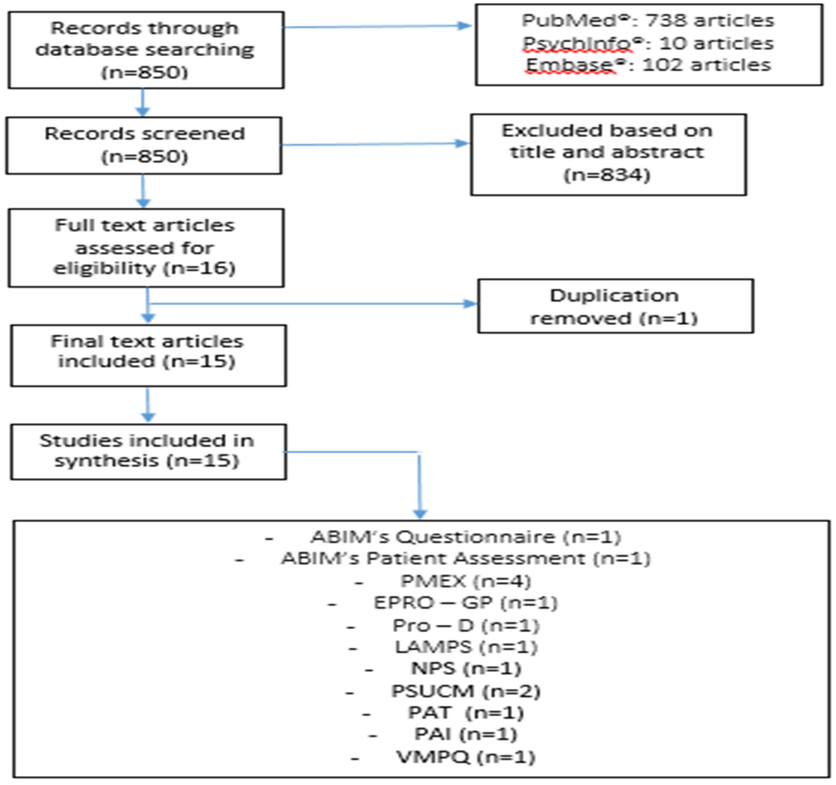
1. Eligibility criteria
   - Written in English
   - Applied in clinical setting
   - Used in professionalism evaluation

→ 2. Selection of studies (Fig.1) and data extraction (Table 1)

→ 3. Methodological quality assessment

→ 4. Quality of psychometric properties and evidence synthesis (Table 1)

Results



Discussion

- There is a **limited number of psychometrically sound instruments** for assessing medical professionalism, and most (81%) were studied in single studies and were of poor quality.
- Results revealed that current instruments **do not display comprehensive positive evidence** across all psychometric properties.
- However, **PMEX** remains one of the better instrument among all.

Conclusion

- **Eleven instruments** are available for measuring medical professionalism. However, many of the instruments are not psychometrically sound. Apart from internal consistency and structural validity, other measurement properties of the instruments need further studies to ascertain their quality.

Results

Instrument	Authors & Reference	Language	Domains	Response options	Study Sample	Setting	Level of Evidence for Combined Measurement Properties for Each Instrument								
							CTT/IRT	Internal Consistency	Reliability	Measurement Error	Content Validity	Structural validity	Hypothesis testing	Cross-cultural validity	Criterion validity	Responsiveness
1. ABIM-A (modelled after)	Aramesh et al. (2009)	English	3 (12)	1-10	122	Inpatient	CTT	+++				+++		?		
2. ABIM-B (modified version)	Symons et al. (2009)	English	2 (15)	1-5	130	Inpatient	CTT	+								
3. EPRO-GP	van de Camp et al. (2006)	English	26 (127)	1-4	12	Inpatient	CTT				?					
4. Pro-D	Roos et al. (2016)	English	4 (67)	1-4	133	Inpatient	CTT	+	?				?			?
5. LAMPS	Al-Eraky et al. (2013)	English	5 (28)	1-5	413	Inpatient	CTT	?						?		
6. NPS	Tromp et al. (2010)	English	4 (106)	1-4	119	Inpatient	CTT	+				+	?			
7. P-MEX	Tsugawa et al. (2009)	Japanese	4 (24)	1-4	23	Inpatient	CTT	?	?		?	+	?	?	+	
	Tsugawa et al. (2011)	Japanese	4 (24)	1-4	165	Inpatient	CTT									
	Cruess et al. (2006)	English	4 (24)	1-4	74	Inpatient	CTT									
	Karukivi et al. (2015)	Finnish	4 (21)	1-4	23	Inpatient & outpatient	CTT									
8. PSUCM	Blackall et al (2007)	English	6 (36)	1-5	250	Inpatient	CTT	+++				+++	?	?		
	Bustamante et al. (2014)	English	7 (36)	1-7	765	Inpatient & outpatient	CTT									
9. PAI	Gauger et al. (2005)	English	15 (15)	1-7	103	Inpatient	CTT	+								
10. PAT	Kelley et al. (2011)	English	5 (33)	1-5	1202	Inpatient	CTT	+++			?	+++				
11. VMPQ	Nhan et al. (2014)	English	6 (32)	1-6	1196	Inpatient	CTT	?			?		+	?		

ABIM: American Board of Internal Medicine, EPRO-GP: Evaluation of professional behaviour in general practice, Pro-D: German Professionalism Scale, LAMPS: Learners' Attitude of Medical Professionalism Scale, NPS: Nijmegen Professionalism Scale, P-MEX: Professionalism Mini-Evaluation Exercise, PSUCM: Penn State University College of Medicine Professionalism, PAI: Professionalism Assessment Instrument, PAT: Professionalism Assessment Tool, VMPQ: Vietnamese Medical Professionalism Questionnaire, CTT: Classical Test Theory, IRT: Item Response Theory.

References:

1. Livingston EH, Ginsburg S, Levinson W. Introducing JAMA Professionalism. Jama. 2016;316(7):720-1.
2. Kirk LM. Professionalism in medicine: definitions and considerations for teaching. Proceedings (Baylor University. Medical Center). 2007;20(1):13-6.

UNDERGRADUATE MEDICAL RESEARCH OUTREACH AND PROJECT MATCHING (ROPM) PROGRAMME TO SUPPORT RESEARCH ACTIVITIES AMONG MEDICAL STUDENTS AT THE NATIONAL UNIVERSITY OF SINGAPORE (NUS)

D1104

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Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Introduction

The ROPM is a programme jointly organised by the Wong Hock Boon Society and NUS Medical Society Research Directorate since February 2016 to promote undergraduate student research. Into the third year, we aim to investigate research preferences, review trends and effectiveness of research outreach, to help students develop their interests and for institutions to improve the diversity, quantity and quality of student research.

Methods

Every month, major tertiary hospitals are invited to offer research projects to 1500 NUS Medicine students through the ROPM team. We then reviewed the application trends to improve project matching with stronger outreach, more frequent project release and awards. We have reviewed the project matching statistics for 14 months from February 2016 to March 2017 using Excel. Projects reviewed are offered by NUH, SGH, CGH and NTFGH.

Results

In the first 7 months of ROPM, the application rate for projects was 54.2%. In the second half, the application rate increased by 10.7%. A total of 262 places for students were offered, with 237 applications made. Respiratory Medicine, Paediatrics, Epidemiology, Surgery, and Anaesthesia have consistently been strong preferences with more than 50% of projects applied for. Surgery and Renal Medicine had the largest surge in applicants. Other departments met with strong interest include Microbiology and Immunology, Renal Medicine, Pharmacology, Psychiatry at 50.0%, 47.4%, 47.1%, 42.9% respectively. Projects offered by SGH in the second half increased by 73.0% and NUH by 50.0%. The most preferred project type was Medical Research, increasing from 47.6% to 53.8% application rate. However, the proportion of its applicants saw a decline due to an increasing diversity of projects.

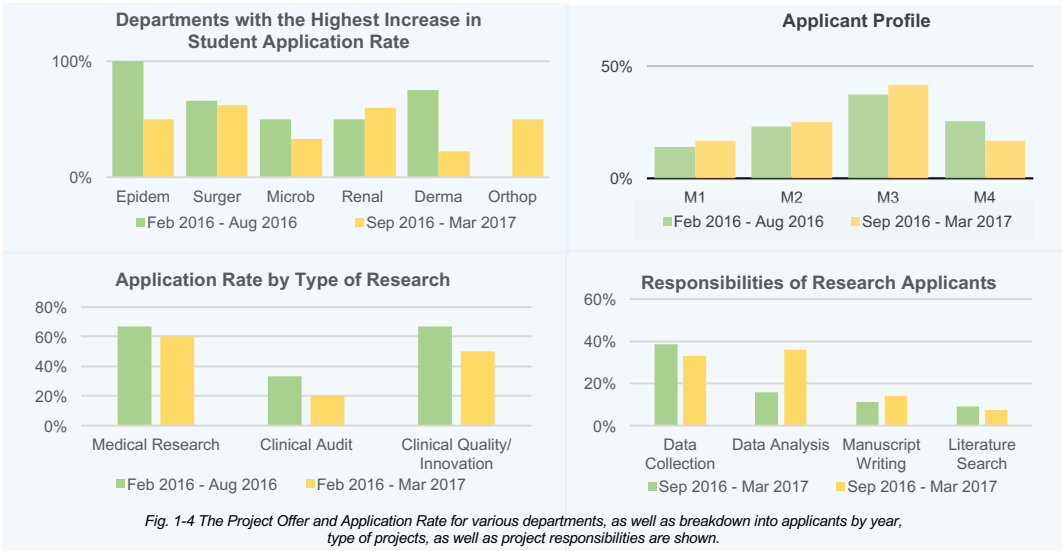

Fig. 1-4 The Project Offer and Application Rate for various departments, as well as breakdown into applicants by year, type of projects, as well as project responsibilities are shown.

Significantly, a greater diversity of responsibilities was seen, with increased student involvement such as manuscript writing. The greatest increase was in data analysis at 21.1%.

Conclusion

Based on our results, the application rate, project offer rate, diversity of projects, and degree of student involvement have increased from the first to second half of the programme with increased outreach and projects. It is significant to note that with the increase in diversity of projects, students' preferences in projects has widened, and hence further improvements to these factors should be considered with new methods to promote student interest.

We would like to express our sincere gratitude to NUH, SGH, CGH, NTFGH and various institutions for their continued support in the ROPM.

D1105

Relational Elements of Mentoring: *The CAS Approach*

Simone Quek[1], Chloe Choy[2], Zhou Yi[2], Toh YP[3], Krishna LKR[1,2,4,5]

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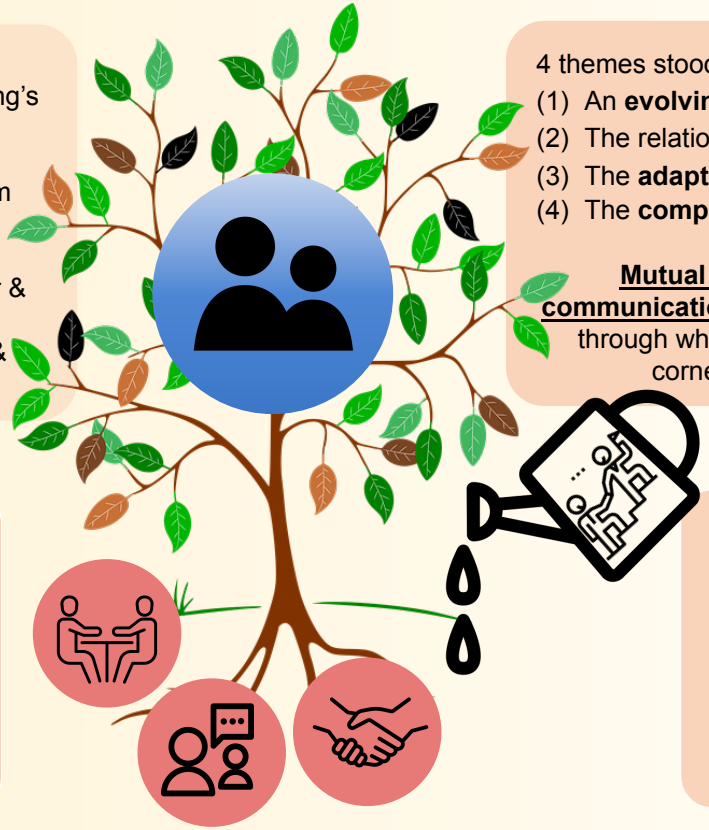
Introduction

- Literature shows that mentoring relationships are at the core of mentoring's success.
- These relationships are buffeted by constant change & challenges both from external factors & within the dyad.
- The Complex Adaptive Systems (CAS) model takes into account the non-linear & unpredictable nature of the mentoring relationship in response to challenges & change.

Methodology

- A literature search on mentoring relationships in general medicine was performed in databases PubMed, ERIC, OVID, ScienceDirect & the Cochrane Library.
- Open coding & thematic analysis was done & concepts of CAS were employed to analyze mentoring relationships.



Results

4 themes stood out during analysis

(1) An **evolving** relationship
(2) The relationship **evolving to the external environment**
(3) The **adaptability** of the relationship to the external environment
(4) The **complex relations** within the dyad

Mutual trust & respect, built through **open & honest communication** forming a **collaborative, productive partnership** through which **both mentor & mentee benefited from** is the cornerstone a successful mentoring relationship.

Conclusion

- The CAS approach accepts the mentoring relationship is non-linear, co-evolving, adaptive, unpredictable and self-organizing in response to dynamic relational, organizational & systems-related factors.
- This will allow for the development of effective strategies to enable the mentoring relationship to withstand stresses & change.

