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Introducing an Online Assessment Platform for WBA

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15th ANNIVERSARY

APMEC

Asia Pacific Medical Education Conference



**TECHNOLOGY: ENHANCING EDUCATION
FOR IMPROVEMENT OF PATIENT CARE**
Trends • Issues • Priorities • Strategies

**10TH (WED) - 14TH (SUN) JANUARY 2018
SINGAPORE**

**ABSTRACTS FOR ORAL AND
POSTER PRESENTATIONS**

Organised By:



Centre for Medical Education
Yong Loo Lin School of Medicine

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Friday 12th January 2018

Foyer, Central Ballroom, Resorts World Convention Centre

11.15am – 12.30pm (Poster Judging)

BEST ABSTRACT FOR POSTER PRESENTATION FINALISTS (SESSION 1)

- BP01** **Using Nedelsky, Angoff, Modified Angoff and Cohen Methods in Standard Setting– A Comparison in an Australian Undergraduate Medical Program**
Michael Siu Wan, Australia
- BP02** **Students' Interactions and Team Working in Team-Based Learning: A Systematic Literature Review**
Ikuo Shimizu, Japan
- BP03** **A Six-Year Experience to Assess Infectious Diseases Fellows in Training by Utilising Infectious Diseases Society of America Examinations from 2012 to 2017 in Japan**
Harumi Gomi, Japan
- BP04** **Pilot Testing Teaching Module on Neglected Tropical Diseases Amongst Medical, Nursing and Physical Therapy Students in a Private and Public University in Metro Manila: A Mixed Methods Research**
Milagros Rabe, Philippines
- BP05** **Clinical Observership and E-Learning in 2nd Year Optometry Students in Singapore**
Si Qi Chua, Singapore
- BP06** **Can Anonymised Competition Influence Neurology Faculty Feedback Scores in GME?**
Yasmin I Jion, Singapore
- BP07** **A Review of Undergraduate and Postgraduate Mentoring – Studying the Mentoring Relationship in its Environment**
Simone Quek, Singapore
- BP08** **Junior Resident Led OSCE Workshop Enhances Preparation for Transition to a First Year Doctor**
David Ng, Singapore
- BP09** **Facilitating the Mentoring and Supervisory Skills of Faculty in the National Psychiatry Residency Program**
Lay Ling Tan, Singapore
- BP10** **Clinical Skills Training and Supervision Framework and Effectiveness in Medical Internship – Evidence on Catheter-Associated Urinary Tract Infection Rates**
Shu-Hung Huang, Taiwan
- BP12** **Doctors' Professional Socialisation from Medical Students to Staff Doctors in Japan**
Junji Haruta, Japan
- BP13** **Medical Students' Peer Role-Playing for Education of Psychosocial Approach**
Sachiko Ozone, Japan
- BP14** **Current Practice of Verbal Handover Using SBAR Modality Among Paediatric Residents in ACGME-I Program Qatar, How We Can Communicate Better?**
Manasik Hassan, Qatar
- BP15** **An International Study Exploring What Medical Students Desire from Student Welfare Provision at Lee Kong Chian School of Medicine and Imperial College London**
Claire Ann Canning, Singapore
- BP16** **Transforming Medical Students' Knowledge, Attitudes and Practice of Hand Hygiene**
Rathi Mahendran, Singapore
- BP17** **Tri-generational Homecare: The Educational Outcomes of a Longitudinal Student-Initiated Homecare Programme on Secondary School Student Participants**
Yao Chi Gloria Leung, Singapore
- BP18** **Residents in Difficulty: Deficiencies and Outcomes of Remediation**
Faith Chia, Singapore
- BP19** **Using Simulation and Inter-Professional Education to Teach Infection Control During Resuscitation**
Kah Wei Tan, Singapore
- BP20** **Stress Level vs Gender, Study Program. Is it Significantly Different?**
Inthat Assawawethmongkon, Thailand
- BP21** **Promoting Diversity Using Situational Judgement Tests**
Christopher Zou, Canada
- BP22** **Pre-Clinical OSCEs May Predict Low Performance But Not Unprofessional Behaviour of Medical Students in Clinical Placement**
Seiichi Ishii, Japan