D1106

ETHANOL – GLYCERIN – ACETIC ACID – SATURATED SALT SOLUTION FIXATION WITH TRADITIONAL HERBAL CONSERVATION METHOD: A NOVEL AND USEFUL WET LAB SPECIMENS EMBALMING FOR SURGICAL SKILLS TRAINING

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Department of Practical and Experimental Surgery, Milirary Medical University, Vietnam

Aim

To evaluate the suitability of wet lab specimens embalmed by the Ethanol – Glycerin - Acetic acid - Saturated Salt solution fixation with traditional herbal conservation method for surgical skills training.

Methods

- Formula of embalming fluid: Ethanol (60%), glycerin (5%), acetic acid (1%), sodium chloride (2kg), water (3,4L) and some traditional herbs (Cinnamon, Star anise…) per 10L
- 30 hind limbs and 30 fore limbs from 15 pigs were embalmed using intra-arterial injections and preserved at room temperature (~ 25^0C)

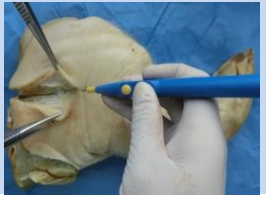
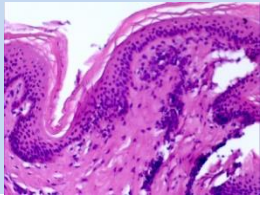
- Assessment of embalmed specimens:
  - ✓ *Antimicrobial testing*
  - ✓ *Histological testing*
  - ✓ *Usability testing: color and texture of tissues, flexibility of joints and skin, odour and suitability to specific operative procedures.*

Results

After 5 months

- ✓ *Antimicrobial testing:* no bacterial and fungal infections
- ✓ *Histological testing:* excellent preservation of various tissues
- ✓ *Usability testing:*
- + No change in color
- + Aromatic smell of traditional herbs
- + Flexible joints and a high tissue quality
- + The surgeons' feedback to the use of embalmed specimens was very satisfactory.



Conclusion

Specimens embalmed by this new embalming fluid are sufficiently useful for surgical skills training. Our method is simple, carries a low infectious risk, and is relatively of low cost, enabling a wider use of preserved specimens for surgical skills training.

D1107

USAGE AND IMPACTS OF MEDICAL SMARTPHONE APPS AMONG THE MEDICAL STUDENTS OF TAMIL NADU,INDIA.

Shenaz Fathima .A[1], Sriram .T[2] , P.ThirumalaiKolundusubramanian[3]

[1]Student, CMCH&RC, India, [2] Department of Community medicine, CMCH&RC, India, [3]Department of Medicine, CMCH&RC, India.

Introduction

Medical apps are used for both learning and educational purposes. Despite the plethora of medical smartphone apps to medical students, the status of its utility has not been explored much. Therefore this study is conducted to find out the usage and impacts of smartphone medical apps.

OBJECTIVES:

- To elicit the proportions of students using medical apps.
- To find out the influencing factors.

Methodology

A Cross-sectional study was done among the medical students (1st year to Internship) belonging to 14 medical colleges of the state of Tamil Nadu, India. A pre-tested anonymous online questionnaire was sent to the participants through Google forms. Statistical analysis was done using SPSS 23 and Qualitative data is expressed in percentage & proportions.

Results

A total of 550 students responded. (M=174, F=336).

Fig.1(%): Awareness and Usage.

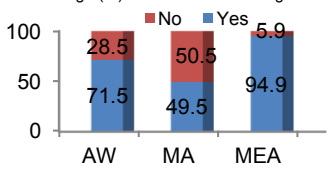


Fig.2(%): MEA , its utility & promotion.

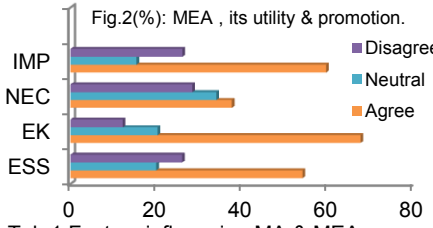


Fig.3(%):Views on MEA.

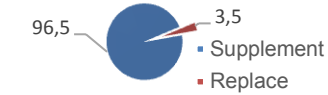


Fig.4(%): MEA & Usefulness.

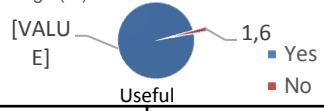
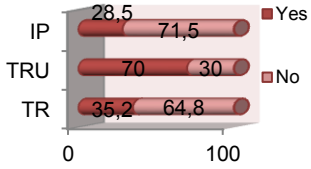


Fig.5(%): MEA and Recommendation.



Tab.1:Factors influencing MA & MEA.

Resources*	Text books (81.3%)	Websites (61%)	Lecture notes (38.3%)	Medical apps (23.8%)
Category*	Educational (81.7%)	Health & fitness (28.9%)	Clinical monitoring (24.7%)	
Trust	0-3 (5.5%)	4-7 (56.1%)	8-10 (38.4%)	
In context to medical education apps (MEA) :				
Reason*	Easy access to knowledge (78%)	Saves time (11.3%)	Reliable (6,6%)	
Purpose*	Learning (78%)	Look up info (53%)	Testing knowledge (27%)	Medical news (21.9%)
Concerns*	Distraction (44.9%)	Trust (35.9%)	In-depth knowledge gain (38.5%)	Under-estimate (14%)

AW-Awareness, MA- Medical app, MEA-Medical education apps, IMP-Institution must promote, NEC-Necessary, EK-Enhance knowledge, ESS-Essential, IP-Institutional programme ,TR-Teacher recommended, TRU-Teacher recommended usage.

* Values are not mutually exclusive.

Conclusion

In our study, it was found that 49.5% are using medical apps. Among them, 95% used it to enhance knowledge and for learning. Medical apps were recommended only by few teachers (TR) of some colleges. The limitations for usage were related to institutions, individuals and policies.

References

1) Payne KF, Wharrad H, Watts K. Smartphone and medical related App use among medical students and junior doctors in the United Kingdom (UK): a regional survey. BMC Medical Informatics and Decision making 2012 Oct30; 12(1):121.

D1108

CANDIDATES' USE OF ONLINE RESOURCES IN PREPARATION FOR THE BIOMEDICAL ADMISSIONS TEST

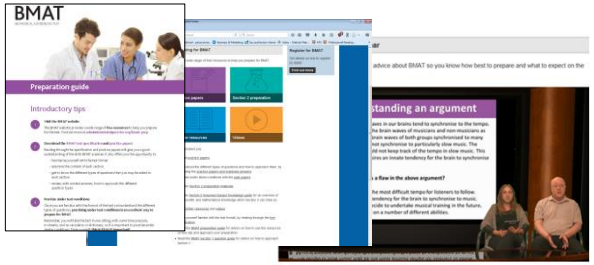
Devine, A.[1], Fyfe, M.[1], Cheung K.Y.F.[1], & McElwee, S.[1].
1. Cambridge Assessment Admissions Testing, University of Cambridge, UK

Introduction

BMAT is used by universities for selection to medicine courses. Cambridge Assessment Admissions Testing provides free online preparation materials including past papers, answer keys and guides that support revision. The current study aimed to understand how candidates prepare for BMAT.

Methodology

295 BMAT November 2015 session candidates completed an online survey asking candidates about their use of materials when preparing for BMAT, including the freely available official resources and external sources of help. Responses were linked to BMAT scores for analysis.

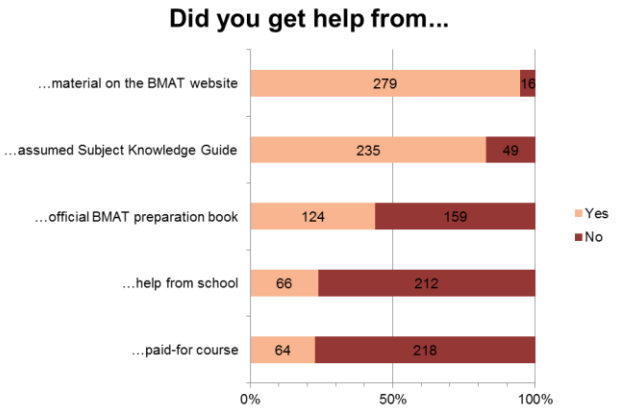


BMAT
BIOMEDICAL ADMISSIONS TEST

Cambridge Assessment Admissions Testing

Results

- Practicing under timed conditions was associated with higher BMAT scores.
- Qualitative responses indicated a favourable perception of online materials.
- Some candidates indicated a preference for printed versions of resources available exclusively online.



Conclusions

Free online materials are used in BMAT preparation and they may facilitate effective preparation when used to practice under timed conditions. Although technology made the materials widely available, respondents expressed a desire for other resources to be provided in print form. These findings have implications for future provision of preparation materials delivered using technology.

VALIDATION OF COLLABORATIVE PRACTICE ASSESSMENT TOOL

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[1] Master Program in Medical Education, Department of Medical Education, Faculty of Medicine Universitas Indonesia

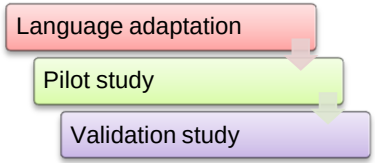
[2] Department of Medical Education, Faculty of Medicine, Universitas Indonesia

Introduction

Assessment of interprofessional collaborative practice of healthcare practitioners is important to provide an overview of current practices. The assessment is also strategic for educational institutions that plan to prepare learning experiences for medical and health professions' students. The Collaborative Practice Assessment Tool (CPAT) can be used to assess the practice of interprofessional collaboration in health setting. This instrument has not been used in Indonesia. The purpose of this study therefore was to provide evidence on the validity and reliability of Indonesian adaptation of CPAT.

Methodology

This study used cross sectional design and involved 304 medical and healthcare practitioners at Cipto Mangunkusumo Hospital from March to June 2017.



The data was analyzed using SPSS 20.0 with exploratory factor analysis (EFA) to identify the number of subscales and to provide evidence of the validity and reliability of the questionnaire.

Image source in www.gpb.com

Results

No	Name of Component	Cronbach Alpha		Number of Item	
		Pre EFA	After EFA	Pre EFA	After EFA
1	Relationships among members	0,906	0,906	8	9
2	Team barriers	NA	0,614	NA	5
3	Relationship of the team with community	0,918	0,918	4	4
4	Coordination and role sharing	NA	0,927	NA	14
5	Decision-making and conflict management	0,67	0,700	6	2
6	Leadership	0,8	0,773	9	5
7	Missions, meaningful purpose, goals	0,88	0,875	8	9
8	Patient involvement, responsibility and autonomy	0,87	0,772	5	5
9	General role responsibilities, autonomy	0,81	NA	10	-
10	Communication and information exchange	0,84	NA	6	-
	Total	**0,98**	**0,916**	**56**	**53**

Conclusion

The Indonesian version of CPAT was valid and reliable to be used as an instrument to assess interprofessional collaborative practice of health professionals. There were some changes in the total number of items, the distribution of items to the subscales and identified subcales in Indonesian CPAT compared to the original CPAT. The Indonesian version of CPAT fulfills the criteria of construct validity and reliability of a questionnaire both as a whole set and in each subscale.

D1110

PITCHING OF LANGUAGE BARRIER IN "LITTLE SHARED LANGUAGE" INTERACTIONS WITH SIMULATED PATIENTS

Tierney, T Low-Beer, N - Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Background and Aims

Language barrier is included in the LKCMedicine Clinical Communication curriculum. We have explored the experiences of simulated patients (SPs) in "Little shared language" (minimal English) scenarios through questionnaires and observation of teaching.

Observations

There are two process employed by the SPs during the scenario when pitching the language barrier;

1. **Spoken English** – deciding what words to use. *"How do I describe my symptoms in minimal English ?"*
2. **Understanding and filtering** – deciding what to understand and how to respond to questions. *"What words do I understand? How do I respond to words I don't understand? How do I respond to complex phrasing?"*

Process 2 is more complex than process 1, and thus more difficult for the SPs to portray consistently.

"…she seemed to not understand a lot of what I was saying at the start of the interview then midway through she suddenly was able to understand more of it, then towards the end she was confused again.
(student feedback prior to SP training)

SP Training – Understanding and Filtering

Training focusses on the various responses to student questions;

Understand
Answer the question

Don't understand
Look blank / demonstrate lack of understanding non-verbally / ask for clarification

"SP was very realistic - reacted the way a linguistically challenged patient would. He displayed visible sign of frustration like one would in such a scenario."
(student feedback after SP training)

Misunderstand
Answer the question I thought I'd heard

"Level of confusion appropriate. Lovely example of misunderstanding; 'are you coping?' 'Yes! I'm cooking'"
(facilitator feedback after SP training)

Conclusion

Pitching the language barrier, and thus the difficulty, of the scenario correctly enhances the realism of the role-play. SP training must address how SPs modulate their English, as well as their 'filtering' of the students' English. We have tailored the training for SPs to focus on the most challenging aspects (understanding and filtering) resulting in more realistic portrayal of language barrier.

D1111

TOWARDS ONLINE CASE STUDY REPOSITORIES FOR HEALTHCARE INSTITUTIONS

Khoo Hwee Sing[1], Winnie Teo Li-lian[2]

[1] Health Outcomes and Medical Education Research, Group Education, National Healthcare Group. [2] Group Education, National Healthcare Group.

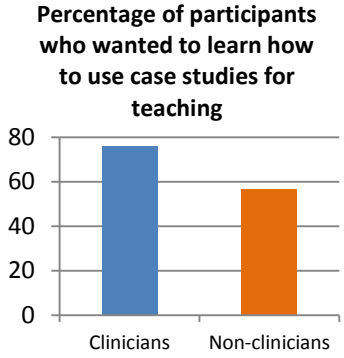
INTRODUCTION

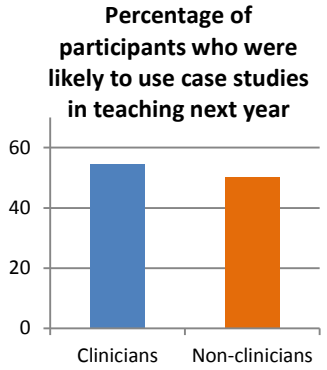
- Case studies are a powerful tool for teaching complex healthcare transformation issues.
- This study aims to develop an institution-wide, online repository for the documentation of valuable learning experiences, or composite cases from discussions,
- Represents a way to utilise technology to archive institutional knowledge for easy retrieval, to facilitate vicarious learning.

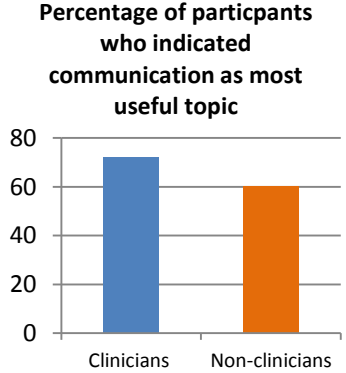
METHODS

- A needs analysis survey was disseminated in May 2016 on Google forms: one version for clinician educators (doctors, nurses, and allied health professionals), and another for non-clinician educators.

RESULTS







Other topics suggested by participants for case studies	
Leadership styles	Ethical challenges (decision making)
Systems thinking	Professionalism
Organizational culture and change	Practice-based learning / work-based learning
Adaptability to change	Quality improvement

D1112

UTILIZATION OF E-LEARNING FOR IN-SERVICE TRAINING – 5-YEAR RESULTS

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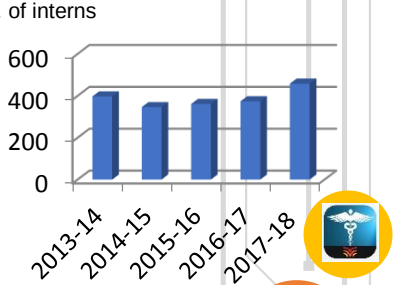
Office of Medical Education, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong S.A.R.

Background and Aims

More than 300 medical graduates every year are under 12-month internship of in-service training in Hong Kong. Patient safety and patient care are key areas that healthcare educators have to emphasize to intern during this one-year training period. Sufficient and effective in-service training are required to ensure the continuous quality learning and improvement of patient care.



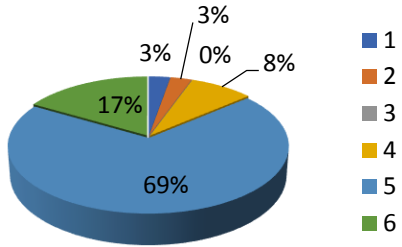
Methods

Web-based training modules of Medication Safety, Blood Transfusion, Resuscitation were developed by Faculty of Medicine, The Chinese University of Hong Kong (CUHK) in 2013 for all medical interns to study online. Modules of Fluid Therapy, Legal Issues, Electrolyte Disorders were developed in 2014. Procedural Sedation and Clinical Management System Training topics are added in 2016. These online modules are mandatory as part of internship training and are delivered via Learning Management System (LMS) to all interns before the start of internship and throughout the whole training period.

Results

100% interns in the past 5 years have studied all these training modules. Evidence showed that accident of blood transfusion error during internship was reduced in recent years. E-learning modules are more welcomed by interns and used as reference during internship training.

1. *Strongly disagree*
2. *Disagree*
3. *Slightly disagree*
4. *Slightly agree*
5. *Agree*
6. *Strongly agree*



a) *Do you agree that the course contents are useful and relevant to your work?*
b) Do you agree that the course materials are presented clearly and are easy to understand?
c) Do you agree that e-learning is an effective mode to help you learn?

Conclusion

Well designed and well constructed e-Learning modules provide effective training and improve intern performance related to patient safety. Apps have been developed for seven of these training modules and delivered to interns in Year 2017. eLearning has enhanced the in-service training and improved patient care.

D1113

WHAT AFFECTS PHYSICIANS' IMPRESSION OF A GOOD CLINICAL TEACHER?

Ng Guan Luan[1], Lim Yong Hao[2]

[1]National University of Singapore, [2]Health Outcomes & Medical Education Research (HOMER)

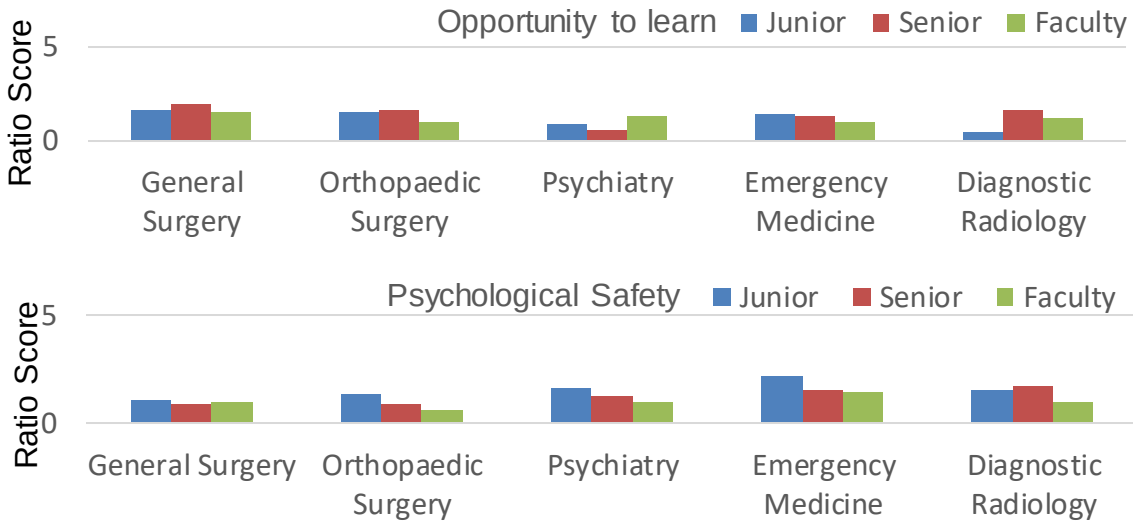
Background

- Studies on faculty evaluation and development shown that a good clinical teacher should **give residents feedbacks**, **create a positive learning environment** and **respect residents**.
- However, less is known about potential differences in attributes and skills perceived to be important across specialities.
- The aim of this study is to investigate the potential differences in perceptions of what is considered to be important attributes skills for clinical teachers across specialities and physicians

Methods

15 Attributes	For physicians to choose the most and least important attributes.
BEST WORST SCALING	Physicians select their best worst choices from a set of 5 alternatives randomly spread across 12 different sets
RATIO SCORES	For each attribute, take the ratio of number of times best and number of worst chosen
COMPARE	Across the 6 specialties and physicians (faculty members and residents)

Results



Physicians from surgical specialties are more likely to perceived providing opportunity as most important while physicians from Psychiatry, Emergency Medicine and Diagnostic Radiology are more likely to perceived psychological safety as the most important attribute.

Conclusion

The discrepancies could be due to the nature of different specialties e.g. surgical specialties requires the use of equipment to make precise incisions thus prioritize the need for hands-on and the opportunity to learn. Understanding the perception of a good teacher allow schools to make changes to cater to the needs of physicians across specialties.

D1114

Online Interactive Decision Support Tools (IDSTs): A Scalable Educational Resource to Impact the Management of Diseases with Complex Treatment Algorithms

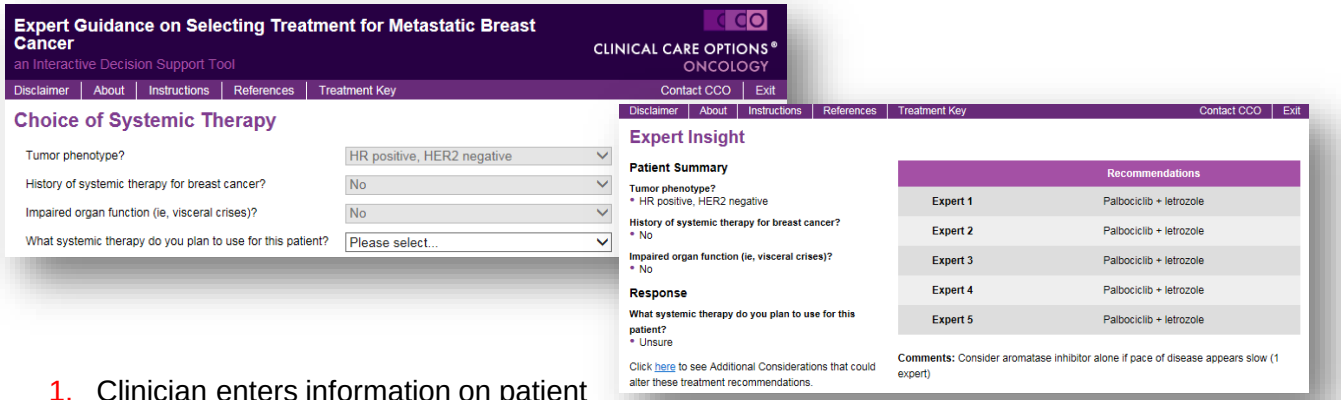
Mortimer, JA[1]; Waldrop, J[2]; Stacy, T[1]; Obholz, K[1] [1]Clinical Care Options, LLC, Oncology CME, USA; [2]Pfizer, Inc. Global Medical Grants, USA

1. Rationale

- Clinicians are challenged to master new data to select treatment in complex diseases
- An online tool that allows users to enter specific case details and returns expert recommendations for that case would improve clinical care as part of a broader online CME curriculum
- Online tools created as activities in a CME program would be useful globally and efficiently funded through independent educational grants by multiple commercial supporters
- Careful design would allow assessment of the variance between planned treatment by users and experts
- The CCO website makes the tools widely accessible: clinicaloptions.com/OncTools

2. How it works

- Expert faculty (5) agree on case variables and give recommendations for each case

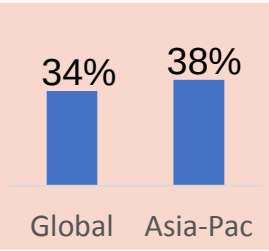
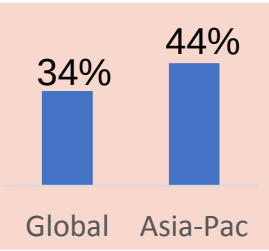
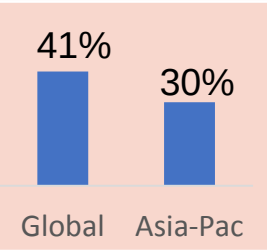


1. Clinician enters information on patient and disease characteristics through dropdown menus
2. Clinician indicates their intended treatment approach
3. Capture data to compare intended treatment vs expert recommendation
4. Clinician receives expert treatment recommendations for their specific patient
5. Ask if tool impacted the treatment plan

3. Broad Applicability: Independent educational grants allow course continuity & efficiency

Topic (2016-2017)	Versions	Supporters (combined across all versions)
Lung Cancer	4	Abbvie, Celgene, Genentech, Lilly, MSD, Novartis
Kidney Caner	3	Exelixis, Novartis, Pfizer, Ipsen
Myeloma	2	Amgen, Celgene, Janssen, Takeda
CLL	2	Abbvie, Genentech, Janssen, Pharmacyclics
Managing Immune AEs	2	MSD, Pfizer, Merck KGaA
Colorectal Cancer	1	Bayer, Genentech, Lilly, Taiho
Melanoma	1	BMS, Genentech, Novartis, Prometheus
Myeloprolif. Neoplasms	1	Incyte
Breast Cancer	1	Genentech
Total	**17**	**19 Unique Supporters**

4. Asia-Pacific Utilization and Impact on Clinical Behavior: Examples

Cases entered by Clinicians	Immune Related AEs	Melanoma	Breast Cancer
Global, N	4,709	1,329	1,470
Asia-Pacific, %	16%	12%	17%
Changed Treatment Plan to Match IDST			

5. Moving Forward

- Global online IDSTs positively impact the care of patients in the Asia-Pacific Region
- Educational intervention is flexible for regional or country specific consultation and impact on patient care

D1115

Teaching of medical biochemistry in a 3-step approach: Hook, Mount and Interpret

LONG Yun Chau

Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore

Aims:

One of the biggest struggles of medical, dental or life science students in studying biochemistry is that there are many details which need to be "memorized". This study aims to evaluate whether a 3-step approach of engaging the students (hook), establishing key concepts (mount), and enhancing critical thinking (interpret), can be used successfully to facilitate teaching and learning of biochemistry.

Methods:

The 3-step approach involves assuring the students that we can always hook the new concepts and ideas to our existing knowledge, use concrete visualization to acquire the concepts, and fill in the details when the framework is in place. In the third phase of the learning process, students are guided to extend the biochemical pathways and concepts by connecting it to metabolic disorders and pharmacological interventions. Expansion of the original pathways allows the student to apply and extrapolate the original concept, thus minimizing the element of memorizing facts. Students are then requested to provide quantitative and qualitative assessment.