- BP23** **Framework for Integrating Massive Open Online Courses into Classroom Teaching**
Peter GM de Jong, The Netherlands
- BP24** **The “Pitfalls” Approach to Diagnostic Expertise: A Novel Theory and Evidence-Based Strategy**
Chia Meng Teoh, Singapore
- BP25** **Factors Associated with Performance in Clinical Reasoning Tests of Neurological Localisation: A Study in Internal Medicine Residents**
Nigel Tan, Singapore
- BP26** **Guidelines for Mentoring in Undergraduate Medicine**
Yin Shuen Tan, Singapore
- BP27** **Focused Cardiovascular Ultrasound (FoCUS) for Medical Students. A Pilot Teaching Module**
Suresh Paranjothy, Singapore
- BP28** **Self-Awareness, Supervised Learning and Savoir-Faire for Psychiatrists: A Qualitative Exploration of Residents’ Experiences and Perspectives Towards Psychotherapy**
Wen Phei Lim, Singapore
- BP29** **Nursing Supervisors’ Perceptions on New Recruited Registered Nurses’ Performances in Clinical Areas**
Nor Syafawati Jumaat, Singapore
- BP30** **Holistic Obstetrics and Gynaecology Mind Maps (HOGMMs) Teaching: Easy to Use Tool Provides Equality of Learning, Teaching and Assessments**
Hassan Karali, Malaysia
-

BP 01

USING NEDELSKY, ANGOFF, MODIFIED ANGOFF AND COHEN METHODS IN STANDARD SETTING- A COMPARISON IN AN AUSTRALIAN UNDERGRADUATE MEDICAL PROGRAM

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Background and Aims

Various standard setting methods have been used to set the passing mark of the Multiple Choice Questions (MCQ) examinations. Well known methods include Nedelsky and Angoff methods which are labour intensive; and Cohen method which is relatively simple to apply. We compared these methods in an Australian Undergraduate Medical Program.

Methods

Fifty basic clinical science (Year 2) MCQs were given to 15 clinician tutors for standard setting. Nedelsky and Angoff methods were done individually; consensus discussion was used for the modified Angoff approach. Two-way mixed Intra-class Correlation (ICC) model was used to investigate the agreement of the passing marks using the 3 methods. The MCQ examination was administered to 120 medical students and the modified Cohen mark was calculated according to the cohort performance scores.

Results

Pass marks using the above 3 methods for each MCQ item were collated while the modified Cohen mark was calculated at 60% of the 95th percentile of the student cohort. The pass marks were 41.3% (Nedelsky), 47.5% (Angoff), 48% (modified Angoff) and 48.5% (Cohen) respectively. The single measure ICC was 0.776 (95% CI: 0.60-0.87; $p < 0.001$).

Conclusio

The three standard setting methods involving clinicians seemed to have good level of agreement in the resulting pass marks for the 50 MCQ items. This was an encouraging finding, as the results indicated there will be good reliability (0.776) of the passing scores if only one of the three methods is used. Modified Cohen methods using the cohort performance scores gave similar results. As modified Cohen method requires only simple calculation post examination, this might be a more efficient method compared with modified Angoff which is more time-consuming.

Further studies in using the Cohen method and a cut-off score at the 60% or 65% percentile to set the pass mark is warranted.

BP 02

STUDENTS' INTERACTIONS AND TEAM WORKING IN TEAM-BASED LEARNING: A SYSTEMATIC LITERATURE REVIEW

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Background and Aims

Team-based learning (TBL) is one of the major collaborative learning approaches in medical education as well as business education. Especially it is sometimes used as a substitute for problem-based learning. While its effectiveness on knowledge domain has been enlightened recently, we also have to consider students' preference for team working, because we have expected collaborative learning to nurture such attitude. This paper aims at summarising the current state of research of students' interactions in TBL. It also aims at exploring hints and tips for using TBL in medical education.