Hook	Mount	Interpret
-Prior knowledge -Interest/ Importance -Confidence -Enthusiasm	-Props -Physical animation -Vocal animation -Suspense and surprise	-Extrapolate ideas -Expand concepts -Data analysis/ Tutorials -Lab sessions

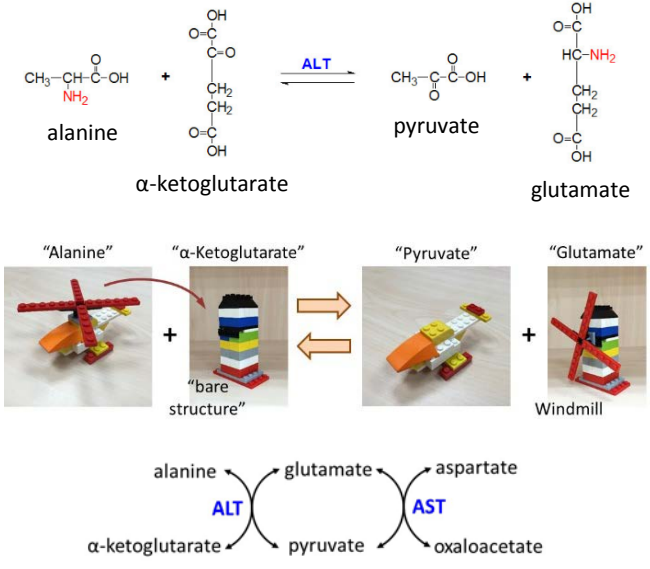
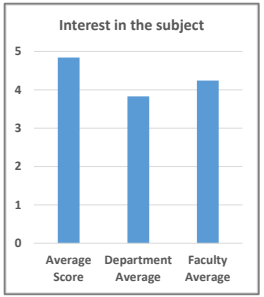
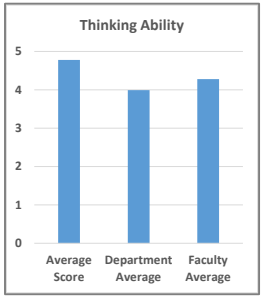


Figure 1: Students are asked to "play" with the Lego sets, moving the propeller of the helicopter to the windmill, and vice versa. It allows student to participate actively to visualize the transfer of a propeller (NH_2) to a "bare structure" (α-ketoglutarate), which produces a new functional entity, a windmill (glutamate). The students were also quick to realize that they literally act as "ALT", the enzyme that catalyze the reaction.

Quantitative Feedback:





Qualitative Feedback:

- make lengthy and complicated biochemistry topics simple and easy to digest, through the use of his various lego bricks and other tools

- helped me understand concepts much better via his visual and verbal explanations. I particularly enjoy the lego blocks he uses as a visual representation, the ice cream scoop and cone example

Conclusions:

This approach is simple and useful in teaching a wide range of topics including metabolism, molecular and cell biology in the context of biochemistry.

D1116

PROVOKING COGNITIVE MEDICAL ERRORS USING VIRTUAL PATIENTS

Seah W D[1], Zary N[2]

[1]Lee Kong Chian School of Medicine, Singapore, [2] MERSU, Lee Kong Chian School of Medicine, Singapore

Introduction

Cognitive medical errors have a large burden on patients and the healthcare system, and are seen to be preventable. This study uses Virtual Patients, a form of simulation, to investigate these errors and make clinicians more cognizant of them. This aim is addressed by the following research questions:

– What types of errors can be provoked using Virtual Patients?
– What are the reasons behind making these errors?

Materials

OpenLabyrinth Virtual Patient program gives participants a patient's history, examination findings and investigations.

Participant decides subsequent management for patient.

Virtual Patient program updates to reflect those changes, offering participant further management choices.

Methodology

9 3rd year medical students completed the case.

Quantitative data:

- Which nodes were visited?
- What errors were committed?

Qualitative data via Think-Aloud:

- What errors were committed?
- Why were they committed?

Results

Sloth was better provoked in information that was more complex and presented later in the case.

Fixation, Playing the Odds and Mis-triage were largely avoided by the participants. The Think-Aloud protocol allowed the assessor insights into the participants' thought process, confirming that these were avoided.

The Ignorance errors tended towards the extremes of distribution, well reflecting the knowledge adequacies and gaps of the participants.

Error	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8	Participant 9	Proportion made error
1.1 (Sloth)	✓	✓	✓	✓	✓	✓	✓	✓	✓	0%
1.2 (Sloth)	✓ (35s)	✓ (1m 50s)	X (1m 20s)	X (15s)	O	✓ (45s)	✓ (55s)	✓ (43s)	✓ (20s)	37.6%
1.3 (Sloth)	X	X	X	X	X	✓	X	✓	X	77.8%
2 (Fixation)	✓	✓	✓	✓	✓	✓	✓	✓	✓	0%
3 (Playing the odds)	✓	✓	✓	✓	X	✓	✓	✓	✓	11.1%
4.1 (Ignorance)	✓	✓	✓	✓	X	✓	✓	✓	✓	11.1%
4.2 (Ignorance)	✓	X	✓	X	✓	✓	✓	✓	✓	22.2%
4.3 (Ignorance)	X	X	X	X	O	X	X	X	X	100%
4.4 (Ignorance)	O	O	O	O	O	X	O	✓	O	50%
5.1 (Mis-triage)	✓	✓	✓	✓	X	✓	✓	✓	✓	11.1%
5.2 (Mis-triage)	✓	✓	X	✓	✓	✓	✓	✓	✓	11.1%

X – made this error
✓ – avoided this error
O – no chance to make error

Conclusion

Virtual Patients can be used to provoke medical errors and create novel learning opportunities. When coupled with Think-Aloud, reasons behind these errors can be gleaned. Limitations in study design may have resulted in gaps between study results and clinical practice, repeat trials would be able to confirm.

D1118

Research on improvement quality of practical medicine training at Vietnam Military Medical University

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Introduction

The demand for quality of medical training is increasingly advanced. It also set out to improve the quality of clinical teaching. The Abdominal Surgery Department – Vietnam Military Medical University (VMMU) is responsible for the clinical teaching of a wide range of students, Renovating and improving the quality of teaching is an important task. Object for this research: Identify the present teaching-learning environmental challenges at the Abdominal Surgery Department. Propose solutions to improve quality of training for abdominal surgery practice in VMMU.

Methodology

Analyze and generalize theoretical and practical basis.
Record actions of teachers and 375 students in each model of medical training.
Enquire students during study at the Abdominal Surgery Department.

Results

Theoretical basis: Renew model and program training played important role in improving quality training medicine. Basis of renewing depended on training targets, students and trainer resources.
Practical basis: Overcrowded, unequal knowledge level of students were inhibitions to quality of medicine training.

Results of enquiring 375 students:
Percentage of agreement with knowledges and skills gained from model training

Knowledges and skills	clinical illustration	clinical discussion	assisted operation	learning on duties
cases report	80.5	80.1	5.2	15.7
examination patient	97.8	80.2	6.9	57.8
diagnosis	89.7	92.3	10.7	58.9
treatment	67.5	98.5	90.3	87.6
take care patient	56.3	79.5	5.7	93.8
experiences of teachers	75.8	73.2	93.7	76.9
from partners	5.7	67.8	3.7	15.9

Conclusion

Development and improving teaching and learning methods are needed at VMMU. The use of training model should be from the fact and students needs. It need to be a combinal solutions included development teacher and system of lectures and text books, application for multi-media in training.

D1119

NUS MEDICINE ATTEMPT AT CURRICULUM DEVELOPMENT: THE CURRICULUM OUTCOMES DEFINITION AND CURRICULUM RATIONALISATION EXERCISE

Liu CM[1], **Kow WCA[2]**, Hooi SC[3], Lau TC[4], Leong KH[5], Ooi S[6], Aw MM[7], Aw DCW[8], Soon D[9], Goh DL[10], Samarasekera DD[11]

[1]Dean's Office, Yong Loo Lin School of Medicine (NUSMed), Singapore , [2]Surgery NUSMed, [3]Physiology NUSMed, [4]Medicine NUSMed, [5]Medicine NUSMed, [6]Emergency Medicine, National University Health System, [7]Paediatrics, NUSMed, [8]Sengkang Health, Alexandra Hospital, [9]Medicine, NUSMed, [10]Paediatrics, NUSMed , [11]CenMed, NUSMed

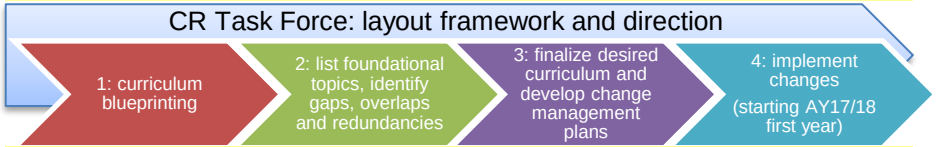
Introduction

The Yong Loo Lin School of Medicine (NUS Medicine) curriculum is characterized by a rich history of educating doctors for service to the nation since 1905. To face today's challenges in teaching and learning medicine, and to better serve future healthcare needs of the nation, our curriculum and pedagogy needs to be nimble and up-to-date, and an outcome-based curriculum fulfils these needs (Harden, Davis, & Crosby, 1999).

Concurrently, the introduction of ACGME-I post-graduate residency training has opened up opportunities for undergraduate medical training to be aligned with the core competencies of residency training (Ministry of Health, 2014). Building upon the work of curriculum revision in 2008, NUS Medicine begun our attempt at developing an outcome-based curriculum in 2012.

Methodology

An Outcome Definition and Curriculum Rationalisation Task Force (CR Task Force) was set up to define desired outcomes, and layout the framework and direction for curricular reform through a 4 stage approach:

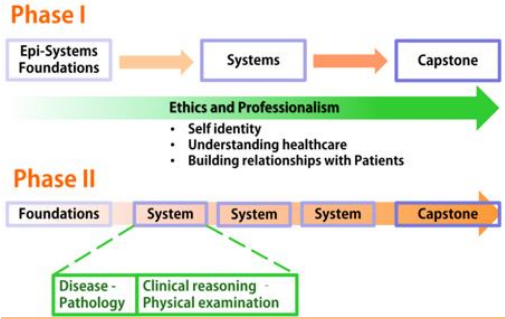


Over 300 content experts and core educatiors from 22 Academic units were involved in this effort through the 28 curriculum review workgroups, each was centred around either body systems-based, competency-based, or health care setting-based curriculum topics. Each were empowered through stage 2 to 4: they proposed the desired curriculum, reviewed the curriculum in an integrated fashion, made change recommendations and implement them as appropriate.

Results

The curriculum and its outcome is clearly defined and communicated through The Compass: an EPA guide for teaching and learning (2018), in which the outcome of the curriculum was summarized in the 23 Knowledge, Skills and Attitude statements; the details are defined using the Entrustable Professional Activities (EPAs) framework applied to about 400 representative topics.

The resulting curriculum are characterized as:



Phase III to V

- Spiral, just-in-time, 5 year perspective for body-systems based topics
- Conform to the NMUCC recommendations (MOH 2014)
- Appreciate care across time, space, disciplines and acuity
- Interprofessional education opportunities
- Optimise hospital posting capacity
- Enhanced longitudinal learning experience

Conclusion

There were two major obstacles encountered in our approach to curriculum development, firstly the managing the massive amount of curriculum data generated, to be disseminated and queried for the exercise; and secondly leading the large number of educators and trying to align their efforts.

However, by persevering in this approach, the exercise had blossomed into a faculty development effort and allowed for the much needed conversation to explore horizontal and vertical integration of knowledge between highly specialized disciplines in the school.

D1120

What's next? call doctor or…?

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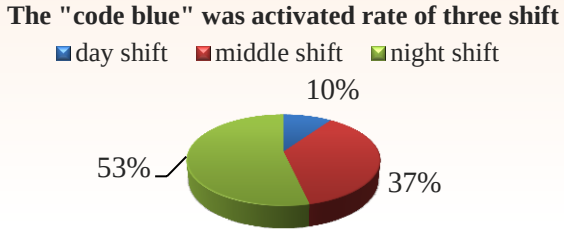
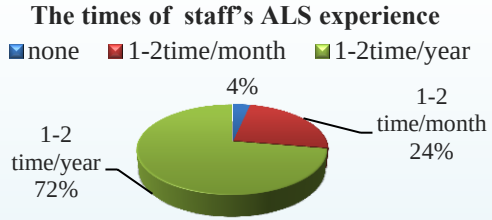
1 Hualien Tzu Chi Hospital Buddhist,Tzu Chi Medical foundation 2 Department of nursing 3 Surgical Intensive Care Unit

Back ground





Results

1) After-test is 0.11% higher than Pre-test on the total average
2) The most progress score of the projects are "The job completion of primery nurse"&"Understanding of everyone's assignments in ALS"

Aim

- To improve the nurses' ALS ability
- Nurses' ability to deal with emergencies
- To practice nurses' TRM skill

Method

Part A Self-evaluation	
Serial number	Item
1	I can understand and promptly find clinical warnings
2	In an emergency I can use the ISBAR skills to report changes in the patient's condition to the physician
3	In an emergency I can complete the primary nurse task.
4	In an emergency I can complete the Assisted nurse task.
5	I understand the ALS process and play my part
6	I implemented IPCP well
7	How do you feel about your ability to deal with emergencies? Point (1~10point)

Part B satisfaction survey	
Serial number	Item
1	Are you satisfied with the simulation team performance?
2	Are you satisfied with the environment and equipment arrangement?
3	Do you think the introduction before the beginning of the scenario clearly enough?
4	Would you like to participate in such a course again?
5	Is this training helpful to you?
6	How satisfied are you with this training overall?