Methods

A systematic literature search was performed in May 2017 to identify research articles regarding students' interactions in team-based learning. Relevant scientific online databases (MEDLINE, ERIC, EBSCO, google scholar, and Web of Science) were searched. Search terms used involved five key words based on attributes that are common to collaborative group learning approaches: team-based learning, interaction, collaboration, cooperation and interdependence. Textual narrative synthesis was used for data analysis.

Results

Only four articles have three themes were identified from the three studies included in the review: leadership, emotional intelligence, and teamwork. In TBL, important factors included environment and readiness. On the other hand, interestingly, students tended to team up while they retain independence individuals. No article was found focused on core components of cooperative/collaborative learning, such as interdependence.

Conclusion

It is suggested that TBL may can develop several team-working skills. In higher education, it was shown that learners benefit from TBL, while the evidence on its process is limited. There was no evidence on how faculties can stimulate the team working during TBL. Further exploration of the issue, especially core components of cooperative/collaborative learning, will be required.

BP 03**A SIX-YEAR EXPERIENCE TO ASSESS INFECTIOUS DISEASES FELLOWS IN TRAINING BY UTILISING INFECTIOUS DISEASES SOCIETY OF AMERICA EXAMINATIONS FROM 2012 TO 2017 IN JAPAN**

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Background and Aims

The subspecialty of infectious diseases has been developed over the last 10 years vigorously in Japan. Its comprehensive postgraduate training programs have been sought widely in Japan. The in-training assessment for infectious diseases postgraduate trainees (fellows) is currently under development. Since 2012, our institutions have been utilising "fellows-in-training examinations" (FIE) provided by Infectious Diseases Society of America (IDSA). The aim of this study is to describe our experience in assessing postgraduate clinical fellows in infectious diseases in Japan.

Methods

Six hour online case-based examinations provided by IDSA were administered to our infectious diseases fellows once a year since 2012 for the last six years at Centre for Clinical Infectious Diseases, Jichi Medical University, Shimotsuke, Tochigi, Japan and Centre for Global Health, Mito Kyodo General Hospital, University of Tsukuba, Mito, Ibaraki, Japan. The examinations have been considered as formal knowledge assessment for ID fellows in our institutions.

Results

A total of 22 fellows took the exams. The fellows were from Year 1 to Year 3 in the training. All fellows were not native English speakers, had not lived in North America or outside Japan. Most of the fellows struggled with the questions in English. Due to the epidemiological differences, questions on endemic pathogens in North America, such as Human Immunodeficiency Viruses and Histoplasmosis seemed difficult for our fellows.

Conclusion

Formal assessment tools and systems should be developed and implemented for infectious diseases fellows in Japan. Meantime alternative assessment tools provided by IDSA would be very useful to standardise the knowledge base among the infectious diseases fellows in Japan.

BP 04**PILOT TESTING TEACHING MODULE ON NEGLECTED TROPICAL DISEASES AMONGST MEDICAL, NURSING AND PHYSICAL THERAPY STUDENTS IN A PRIVATE AND PUBLIC UNIVERSITY IN METRO MANILA: A MIXED METHODS RESEARCH**

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Background and Aims

This study was conducted to determine the effectiveness of a teaching module regarding neglected tropical diseases prevalent in the Philippines (schistosomiasis, filariasis, soil transmitted helminthiasis, food borne trematodiasis, rabies and leprosy) amongst a sample of 21 students in medicine, nursing and physical therapy in two universities in Metro Manila, one being a government (Public) university and the other, a private university.

Methods

Discussion was carried out in one session by a professor using the prepared power-point presentation consisting of 130 slides. A 30-item pre- and post- test questionnaire on neglected tropical diseases was used to determine student knowledge about neglected tropical disease. A focused group discussion was conducted after the module discussion designed to determine how the learning experience can be characterised from the point of view of the students and to get feedback on how the module used in the discussion can be improved as a teaching tool.