Conclusion

1) ALS scenario education with hight- task simulation was helpful teamwork and to improve the nurse's self-efficacy of critical management
2) In the next stage , We will expand all units to training staffs to enhance ability of TRM
3) To keep track effectiveness of ALS quality

Chao,Chi Yen | E-mail:chiyanchoa@gmail.com

D1121

Demonstration of a Sustainable Resident-led Internal Medicine Post-Graduate Examination Preparatory Course

Benjamin Yong-Qiang Tan[1], Nicholas JH Ngiam[1], Darius LL Beh[1], Ching-Hui Sia[1], Mark Muthiah[1], Adrian CL Kee[1]
[1]Internal Medicine Residency Programme, Department of Medicine, National University Health System, Singapore

BACKGROUND

MRCP PACES is a milestone post-graduate examination designed to assess knowledge and clinical skills of trainees in Internal Medicine. Attending PACES preparatory courses professionally organised by commercial companies is a useful adjunct for candidates taking the examination. In response, the NUHS Internal Medicine Chief Residency Program organised a non-profit inter-sponsoring institution course focused on the Station 5 component of PACES for Internal Medicine Residents. Station 5 encompasses a range of clinical competencies through an integrated clinical assessment station. We aim to demonstrate a sustainable near-peer teaching effort through a resident-led preparatory course.

METHODS

From 2016-2017, two runs of the course were conducted by near-peer educators. Planning the case scenarios, recruiting tutors and patients was conducted over half a year. Structured questionnaires administered pre- and post- course were administered. To ensure sustainability, participants of the 2016 edition of the course who have passed the examination were invited to be examiners in the 2017 edition.

RESULTS

75 candidates participated in the course over 2 runs. Mean age was 27.01 ± 27; with 45% being male. Mean attempt number for their exam was 1.23 ± 0.63.

Prior to the course

- 90.7% (n=68) of participants perceived station 5 to be stressful
- 78.7% (n=59) felt Station 5 was more stressful than other PACES Stations
- 17.3% (n=13) felt confident in Station 5

After the course

- 76.0% (n=57) of participants were more confident for Station 5
- Perceived confidence levels increased significantly ($p<0.001$, by Wilcoxon signed rank test) from a mean of 2.6±1.0 to 4.1±0.9 on a 5-point Likert scale
- All participants (100%, n=75) felt the course was relevant to their exams, useful for clinical practice and would recommend the course to their friends.
- All participants (n=75, 100%) felt resident tutors were effective and well-equipped

CONCLUSION

We demonstrate the effectiveness of a sustainable near peer resident-led preparatory course. Further study to evaluate and compare such a course with professionally run preparatory courses should be conducted.

D1122

CROSS SECTIONAL STUDY OF PERCEPTIONS OF QUALITIES OF A GOOD MEDICAL TEACHER AMONG MEDICAL STUDENTS FROM FIRST TO FINAL YEAR

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Introduction

Defining the characteristics of a good medical teacher has implications for faculty selection and development. We aimed to determine **desirable teacher characteristics** as perceived by medical students, and whether this **differed with stage of training**.

Methodology

- Previously validated questionnaire from Melaka Manipal Medical College modified with permission from original authors[1].
- Modified questionnaire (containing 35 characteristics derived from existing literature, each rated on 5 point Likert scale) validated in pilot pool of 69 medical students with **Cronbach's Alpha of 0.90** suggesting good internal consistency.
- Modified questionnaire **administered to 917 students** across all years of study (Year 1 to Year 5) at Yong Loo Lin School of Medicine, National University of Singapore.
- Students grouped into pre-clinical (Years 1-2) and clinical (Years 3-5) years for analysis for differences across years of study with Kruskal-Wallis test and for trend with chi-squared test.

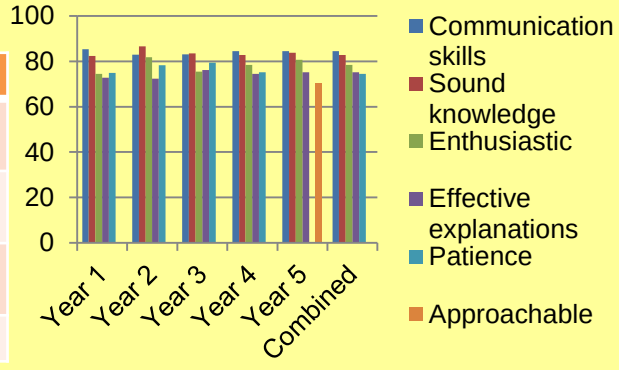
1. Singh S et al. 2013. Qualities of an effective teacher: what do medical teachers think? BMC Med Educ. 13:128.

Results

Characteristics emphasised by clinical students compared to pre-clinical students

Characteristic	P-value
Constructive criticism	<0.001
Makes students feel empowered	0.001
Aware of students' interests and needs	0.001
Approachable	0.005

Top 5 characteristics by year of study



Conclusion

Our results show that in an Asian (Singaporean) medical school, the top teacher characteristics desired by medical students were **consistent across all years** of study and represent a focus area for further research. Characteristics emphasised in clinical years **facilitate active learner participation**, consistent with a shift from cognitivist strategies to constructivist strategies.

D1123

INTERACTIVE AND PARTICIPATORY SESSIONS TO FACILITATE BIOSTATISTICS LEARNING BY MEDICAL UNDERGRADUATES

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Introduction

Statistics is an essential aspect of undergraduate medical curriculum. Needed for their role as a clinician and researcher. But student dislike statistics. Mostly statistics is taught through didactic lectures. Involving student while teaching statistics would increase their interest and understand. Hence this study was undertaken to prepare a module which actively involves students during statistics teaching.

Methodology

Phase I: Needs assessment, finalisation of the objectives of the biostatistics sessions: (1) one-to-one interview of students who had traditional biostatistics teaching, (2) Delphi technique to finalize the objective of the sessions

Phase II: Outcome based lesson planning of the sessions and its implementation: used principles of adult learning, group work, games had seven sessions

Phase III: Qualitative and quantitative assessment of the impact of the sessions: (1) one to one interview of students, (2) retro-pre assessment (3) reaction of students to the sessions (3) assessment at the end of the learning unit

Results (14 Arial)

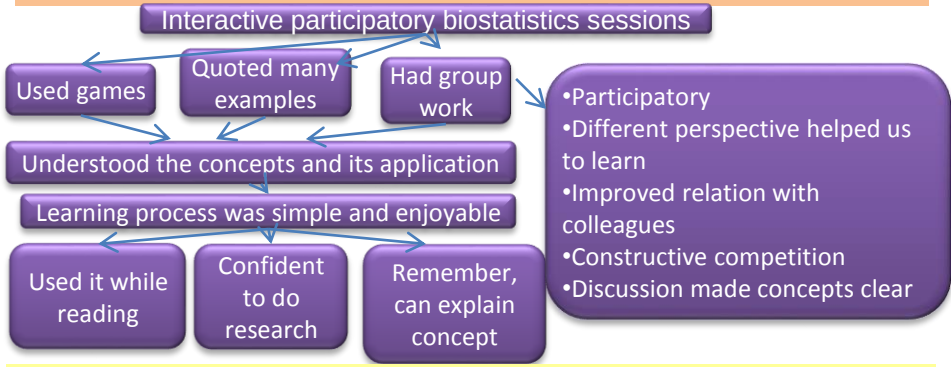


Fig: Learning experience of students who underwent the participatory biostatistics module (one-to-one interview)

Phase 1: students disliked statistics, felt it is not related to medical profession

Phase 3: Reaction: 90-96% student felt the contents were just right, 91-100% felt they were engaged in the sessions

Learning: Test scores better in the students who underwent the interactive module (p=0.002)

Conclusion (14 Arial)

Students benefited by small group learning, active involvement, emphasizing on application.

D1124

IMPACT OF NIGHT FLOATER SYSTEM ON PATIENTS CARE;PAEDIATRIC HEALTH CARE PROVIDERS EXPERINCE IN ACGMEI PROGRAM IN QATAR

Eman Al Maslamani, Sohair Elsiddig, Muna Maarafiya ,Myra Batool, Ahmed Alhammadi

Department of Pediatrics, Hamad Medical Corporation. Doha, Qatar

Background

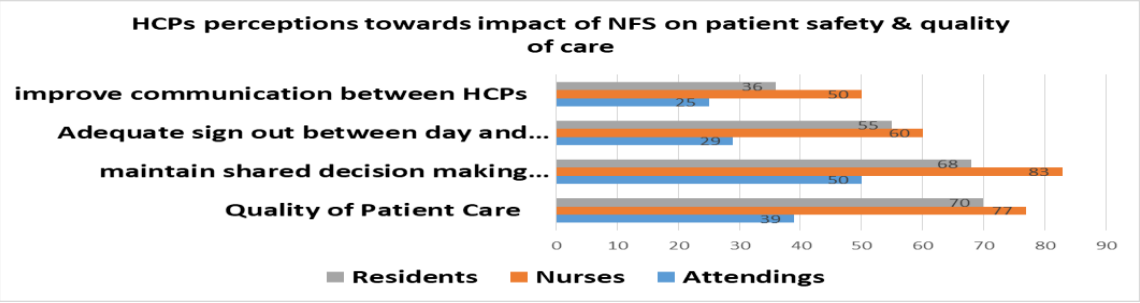
Night Floater System (NFS) has been adopted by many postgraduate residency training programs to meet duty hour regulations. Recent studies show that (NFS) can enhance residents wellbeing, learning experience and reduced sleep deprivation, fatigue and medical errors. Night Floater call has been implemented to the pediatrics residency program at Hamad Medical Corporation (HMC) - Qatar during the academic year 2015-2016.The purpose of this study to examine paediatric Health Care Providers perceptions regarding the NFS on patient safety and quality of care.

Method

We administered questionnaires to pediatrics HCPs (residents, nurses and attending) on clinical teaching unit at Hamad Medical Corporation- main tertiary teaching hospital in Qatar. The survey designed after reviewing related literature on the subject. The questionnaire uses a 3-point Likert scale. It included details of HCPs demographics, impact of (NFS) on patient care and safety during on-call time

Results

110 questionnaires (47 residents, 28 attending residents and 35 nurses) were analyzed. Overall majority of HCPs perceived that quality of patient care improved in NFS (64.5%) , in fact both residents and nurses agreed that quality is better (70% and 77% respectively). Compared to (39%) of attending (P value 0.006). Nurses strongly believed that shared decision-making between the day team and the night float team is maintained compared to residents and attending (83%, 68% and 50% respectively) (P value 0.07).Both nurses and residents perceived that continuity of patient care improved in NFS (80% and 83% respectively while only (40%) of attending believed on that (P value 0.002). (54%) of staff agreed, that “Sign-out” about previously admitted patients is adequate (nurses 60%, residents 55% and attending 29%). Finally, on 48% of participants said that communication between physician, nurses and patients is improved (nurses 50%, residents 36% and attending 25%).



Conclusions

Our study shows that pediatric residents and nurses are favorable towards the Night Floater System than attending. They perceive NFS is beneficial for promoting quality and continuity of the patient care .Our findings provide useful information to assist the residency program to balance duty hour regulations with patient care requirements.

D1125

Setting up an area wide Simulation Centre

H. John FARDY[1], Pauline GAETANI[2]

[1]Ex-Director of ISHEC, Illawarra and Shoalhaven Local Health District (ISLHD), Australia, [2] Manager of ISHEC, ISLHD, Australia

Introduction

- Through a government grant, a building was built and 2 years (tied) funding was given for equipment and commissioning staff.
- Opened in March 2013
- The task then became to make a fully functional, and state of the art, simulation centre.

Methodology

Staff
Advanced Trainees
Equipment
Faculty
Support
Supporters

Results

Eight (8) Advanced trainees (Internal Medicine and Emergency) have proven to be our greatest local impact on the Health Care system. They have developed teaching, presentation and educational skills; have worked with others for inter-professional development; mandated and monitored technical competence with Simulation equipment

Inter-professional sessions are ‘special’ : Hours delivered (2013 to end June 2017) with Inter-professional Applicability = 76,550 hours

Attendees by profession (i.e. staff) : Medicine 32%; Nursing 43%; Midwifery 2%; Dietetics 1%; Occupational Therapy 2%; Pharmacy 1%; Physiotherapy 4%

Conclusion

Complex
Ask others
Take risks
Identify your supporters in Administration
Identify your ‘helpers’
Things to Learn from the experience

Learning Differently During Simulation – The different takeaways by doctors and nurses from in-situ simulation sessions in an Emergency Department

D1126

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Department of Emergency Medicine, Singapore General Hospital

1. Introduction

As part of improving team cohesiveness and clinical skills amongst junior doctors and nurses in our Emergency Department (ED), a simulation programme was introduced for 9 months in 2016. Scenarios were based on common cases managed in the resuscitation room, and these were held in our resuscitation room with a low fidelity manikin. Senior doctors and nurses conducted the sessions and gave participating junior members of the department feedback at the end of each session.
We examine the different responses between nurses and doctors at the end of the programme.

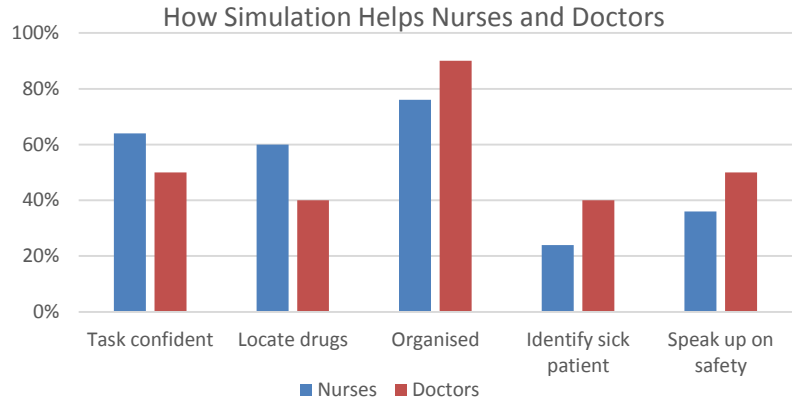
2. Methodology

An anonymous survey of learners was conducted three months after the programme ended. It consisted of multiple choice and free response questions which were categorised under “reaction” and “learning and behaviour”, according to Kirkpatrick’s model of evaluation. A total of 25 nurses and 10 doctors were surveyed of which 92% attended 2 or more sessions.