Results

The data was normally distributed, using Shapiro Wilk's test ($p= 0.316$ for pre-test and $p= 0.109$ for post-test at $\alpha = 0.05$). The mean pre- test score was 12.143 ± 10.364 and the mean post- test score was 21.190 ± 3.7805 . The comparison of the mean pre and post- test scores was statistically significant, ($p<0.0001$, one-tailed, $\alpha=0.05$), where the mean post-test was higher than the mean pre- test score. The focused group discussion revealed the following themes: (1) The students were familiar with most of the concepts discussed, but they also learned new concepts, particularly regarding the demographic distribution of the diseases nationwide, and the concepts on how the diseases can be transmitted. This generated a concept of how transmission can be prevented and the different government programs that they can use to educate patients that they will encounter; (2) The students found the discussion important and "eye opening", as having a uniform knowledge base regarding the diseases allowed them to see the patient with a more "holistic lens." This implied to the students a professional outcome for more efficient inter-professional communication, and become a team for better health care for patients; and (3) The students found the module easy to understand as it showed graphic data for the most part, but they believe that it can be further improved by providing more graphics and animations to achieve an engaging discussion. This was a challenge as the discussion was done after lunch a Saturday afternoon and most of them were from duty (medicine, nursing and PT students).

Conclusion

Thus it is concluded that in a mixed methods research, a prepared teaching material on six common neglected tropical diseases in the Philippines is effective as a teaching tool. The study also showed that the module can be transformative and conforms to an OBE (outcome-based education) framework. It is recommended that the module be also evaluated from the faculty point of view in order to further enhance it as a teaching tool.

Disclosure:

This project was funded by the USAID through RTI International and a project whose main output (modules) is for the use of the Department of Health, Disease Prevention and Control Bureau, specifically for the control of Neglected tropical diseases.

BP 05

CLINICAL OBSERVERSHIP AND E-LEARNING IN 2ND YEAR OPTOMETRY STUDENTS IN SINGAPORE

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Background and Aims

Clerkship experiences are considered crucial for the development of clinical competence (Wimmers 2006). However, little is known about the effectiveness of an internship based purely on observation of the routine consultation and examination of patients in a clinic setting. On the other hand, E-learning has gained popularity in the past decade. E-learning is the use of internet technologies to enhance knowledge and performance (Ruiz, et al. 2006). It offers learners control over content, learning sequence, pace of learning, time, and often media, allowing them to tailor their experiences to meet their personal learning objectives.

Studies in medical literature have consistently shown that students are very satisfied with E-learning (Ruiz, et al. 2006), although there is no prior literature on E-learning in optometrists in Singapore. The primary purpose of this research is to determine the efficacy of E-learning using SCOPE (Second-year Clinical Optometry Preparatory E-learning) in achieving a specific set of clinical competency and learning objectives as expected of optometry students by end of their year 2 study. The other objectives include obtaining feedback on the satisfaction levels based on various aspects of both the clinical observership and E-learning.

Hypothesis:

Students who go through E-learning will be equally clinically competent with those who go through pure clinical observership.

Methods

Two groups of year 2 students from Ngee Ann Polytechnic had participated in this study. Group A had clinical observership of 1 week duration. Group B had completed the E-learning module on their own time within a given time frame, prior to attending their clinical observership.

A pre-test (30-question slide quiz with time limit) was administered to both groups before commencement of the observership and E-learning; serving as baseline scores. A post-test (same set of questions as the pre-test, with questions shuffled) was administered to both groups after the observership and E-learning.

The E-learning module (SCOPE) was developed by collaborating with the consultants in Khoo Teck Puat Hospital eye clinic and the lecturer(s) involved in teaching the students at Ngee Ann Polytechnic. SCOPE (1 hour duration) included various pre-recorded videos in different segments that aimed to build clinical competency. SCOPE was developed with the use of the Camtasia Studio 8 software, which allowed for interactive features, hotspots and internal quizzing.

A survey was conducted to both groups at the end to collect feedback on various aspects of their learning.

Results

Student's t test was used. Group A (non E-learning, n=12) attained a mean pre-test score of 14.2 ± 3.2 (out of 30). Group B (E-learning, n=15) attained a mean pre-test score of 14.3 ± 2.2 . The mean baseline scores for both groups were similar [$p=0.93$].