4. Conclusion

Simulation benefits both doctors and nurses in the ED. However differences in learning may be due to training background. Educators need to be cognisant of these and design scenarios accordingly.

3. Results



Our survey has shown that both nurses and doctors benefit from simulation by being more organised and confident in their assigned roles and being better at teamwork. However, the focus of nurses is on performing tasks and locating equipment and drugs, possibly due to traditional perspective roles and training. Given the close contact they have with patients, they are integral in identifying ill patients and raising concerns regarding patient safety.
Doctors did not fare as expected on identifying a sick patient and speaking up on safety issues, reflecting possibly a lack of awareness of crisis resource management.

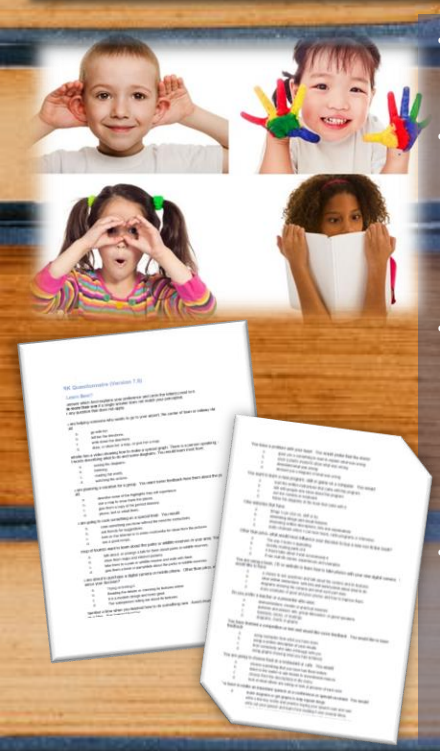
D1127

THE LEARNING STYLES OF ORTHOPAEDIC RESIDENTS & THEIR ORTHOPEDIC IN-TRAINING EXAM PERFORMANCE

Chen Xi [1], Christopher Pearce [1,2]

1. Dept. of Orthopaedic Surgery, Ng Teng Fong General Hospital 2. Dept. of Orthopaedic Surgery, National University Hospital, Singapore

Introduction

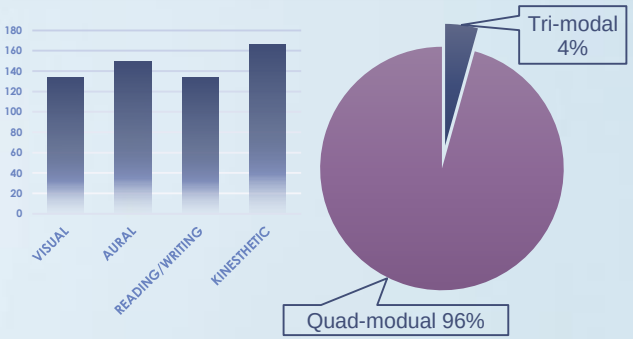


- The theory of learning styles asserts that learners have distinct preference. Study showed that given the well tailored teaching methods, students' learning efficiency could be maximized.
- The validated VARK questionnaire was initially developed by Fleming in 1987, which has raised attention in medical education nowadays. The model categorizes learning as visual(V), aural(A), read/write(R), kinaesthetic(K) or multimodal(MM). A learner can prefer to only single dominant modality, or have preference for a combination of modalities.
- In National University Singapore, our orthopaedic residents represent a broad spectrum in terms of age, educational background, experience, culture, ethnicity and so on. This diversity is great, however, it also brings in more challenge for their mentors to help them reach their educational requirement individually. The application of learning styles in the realm of orthopaedic training program is yet to be inspected.
- In this study, we conducted a survey based on VARK questionnaire amongst all our orthopaedic residents from year two to year six in NUH(N=22), and correlates their learning style with the Orthopaedic In-Training Examination Score(OITE) in 2016, as well as their 2016 year-end assessment.

Material and Methods

- Inclusion: all our orthopaedic residents from year two to year six in NUH
- Exclusion: Absence of OTIE score
- IRB & Inform consenting
- Data collection: the VARK questionnaire, year in residency, age, gender, 2016 OITE score and the 2016 year-end assessment score.
- Statistical analysis: Demographic analysis; Pearson's correlation; Student's t-test; Analysis of variance.
- P value less than 0.05 considered significant.

Results



- 22 residents, 2 females, 20 males. 21(95.45%) quad-modal learning style.
- Residents with kinaesthetic dominant learning style had superior feedbacks in terms of year-end performance assessment(P=0.033<0.05).
- Moderate correlation between kinaesthetic learning and the evaluation of system-based practice(r=0.51), as well as the international PGY percentile (r=0.50).
- Reading dominant learning style didn't promise better result in OITE.
- The role of aural learning is relevant to better results in problem-based learning(r=0.53).

Learning style	Professionalism	Communication skills	Medical knowledge	Practice based learning	Patient care	System based practice	Total
K(VA)R	6.67	6.56	6.42	6.44	6.60	6.56	39.24
KRVA	7.78	7.11	7.42	6.44	6.60	6.44	41.79
KVAR	8.67	8.44	8.58	8.33	8.40	8.44	50.87
KAVR	7.78	8.00	6.75	7.22	7.40	7.33	44.48
KVRA	7.56	7.56	6.33	7.00	7.13	7.22	42.80
RKAV	7.89	7.56	7.25	7.56	7.87	8.00	46.12
VAKR	8.22	8.11	7.25	8.00	7.93	8.00	47.52
VA(RK)	8.78	8.67	7.67	8.00	8.07	8.22	49.40
KARV	7.00	6.89	7.08	6.89	7.00	7.00	41.86
KAVR	8.89	8.67	8.58	8.67	8.47	8.44	51.72
KRVA	7.22	7.11	8.17	7.33	7.13	6.78	43.74
RA(KV)	8.22	8.22	8.17	8.11	7.93	8.11	48.77
RVA	8.00	8.00	6.50	7.00	8.00	8.00	45.50
R(AKV)	7.89	8.11	7.17	7.67	7.60	7.44	45.88
R(AK)V	7.56	7.67	7.58	7.44	7.53	7.33	45.12
AKVR	8.33	8.33	8.00	8.33	8.00	8.33	49.33
VRAK	9.00	9.00	8.25	9.00	9.00	8.67	52.92
(VAR)K	8.67	8.00	7.50	8.00	7.80	8.00	47.97
(VAK)R	8.00	8.00	8.00	7.33	7.60	7.00	45.93
VAKR	8.00	8.22	7.17	7.44	7.53	7.56	45.92
(RK)AV	9.00	9.00	9.00	9.00	9.00	9.00	54.00
(AK)VR	8.00	8.00	7.92	8.00	8.27	8.00	48.18

Discussion

- Multi-modal learning allows the residents to acquire different styles of learning in the clinical environment.
- Better performance of the 'kinesthetic's revealed the "hands-on" nature of orthopaedic surgery.
- Leveraging learning styles could be a possible strategy for educators to improve efficiency.
- The questionnaire is a catalyst for the teachers and students to reflect on their own preferences.
- Limitations of our study: Underpowered, regional, size-based, or affiliation-based differences.

D1128

AUGMENTED REALITY FOR SIRENOMELIA

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[2]Keio-NUS CUTE Center, Smart System Institute, National University of Singapore, Singapore 119613

Introduction: Sirenomelia (also known as 'Mermaid Syndrome') is an extremely rare and fatal congenital anomaly, typically characterised by fusion of the lower extremities thus resembling a mermaid's tail. It was first reported by Rocheus in 1542. Sirenomelia usually result in abortion, stillborn or expiration after birth. The presence of a single umbilical artery could possibly be the main reason behind this anomaly, although the etiology remains unclear. To enhance teaching and learning we introduced augmented reality with a sirenomelia case so that the audience is able to obtain more information about the case from 2D MRI and 3D-CT images.

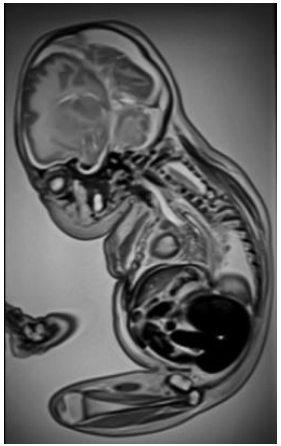
Method: The application must be downloaded on the android device. Point the device to the image to track it. Interactive multimedia such as enlarged images, videos and information about image will be overlaid on the android device. This creates an interactive augmented learning experience.

Conclusion: In a bid to enhance teaching and learning, we hope to employ AR in other pot specimens and 2D images. The long term objective is to make this application available in IOS devices.

Results:

Imaging Modalities

MRI



3D-CT

Sirenomelia baby from Anatomy Museum

Acknowledgements: We are very grateful to Dr Jeevesh Kapur, Prof Swee Tian Quek from Diagnostic Radiology, National University Health System (NUHS) for the MRI and CT imaging. We are also thankful to Jieying Mandi Lee, Lin Yong, Teong Leong Chuah from Keio-NUS CUTE Center, Smart System Institute, National University of Singapore.

D1129

Interprofessional Education: the Pharmacist Shadowing for Interns

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Introduction

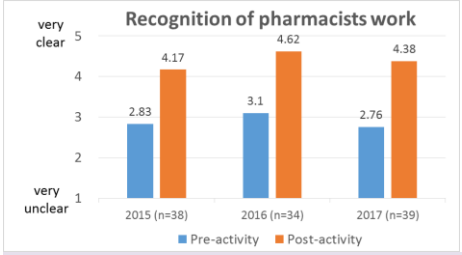
To know the function and role of different professionals in a patient care team is one of the objectives of inter-professional education (IPE). The pharmacists shadowing is a novel and interesting activity for interns to achieve this purpose. We reported the experience and 3-year outcome of this activity in our hospital.

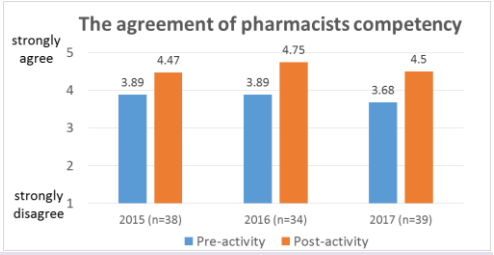
Methodology

For all medical interns, we arranged a half-day pharmacists shadowing in their orientation training. The activity was divided into two parts. First, the routine pharmacy service was introduced, especially focused on the work which physicians would participate in or utilize. Then interns visited different sections of department of pharmacy, including inpatient pharmacy, outpatient pharmacy, emergency pharmacy, chemotherapy and parenteral nutrition compounding units, to experience the daily work of pharmacists. Pre- and post-activity questionnaires with 5-point Likert scales were used to evaluate the outcome.

Results

From 2015 to 2017, 113 interns attended the activity and 111 questionnaires were returned. The mean score of recognition of pharmacists work increased from pre-activity 2.9 points to post-activity 4.4 points (1 very unclear/2/3/4/5 very clear). The agreement of pharmacists competency also rose from 3.8 to 4.6 points (1 strongly disagree/2/3/4/5 strongly agree). The satisfaction about this activity was 4.5 points (4 satisfied/5 very satisfied).





Conclusion

Pharmacists shadowing increased the recognition and agreement of pharmacists' service. With this pedagogical activity, interns could understand the role and responsibility of pharmacist in the medical team. We believe it would be helpful to implement effective interprofessional practice in the future.

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e-Poster ID: D1130

HACKING HACKATHONS: PREPARING THE NEXT GENERATION FOR THE WORLD OF HEALTHCARE TECHNOLOGY

Lyndon MP[1,2,3], Cassidy MP[4], Celi LA[5], Hendrik L[2], Dagan A[2].

1: The University of Auckland 2: SANA, MIT 3: Harvard T.H Chan School of Public Health 4: TERC 5: MIT Critical Data

Background

- Healthcare hackathons are intense, short, collaborative events focused on creating innovative technology based solutions.
- These events are being increasingly used as a model for cross-disciplinary collaboration and learning.
- The aim of this study was to explore high school student learning experiences during a healthcare hackathon.
- By optimizing their learning experiences, we hope to prepare a future workforce that can bridge technical and health fields and work seamlessly across disciplines.
- The "Hacking Hackathons" event was hosted at the Laboratory for Computational Physiology at MIT, Boston, in August of 2016.

Description of Hackathon

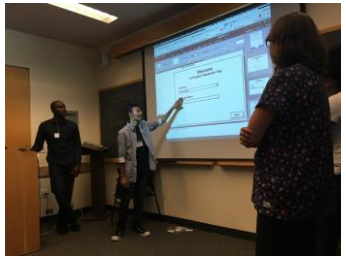
- The 48 hour event had two main goals: the evaluation and improvement of the hackathon model in spurring global mobile health ('mHealth'), and the exploration of hackathons as tools for engaging high school participants in design thinking, and science, technology, engineering, and maths education.
- 18 high school students based in Boston, USA, participated. The age of the students ranged from 15 to 18. Most were multilingual.

Research Methods

- A qualitative exploratory study utilizing focus group interviews was conducted.
- Eight high school students from the hackathon were invited to participate in this study through convenience sampling
- Participating students (n=8) were allocated into three focus groups.
- Semi structured interviews were completed, and transcripts evaluated using inductive thematic analysis.

Hackathon Activities

During the Hackathon, teams developed a digital prototype for their solution to the hackathon challenge using wireframing software. Teams presented their solution prototypes and recommendations to an audience of fellow participants, mentors, and members of the MIT Sana and Program for Global Surgery and Social Change.



Key Research Findings

Focus Group Quotes

THEME 1

"It was us working like grown-ups. It was actually really exciting to work with people who was valuing what you're saying as an equal..."

"I think it's a great opportunity to work with smart people. I never think that we can work with engineers and doctors together."

THEME 2

I think that in terms of learning experience, it was great...I felt like seeing how [experts made apps] in the real world, to me was the most important part of going [to] this."

THEME 3

"Judging by the name of the hackathon, I would have thought it would have been a lot more computer-based... it was misleading."

Focus Group Themes

Through the structured analysis of focus group transcripts three major themes emerged from the data: (1) Collaboration, (2) Transferable knowledge and skills, and (3) Expectations about hackathons. These highlight strengths and barriers when bringing this multidisciplinary approach to students and the healthcare community.

Theme 1: Collaboration

One purpose of a hackathon is to bring together diverse groups of people into functional teams. Participants in this study discussed collaborative moments being cross-generational, cross- cultural, and cross-disciplinary.

Theme 2: Transferable knowledge and skills

The Hackathon provided high school students the opportunity to learn new knowledge and skills, and see how they could be applied to real world situations.

Theme 3: Hackathon expectations

Although students were satisfied with their overall experience, their expectations for the event were not always met.

Conclusions

This study found that students were empowered by the interdisciplinary experience during a hackathon and felt that the knowledge and skills gained could be applied in real world settings. However, addressing student expectations of hackathons prior to the event is an area for improvement. These findings have implications for future hackathons and can spur further research into using the hackathon model as an educational experience for learners of all ages.

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D1131

Dental student feedback on a blended learning approach

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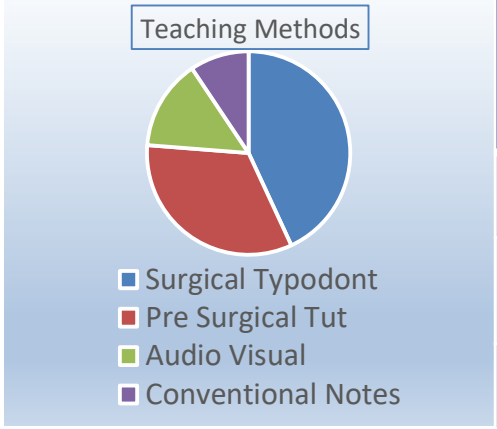
Introduction

Dental students are taught a wide range of clinical procedures ranging from minimally to grossly invasive. Surgical removal of teeth being one of the most invasive. 'Blended learning' occurs when information is presented in a variety of forms alternative to traditional teaching methods. A blended learning approach was adopted to teach surgical removal of impacted mandibular third molars. An evaluation of the Oral Surgery module was done in order to ascertain student views on, among other, the various teaching modalities used in the course. The study was conducted at the Faculty of Dentistry, University of the Western Cape (South Africa, 2016). Aim: To assess dental students opinions on different learning 'methods' for the removal of impacted mandibular third molars.

Methodology

A random sample of 24 final year dentistry students participated who completed the contact session. The contact session incorporated the following teaching methods: Conventional teaching styles, a pre-surgical tutorial, audio-visual aids as well as surgical typodont simulators. A cross sectional, descriptive study using both qualitative and quantitative approaches were done. A self-administered questionnaire which included open and close ended questions were used to collect data. Ethics approval was obtained(reg. HS/16/8/14). Anonymity and confidentiality was assured and participants could withdraw from the study at any point.

Results



Teaching Methods	Improved Surgical Skills	Improved Confidence Level
Surgical Typodont	75%	92%
Pre-Surgical Tutorial	81%	78%
Audio Visual Aids	81%	78%

42% of the participants felt that the conventional notes did not prepare them well enough for the surgical procedure. All students mentioned that it was useful to observe a surgical procedure before performing it. Students preferred watching video clips on YouTube than from their academic teaching site. Students also reported that the surgical typodont does not simulate the oral environment, as there are no blood or saliva present.

Conclusion

The surgical typodont simulator was found to be the most useful tool in teaching this surgical procedure followed by the pre- surgical tutorial.

ID: D1132

SIMULATION TRAINING FOR MEDICAL EMERGENCIES IN DENTISTRY

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b Yong Loo Lin School of Medicine, National University of Singapore

INTRODUCTION

One of the greatest anxieties of dental students in clinical situations was dealing with medical emergencies[1]One of the greatest anxieties of dental students in clinical situations was dealing with medical emergencies[1]

A compact dental curriculum often does not allow students opportunities to engage in management of emergencies in the school setting

Undergraduate Curriculum mostly lacks opportunities for dental students to perform actions when faced with such emergencies

Emergencies are rare

Realistic simulation training in management of medical emergencies is an effective adjunct to traditional didactic teaching[2].

Methodology

Cohort: Final Year Dental students

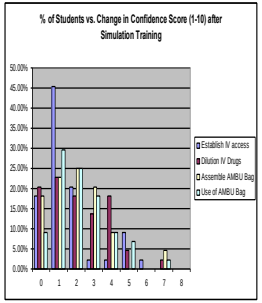
Pre Course MCQ → **Pre Course Survey** → **Refresher Small Group teaching** → **Post Course Survey**

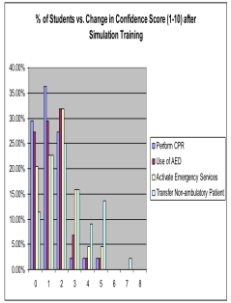
Simulation stations
Four scenarios

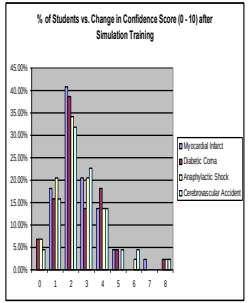
- **Acute Myocardial Infarction** (using a jointed mannequin in a dental chair setting)
- **Diabetic coma** (using a Standardized Patient)
- **Anaphylaxis shock**
- **Stroke**

A Post-course MCQ was administered where the questions were repeated but the sequence changed and a feedback survey was conducted. They were also surveyed on their confidence level in managing the 4 scenarios for medical emergencies.

RESULTS







- There was a marked improvement in the pre and post course MCQ scores. (Pre-course MCQ score 10-16, mean 13.4; Post-course MCQ score 11-19, mean 16). The difference was highly statistically significant ($P < 0.001$).
- Students unanimously gave positive feedback.
- Reported confidence (analogue score 0-10) for acute myocardial infarction, diabetic coma, anaphylaxis shock and stroke are as in illustrated in the graphs to the left.
- 78% felt confident in managing real life medical emergencies in the dental office following simulation training
- 95% felt their knowledge of managing medical emergencies was inadequate

CONCLUSIONS

Simulation type or hands-on training in a controlled environment improves understanding and management of medical emergencies in the dental office..

REFERENCES

1. Broadbent JM, Thomson WM. The readiness of New Zealand general dental practitioners for medical emergencies. N.Z. Dent. J. 2001; 92(429): 82-86

2. Newby JP, Keast J, Adam WR. Simulation of medical emergencies in dental practice: development and evaluation of an undergraduate training programme. Aust. Dent. J.2010; 55(4): 399-404

D1133

How does Community Medical Training influence resident doctors' professionalism?

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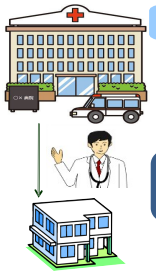
Background

Japanese Residents have to train at both the core teaching hospitals and cooperative training facilities. A one-month Community Medical Training (CMT) is mandatory at local training facilities.
CMT can recognize the importance of being doctors. However, the influence of CMT on the attitudes of resident doctors remains unclear.

Japanese Clinical Training System



Core Teaching Hospital
Internal Medicine
Emergency etc.
(2 years)

Cooperative Training Facilities
Community Medicine
(1 month; mandatory)

Methodology

We conducted a questionnaire survey of 484 residents who had completed CMT between 2015 and 2016.

◯Responses Contents
- Attributes including *Chiiki-waku**
- Learning of the items in the Basic stance and attitudes as a medical practitioner[1)] and Medical Professionalism in the New Millennium[2)]

Answers regarding CMT were compared with those regarding Core Teaching Hospitals Training (CTHT) using the Wilcoxon signed-rank test.

*Chiiki-waku**(regional quotas): Quota entrants receive a scholarship from the prefecture government. In exchange, after graduation, they temporarily practise in that prefecture, including its rural areas.

Results

	Chiiki-Waku (n=74)	Others (n=105)
Basic stance and attitudes as a medical practitioner (CMT is considered superior from CTHT（%）)		
Communication with other physicians	37%*	23%
Lifelong education	31%**	17%
Medical Professionalism in the New Millennium (11-point Likert scale 10:best 0:worst at CMT)		
The principle of patient autonomy	7.3*	6.7
The principle of social justice	7.6*	7

** p<0.01 *p<0.05

1, CMT was not useful in fostering professionalism compared to CTHT.
2, Residents who are Chiiki-Waku acknowledged the following benefits of CMT: (a) communication with other physicians, (b) lifelong education, and (c) the principle of patient autonomy and social justice

Discussion and Conclusion

Residents from *Chiiki-Waku* are obliged to practice in rural areas, and they are conscious of the need to develop the necessary skills and attitudes required to work in these areas. Therefore, CMT benefits them.
The results suggest that **improving trainee motivation before CMT can foster their professionalism at local medical institutions.**

1) http://www.mhlw.go.jp/english/policy/health-medical/medical-care/dl/150407-03.pdf
2) Lancet 359 (9305): 520-522, 2002.

D1135

RADIOPATH MUSEUM - A FIRST-EVER VIRTUAL RESOURCE INTEGRATING GROSS PATHOLOGY WITH DIAGNOSTIC IMAGING

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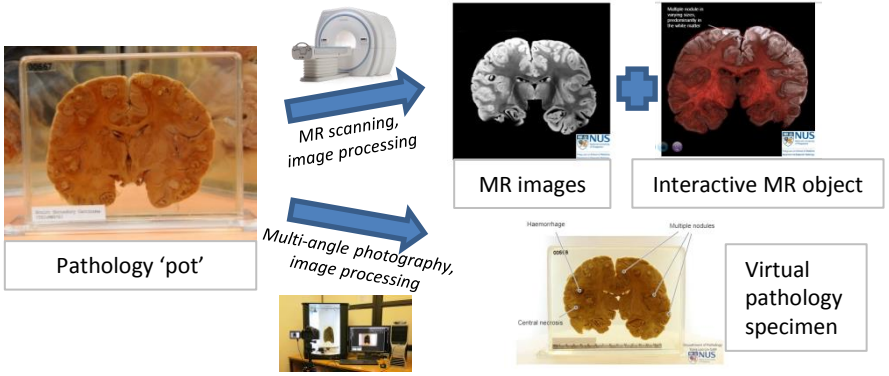
[1]Department of Pathology, NUH, Singapore, [2]Department of Diagnostic Imaging, NUH, Singapore, [3]Department of Diagnostic Radiology, NUS, Singapore

Introduction and Aim

Diagnostic imaging reflects gross pathology in the living patient.

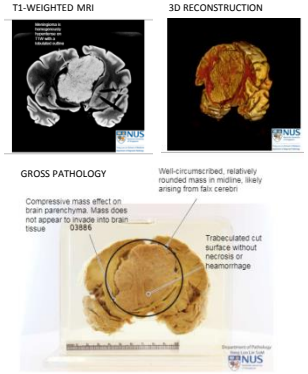
Our aim: To create the first-ever unique, integrated radiology and pathology museum, by demonstrating fully annotated gross pathology specimens with reconstructed MR images of the same specimens)

Methodology



Results

BRAIN MENINGIOMA



http://pathweb.nus.edu.sg/radiopath-museum/

140 radiopathology paired virtual specimens

One specimen = 3 interactive images:

1) Sequential MR images
2) Fully annotated virtual pathology specimen
3) Interactive MR object

Sample CNS chapter

Conclusion

The use of MR images simulates diagnostic imaging in the live patient. This, paired with gross pathology, will help enhance students' understanding of the morphology and clinicopathologic correlates of disease.

D1137

MENTORING ENVIRONMENT (ME)-A PROPOSED MODEL FROM A THEMATIC REVIEW

Hee Jia Min[1], Ong Zheng Xuan[1] , Simone Quek[1], Ying Pin Toh[2], and Lalit Kumar Radha Krishna[3],
[1]Yong Loo Lin School of Medicine, Singapore, [2]Family Medicine, National University Health System, Singapore, [3]Palliative Medicine, National Cancer Centre, Singapore

Introduction

Nurturing mentoring relationships which sit at the heart of effective mentoring programs pivot on the mentoring environment (ME). An effective understanding of the mentoring environment will better advance mentoring programs.

Methodology

PubMed, ScienceDir-ect, ERIC, Cochrane Library Databases

Thematic Analysis of 70 Articles identified 2 themes – internal and external factors

Results & Discussion

External Structural ME
Administrative support by the host organisation optimises local structural and relationship factors

Internal – Mentor-Mentee Relationship
Interacting relationship, mentor and mentee factors determine relationship culture and quality.

Internal - Structural Framework
Design of the mentoring program and mentor – mentee meetings support the relationship development.

External Cultural ME
A supportive and facilitative host organisation Culture nurtures the mentoring relationship

Conclusion

The Mentoring environment (ME) is a dynamic interplay between an external environment and an internal environment, including the mentoring relationship.