Group A attained a mean post-test score of 17.5 ± 3.5 , while Group B attained a mean post-test score of 20.3 ± 4.6 . The post-test scores were significantly higher than the pre-test scores for both groups respectively [$p=0.006$; $p=0.023$]. The mean post-test scores for both groups were similar [$p=0.184$].

Conclusion

Both clinical observership and E-learning were equally effective in improving clinical competencies and knowledge in 2nd year optometry students.

BP 06

CAN ANONYMISED COMPETITION INFLUENCE NEUROLOGY FACULTY FEEDBACK SCORES IN GME?

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Background and Aims

Competition influences behaviour, eg. smoking cessation and resident learning. The effect of competition on faculty teaching is unknown. We examined how anonymous competition (AC) influenced resident-rated faculty teaching scores in our Neurology department.

Methods

Residents assess faculty teaching monthly using a standard tool; scores (on 5-point Likert scale) are collated for individual faculty yearly, and anonymised with individualised code names. Anonymised scores are presented to the whole department annually. Each neurologist sees his/her own score, and can compare it to fellow neurologists' anonymised scores. We calculated the change in resident-rated scores from 2013-2016 ('Delta'), then categorised faculty using delta quartiles into 3 groups: low, medium and high delta (<25th, 25th-75th, and >75th percentiles). We compared delta to variables at baseline (year 2013): seniority, adjunct teaching positions, academic titles, quantity and quality of undergraduate medical teaching, time spent on formal faculty development.

Results

Nineteen neurologists participated (3 associate consultants, 6 consultants, 10 senior consultants); 7 (36.8%) held adjunct positions. Faculty spent significant time teaching medical undergraduates (mean 96.6(SD 56.3) hours); they received acceptable undergraduate teaching feedback scores (mean 4.5(0.4); 5-point Likert scale). Faculty participated variably in faculty development (mean 6.9 (8.2) days, range 0-25.5). The mean delta for low, medium and high delta groups were -0.07, 0.14, and 0.57 respectively; baseline 2013 resident-rated scores were significantly different (4.5 vs 4.3 vs 3.9, $p=0.03$). Between the 3 groups, there were no significant differences in baseline variables or time spent on faculty development.

Conclusion

After implementing AC, the delta in resident-rated neurology faculty teaching scores varied between individuals; those with low initial scores improved the most. The improvement was independent of seniority, adjunct positions, academic titles, quality and quantity of undergraduate teaching feedback scores, or time spent on formal faculty development. Though ceiling effects are possible, we postulate that AC activates innate competitiveness and thus improves teaching scores among low and medium scorers.

BP 07

A REVIEW OF UNDERGRADUATE AND POSTGRADUATE MENTORING -STUDYING THE MENTORING RELATIONSHIP IN ITS ENVIRONMENT

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Background and Aims

Mentoring is key to shaping a physician. Effective mentoring evolves around the mentoring relationship which flourishes in conducive mentoring environments. This literature review aims to identify differences in relational and environmental factors between undergraduate and postgraduate mentorships, and analyse how they affect its outcome. This will suggest a need to apply mentoring as tailored to its specific context.

Methods

Pubmed, ScienceDirect, ERIC and the Cochrane Library Databases were searched for publications reporting mentorship in medicine, based on the keywords "mentor", "mentee", "mentorship" and "medicine". English articles published between 2000 to 2015 on mentoring in medical training by a senior to a junior were included. Articles involving other disciplines, peer, near-peer and group mentoring were excluded. Open coding of data and thematic analysis was done, and themes were then identified and discussed.

Results

The initial search retrieved 5570 titles and abstracts which were reviewed based on inclusion and exclusion criteria. 329 articles were retrieved and a final number of 49 articles were included. Of the selected 49 papers, 23 papers focused on undergraduate programmes, 21 papers focused on postgraduate programmes and 5 papers looked at both. Findings show that although successful undergraduate and postgraduate mentoring differ in its programmatic elements and environmental factors, key elements of mentoring relationships remain similar and mentoring relationships tend to evolve in a similar pattern.

Conclusion

Although mentoring is established to be mentee dependent and context specific, our review finds that the core elements that contribute to a healthy mentoring relationship is consistent across different contexts. Moreover, external variables exert significant influence on the relationship. These factors can be described as the mentoring environment which consists of various external factors such as the formal mentoring structures, organisational support and culture in which mentoring relationships grow. Guidelines and practices must be sensitive to contextual differences in undergraduate and postgraduate programmes such that an ideal mentoring environment can be created to aid the formation of successful mentoring relationships.

BP 08

JUNIOR RESIDENT LED OSCE WORKSHOP ENHANCES PREPARATION FOR TRANSITION TO A FIRST YEAR DOCTOR

Ng D

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Background and Aims

Newly-minted House Officers are expected to competently manage a wide range of clinical scenarios. Many lack first-hand exposure to these problems, or have been exposed only as passive observers rather than active participants. Our first-year residents designed a ground-up workshop providing final-year students with first-hand experience managing frequently-encountered practical problems. This evaluation aims to assess the effectiveness of junior doctor-led scenario based teaching in translating medical knowledge into applicable practice, in instilling confidence in and improving competency of recently-graduated doctors.

Methods

The residents wrote scenarios encompassing management of acutely deteriorating patients, practical tasks (e.g. hyperkalaemia correction), and communication skills (e.g. breaking bad news). Scenarios were vetted by faculty. Residents then conducted an Objective Structured Clinical Examination (OSCE) workshop using these scenarios, marking students according to a checklist and giving immediate feedback.

Results

94 final-year students attended the workshop. 73% reported that it exposed them to scenarios they had not encountered before. >50% had not previously encountered hyperkalaemia, anaphylaxis, and acute transfusion reactions in the wards. They felt more confident in dealing with patient communications (100%) and emergency situations (94%) after the workshop. First-year residents were able to identify common and important situations that they found challenging in their own transition from student life. The OSCE allowed students to gain first-hand practice in a low-stakes environment, where common (often critical) mistakes were identified and addressed. Teaching by recently-graduated seniors resonated well with students.

Conclusion

The workshop was successful in allowing more uniform and comprehensive exposure to real-life practical situations, and equipping students to manage clinical scenarios with more confidence. Resident-led planning with the faculty's support allowed teaching pointers to be accurate and also focused on practical tips relevant to a first year doctor. Junior doctors are a powerful resource in identifying issues pertinent to their immediate juniors, and can be deployed to teach. OSCE workshops may supplement ward postings by exposing students to more clinical scenarios as active participants. This prepares final-year medical students for the demands of being a first-year House Officer.

BP 09**FACILITATING THE MENTORING AND SUPERVISORY SKILLS OF FACULTY IN THE NATIONAL PSYCHIATRY RESIDENCY PROGRAM*****Tan LL****Department of Psychological Medicine, Changi General Hospital, Singapore***Background and Aims**

Since the adoption of residency training, there have been generic educational initiatives for developing faculty's supervisory/mentoring skills. In the recent ACGMEI Resident Survey of our National Psychiatry Residency Survey, there were apparent discrepancies with regards to how residents and faculty view the quality of supervision. Faculty was quite satisfied with the supervisory process. However, residents have rated supervision quality to be below national compliance. This study aims to establish what are the critical supervision and mentoring situations and how faculty development in clinical supervision and mentoring can be guided.

Methods

Written consent was sought for use of the questionnaire on critical mentoring situations developed by Heeneman, de Grave et al. This questionnaire attempted to capture the experiences of our faculty and residents in the various supervision and mentoring situations and how such situations affect the effectiveness of the sessions. The perceptions of the faculty and residents regarding the responsibility of the faculty to take action in these situations were also analysed. The psychiatry residency program director supported its use and all faculty and residents posted to our teaching site were invited to participate. Years of experience in supervision and preference for areas of training in supervision and mentoring were also captured.