External structural and cultural factors (host-organisation determined) deserve wider recognition for their role in the ME.

The data accrued will help design thinking and oversight of the mentoring process.

D1145

LEARNING BEYOND THE CLASSROOM

for MEDICAL ONCOLOGY TRAINEES AT NATIONAL CANCER CENTRE SINGAPORE (NCCS)

POON YL EILEEN[1], LOH WJ KILEY

[1]Division of Medical Oncology, NCCS, Singapore

Introduction

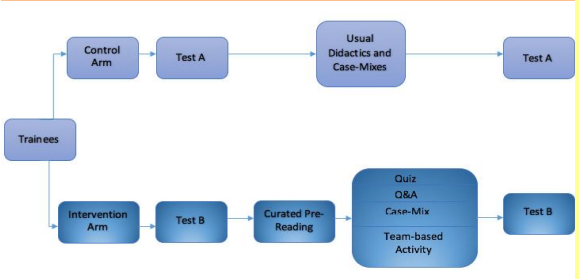
Many find the transition from a resident to a specialist trainee a difficult one. We sought to develop a more effective learning model to help with this.

Hypothesis: A well-constructed team-based teaching-learning education model that is focused and self-directed would be more effective in improving our residents' competency and patient-care.

Primary Aim: Design and initiate an effective education model that promotes learner-centered education.

Secondary Aims: Assessing improvements in: (a)knowledge, (b)learner- and faculty-satisfaction and (c)resource utilization

Methodology

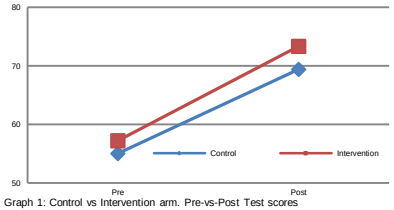


*Team-based activity: Group Discussions, Case-based scenarios, Mock Tumor Boards, Simulated Role-Playing

Both arms had 4 topics of similar difficulty chosen. They were conducted by the same content experts in both arms.

The pre-test is conducted before the start of the teaching of the 4 topics, and the post-test is conducted after.

Results



Graph 1: Control vs Intervention arm. Pre-vs-Post Test scores

All pre-to-post test results showed a trend towards improvement, with the STS results being significant.

Possible confounders: Small number of trainees and not all completed both arms. Lack of protected time.

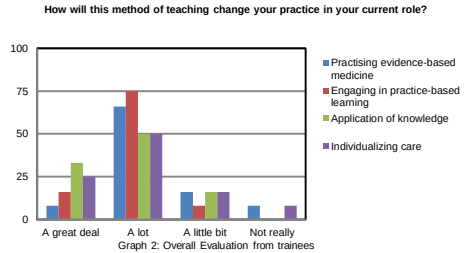
	Osteos	Lung	Gastric	Breast	Overall
Pre-Test Ave [Std Dev]	76.7% [13.2]	50% [13.2]	54.4% [16.7]	56.7% [16.6]	58.9% [11.7]
Post-Test Ave [Std Dev]	78.9% [13.6]	57.8% [26.4]	66.7% [18]	70% [15]	68.3% [16.3]
t-value	0.35	0.83	1.49	1.79	2.18
p-value	0.73	0.43	0.16	0.09	0.06

Table 1: Control Arm Results. N=9. Osteosarc = Osteosarcoma; Breast = Adjuvant Breast CA

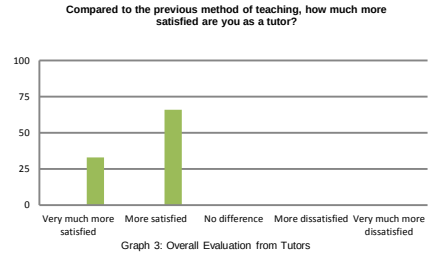
	STS	H&N	Eso	MBC	Overall
Pre-Test Ave [Std Dev]	58.2% [14.0]	50% [16.1]	60.9% [13.0]	69.1% [15.8]	59.5% [11.45]
Post-Test Ave [Std Dev]	68.2% [8.74]	55.5% [13.68]	70.9% [21.66]	75.5% [14.4]	67.5% [10.06]
t-value	2.62	1.03	1.48	1.17	2.16
p-value	**0.026**	0.33	0.17	0.27	0.056

Table 2: Intervention Arm Results. N=11. STS = Soft Tissue Sarcoma; H&N = Head and Neck Cancer; Eso = Esophageal Cancer; MBC = Metastatic Breast Cancer

Overall Evaluation



Graph 2: Overall Evaluation from trainees



Graph 3: Overall Evaluation from Tutors

Conclusion

All forms of learning showed an improvement. But a focused self-directed and team-based teaching-learning model has shown the potential to be more effective. More is needed to revamp teaching methods.

D1140

A STUDY ON FINDING SOLUTIONS TO IMPROVE THE QUALITY OF TEACHING SOME FUNDAMENTAL MEDICAL SUBJECTS IN VIETNAM MILITARY MEDICAL UNIVERSITY

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Department of Exams Accreditation and Medical Education Quality Assurance, Vietnam Military Medical University

Methodology

- Quantitative method
- 875 second-year students studying at Department of Embryo, Department of Physiology, and Anatomy
- Inlcluding: 147 students from Embryo Department, 327 ones from Physiology Department, 401 ones from Anatomy
- 09 lecturers (04 lecturers with over-ten-year teaching experience, 03 ones with from 5 to 10 years of teaching job, and 02 lecturers with under-five-year teaching experience)
- Methodology: Cross-sectional description

Solution Proposal

- Improve the young lecturers' pedagogical competence (more training courses of universtiy teaching methodology, attending the lectures more.)
- The plan of lecturers must be appropriate in term of age and length of service.
- Diversified forms of testing and evaluating the learning results: oral test, group discussion, specimen reading, essay writing...

Results

items \ degrees	Good %	Medium %	Weak %
Giving chances to learners to participate in contributing to lessons	40	43.78	16.22
Encouraging learners to study and research	28.57	45.14	36.9
Diversification of lecturers' testing and evaluating forms	12.91	40.35	46.74

items \ degrees	Yes %	No %
The way to impart knowledge and attract learners' attention	78.57	11.43
The update of knowledge and connecting lectures with reality	78	12

items \ degrees	Fast %	Appropriate %	Slow %
Teaching speed	13.49	81,6	4,91

D1142

NIGHT FLOAT SYSTEM AND MEDICAL ERRORS; PERCEPTIONS AMONG PAEDIATRIC HEALTH CARE PROVIDERS IN ACGME-INTERNATIONAL PROGRAM IN QATAR

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Background

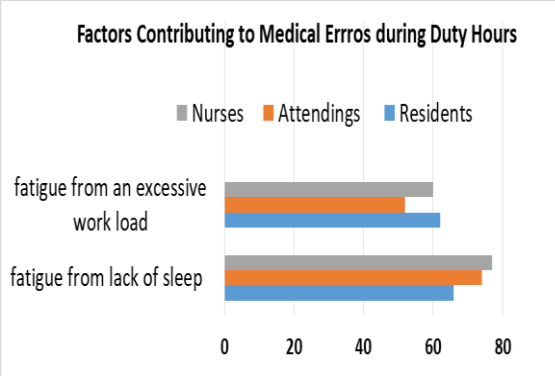
Night float (NF) has replaced the traditional call system in most of postgraduate residency training program worldwide. Literature showed that (NF) enhanced residents' wellbeing, learning experience, continuity of patient care and reduced sleep deprivation, fatigue and medical errors. Night Floater call has been implemented in ACGME-I paediatrics residency program at Hamad Medical Corporation (HMC) -Qatar during the academic year 2015-2016. The aims of study to assess the perceptions and opinions of Paediatrics Health Care Providers (HCPs) towards the (NF) as compared with a traditional 24 hours call system in relation to hospital medical errors. It also evaluates the factors contributing to such events during on duty hours.

Methods

Cross sectional survey was conducted among residents, attending and nurses working on paediatrics inpatients ward at Hamad Medical Corporation, the main tertiary teaching hospital in Qatar. Questionnaire designed after reviewing related literatures on the subject. Questionnaire uses a 4 -point Likert scale. It included details of (HCPs) demographics, perceptions towards both system and factors contributing to hospital medical errors during on-call duty

Result

110 questionnaires (47 residents, 28 attending's and 35nurses) were analyzed; majority of the (HCPs) in favor of (NF) than traditional 24 hours call. Overall participants perceived that more medical errors occurred during the traditional 24 hours call compared to (NF), most common factors may result in such events includes; fatigue from lack of sleep (71%); nurses have higher percentage compare to attending and residents (77%, 74% and 66%, respectively) and fatigue from an excessive work load (59 %) with no significant difference between nurses & residents (60% and 62%, respectively) compere to attending (52%). Other elements such as: poor sign–out from day team, delay in performing procedures and inadequate supervision by seniors and attending described to occur equivalent during both (NF) and traditional call with statistically insignificant differences among all group.



Conclusion

Our findings showed that paediatric (HCPs) responded very positively to a night float system over traditional call system and perceived that it results in fewer hospital medical errors. Factors contributing to medical errors during the night call duty will help the residency-training program to develop effective strategies to enhance residents' Night Float experience.

D1143

ENHANCING SURGICAL CONFIDENCE BY DELIVERY OF POINT-OF-CARE ANATOMY FOR EVERYDAY PRACTICE

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Introduction

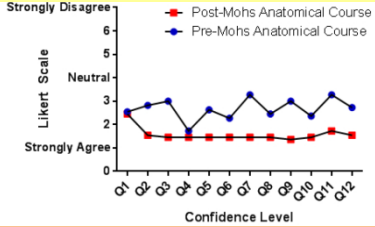
Retention of anatomical details is critical for clinical practice in which recall of specific anatomical information may affect efficiency and effectiveness of targeted clinical tasks. Retention of anatomical knowledge is dependent on its value, importability, and relevance to clinical practice. As clinical training evolves, and patient care is prioritized, it is not unusual for clinicians to re-connect with prior anatomical knowledge when faced with challenging procedures. In a busy practice, finding dedicated time to learn anatomy through a self-guided approach is often challenging. Aim: Demonstrate development and point-of-care delivery of anatomical information to complement procedural skill and improve surgical confidence.

Methodology

Needs assessment of core knowledge and knowledge paucity was conducted through the membership of two professional dermatology societies: American College of Mohs Surgery (ACMS) and American Society for Dermatologic Surgery (ASDS) Anatomist and surgeon used a collaborative team approach to determine a selection of clinical cases with imperative anatomic teaching points; i.e., danger zones, safe zones and functional impairment. Video was used to demonstrate real time dissection with a layered approach to the targeted anatomy. For challenging anatomy encountered during Mohs resection and repair, patient defects were recreated on the cadaver. Feedback was obtained via conference review and participant questionnaires measuring perception of confidence in anatomy knowledge.

Results

Within a small group session (n=11), 55% were last offered anatomy learning opportunity >10years ago, 27% within 5-10 years and 18% within 1-3 years. Only 18% had access to anatomy facility and material and 100% agreed and strongly agreed that anatomy education was critical to their current practice. Analysis of pre and post course questions showed improved confidence in anatomic knowledge of specific knowledge gaps.



Conclusion

For physicians outside mainstream academic setting, employing technology , ie. video, 3D prints and identifying opportunities within professional societies facilitates continuing medical education initiatives in basic sciences. In the era of authentic learning, anatomists share a responsibility for creating point-of-care content for improving patient care.

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FOCUSED SUBCOSTAL ECHOCARDIOGRAPHY BY ICU RESIDENTS: LEARNING TRAJECTORY OF DYAD VERSUS INDIVIDUAL TRAINING

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INTRODUCTION

- Dyad training in the acquisition of psychomotor skills has gained recent eminence in medical education research.
- Its appeal lies in reducing time burden during training.
- We aimed to examine the learning trajectory of dyad versus individual training in learning focused subcostal echocardiography by intensive care residents.

METHODOLOGY

- We conducted a quasi-experimental study within a 20-bed medical intensive care unit of a 1,228-bed university hospital from June 2016 to March 2017.
- 33 residents were studied.
- Residents received self-reading materials and took a knowledge test.
- For supervised practice, 16 residents received individual training and 17 residents received dyad training.
- Residents were encouraged to perform at least 10 echoes, each of which was remotely scored by a blinded observer for image quality and correct interpretation.
- Between individual and dyad training groups, the main outcome measure (mean composite score) which comprises the mean composite image quality and interpretation score were analysed.
- The mean composite score was analysed according to the number of echoes performed (1-5, 6-10, 11-15 and beyond 15 echoes).

RESULTS

- Similar results between individual and dyad training groups.
- Non-inferiority established between individual and dyad training groups.

	1-5 echoes	6-10 echoes	11-15 echoes	16+ echoes	p-value
No. of cases	165	121	71	46	N.A.
No. of participants	33	28	18	8	N.A.
Composite score Mean (SD)	6.0 (0.8)	6.2 (0.8)	6.3 (1.0)	6.4 (0.8)	< 0.001
Image quality score, Mean (SD)	3.3 (0.7)	3.4 (0.6)	3.6 (0.7)	3.6 (0.7)	< 0.001
Image interpretation score, Mean (SD)	2.7 (0.5)	2.8 (0.5)	2.7 (0.7)	2.8 (0.4)	0.139

CONCLUSION

- Learning trajectory is similar for the learning of focused subcostal echocardiography when conducted via dyad versus individual training.
- Dyad training is more efficient than individual training for learning echo.
- Possible mechanisms include: metacognitive interaction between residents, decrease in cognitive load on each resident, ability of resident to observe tutoring process of dyad partner.