Results

Out of 23 faculty, 20 reverted. The top three critical situations were 1) resident is not reflective 2) resident is focused on one or a few competencies and 3) resident is not proactive in the workplace. 14 of 20 faculty saw a need for training particularly on dealing with residents in difficulty. Despite faculty's vast clinical experience, many endorsed the need for faculty development, with a focus on managing residents in difficulty. Interesting, residents' ACGMEI surveys highlighted dissatisfaction with the program's process to deal confidentially with residents' problems, whereas faculty rated discussing confidential information with resident as least critical in the questionnaire.

10 residents who were posted to the teaching site responded to the questionnaire. The top three critical situations were: 1) faculty tries to build a good rapport; 2) faculty shares experiences during meetings; 3) faculty provides feedback about resident's progress.

The lack of mutual understanding of the objectives and expectations of the supervisory and mentoring process between faculty and residents might have resulted in dissatisfaction of the process. The results of this study will help the program focus its faculty development on supervisory/mentoring skills with regards to managing residents in difficulty.

Conclusion

The study highlighted differences in expectations of the supervision and mentoring meetings from residents and faculty. The training program will have to articulate the agreed upon objectives of the supervision and mentoring sessions to both residents and faculty. The identification of critical supervision and mentoring situations by faculty and residents and understanding specific training needs of faculty is crucial for its faculty development program to be effective.

BP 10

CLINICAL SKILLS TRAINING AND SUPERVISION FRAMEWORK AND EFFECTIVENESS IN MEDICAL INTERNSHIP- EVIDENCE ON CATHETER-ASSOCIATED URINARY TRACT INFECTION RATES**¹Huang S, ²Tsai J, ³Chang Y, ⁴Wang C**

¹Department of Surgery, Kaohsiung Municipal Ta-Tung Hospital, Departments of ²Internal Medicine, ⁴Gastroenterology & General Surgery, Kaohsiung Medical University Chung-Ho Memorial Hospital and ³Department of Surgery, Kaohsiung Municipal Siaogang Hospital, Kaohsiung Medical University, Taiwan

Background and Aims

Effective clinical supervision is crucial patient safety and trainees' competency education. We develop a three-level of supervision framework to grant the privileges of clinical procedures for medical interns. This study aims to evaluate the effectiveness of this clinical supervision framework on the patient's rates of catheter-associated urinary tract infection.

Methods

Clinical supervision framework is defined as the advancing levels from observation and simulation (O), supervision (S), to independence (I) based on skills training, performance (OSCE) and workplace assessment. Totally 344 interns were authorised to perform Foley catheterization from supervision to indirect independent levels. Catheter-associated urinary tract infection (CA-UTI) rates were compared.

Results

Medical interns received the intervention of skills training, OSCE assessment, and ISO three-level clinical supervision for one month. CA-UTI rates were significantly reduced from the baseline 4.5 to 1.9 ($p < .05$) based on Infection Control Office report.

Conclusion

Intervention of skills training, assessment, and ISO clinical supervision framework demonstrated the valid evidence in reducing the CA-UTI rates by medical interns. This approach proves an effective internship training model by defining rational levels of clinical supervision and authorisation of procedures based on OSCE performance of skills courses.

BP 12**DOCTORS' PROFESSIONAL SOCIALISATION FROM MEDICAL STUDENTS TO STAFF DOCTORS IN JAPAN***¹Haruta J, ¹Ozone S, ²Hamano J**¹Department of General Medicine and Primary Care, and ²Division of Clinical Medicine, Faculty of Medicine, University of Tsukuba, Japan***Background and Aims**

As developing systematic medical education curriculum seamlessly, it is meaningful to clarify doctors' professional socialisation from medical students to staff doctors. To our knowledge, few studies have dealt with longitudinal doctors' socialisation. Therefore, the aim of our study is to explore how doctors socialised in career and identified professional role as products of the social interaction.

Methods

Narrative method was used as a theoretical framework because professional socialisation, which refers to the process they gain the knowledge, skills, and values in a professional carrier, could be interpreted through individual narrative. We collected participants who had over seven year of doctors' career as purposive sampling. The participants were arranged considering variable gender, institution, working area, and specialties. Semi-structure interviews were conducted, audiotaped and transcribed verbatim by authors. A structured approach to integrate the sequence of events into coherent configurations based on research question was used as analysis methods (Gregg & S., 2006). First, each participants' narrative was divided into episode and undergone analytic scrutiny in a whole. Second, all episodes were identified to contrast, binary oppositions and mediating terms within and across each episode. Third, the general themes were established by first author. Finally, second and thirds authors checked the whole interpretation and modified as necessary.

Results

Participants included 13 males and 8 females who have 8-30 years' carrier. All doctors developed realisation from virtual images of doctors when they were medical students in clinical practice. In residents, the adaptation as a member of the hospital doctors was emerged. In adaptation process, four patterns were clarified.

1. They began to move from 'peripheral' to 'full' participation in organisation when a professional image and teaching hospital corresponded, and they smoothly preceded professional socialisation.
2. They individually didn't pull participation but clarified their own professional image from social interaction individually when a professional image and teaching hospital did not correspond.
3. When they had vague professional image, two patterns further were clarified in the difference of speciality as public persona. One, who selected experts who have distinguishable skills even from the outside, is to move from 'peripheral' to 'full' participation in organisation gradually. The other, who selected general skills (General Physician; GP etc), adapted as an ad hoc group but they were late to proceed professional socialisation as GP.
4. They could not regard teaching hospital as legitimate organisation and not participate fully because they had unclear professional image. However, proceeding carrier, they began to participate in core of the organisation, and it gradually converged to the previous 1, 2, 3 patterns.

Conclusion

Anticipatory socialisation and organisational socialisation were commonly emerged. These findings could be explained as institutional theory. Moreover, four patterns were clarified based on professional image, specialty and corresponding to teaching hospital as individual. This study indicated that the process of integrating personal role and identity into organisation or/and professional group were clarified as doctors' socialisation. These findings might be helpful in supporting professional development.

BP 13**MEDICAL STUDENTS' PEER ROLE-PLAYING FOR EDUCATION OF PSYCHOSOCIAL APPROACH***¹Ozone S, ²Shaku F**¹Department of General Medicine and Primary Care, Faculty of Medicine, University of Tsukuba, Japan, ²Department of Psychosomatic Internal Medicine, Itabashi Hospital, Nihon University, Japan***Background and Aims**

Facing patients with psychosocial problems is one of the challenges for medical school students. Role-playing is often used to teach basic communication skills to practice patient interview skills. Playing both the patient as well as physician roles (peer role-playing) may be one of the ways to better understand a patient's psychosocial background and create an optimal patient-physician relationship. To clarify the effect of medical students' peer role-playing on understanding the efficacy of psychosocial approach to patients, we administered a questionnaire to medical students before and after the peer role-playing practice.

Methods

Subjects were 4th and 5th year medical school students at University of Tsukuba who attended the peer role-playing session during their clinical clerkship rotation in general practice from November, 2014 to March, 2017. The session consisted of outpatient setting scenarios of patients with conditions which are closely related to psychosocial problems, e.g., irritable bowel syndrome, bronchial asthma, or tension type headache. The students played either the patient role or the physician role, and shared feedback after the role-playing. Before and after the session, they were asked to complete self-administered questionnaires asking for 1) importance of asking patients' psychosocial background, 2) feeling of hesitation to ask patients' psychosocial background, and 3) whether patients feel uncomfortable sharing their psychosocial background with physicians. All questions were rated on a 5-item Likert scale, from 5: "Yes, definitely" to 1: "No, definitely not." We calculated the mean response and the percentage of those who chose responses 4 or 5, and compared the answers before and after the session using paired t-test. We also asked in free text about how they felt experiencing the patient and physician roles. This study was approved by the University of Tsukuba Medical Ethics Board (1765).

Results

Total of 173 students participated, and all responded. For question 1, the percentage of those who chose responses 4 or 5 was 98.3% before the session and 99.4% afterwards, and the mean score was 4.57 ± 0.53 and 4.83 ± 0.40 , respectively ($p < 0.001$). For question 2, those who chose responses 4 or 5 was 75.5% before and 42.2% afterwards, with mean scores of 3.64 ± 0.85 and 3.01 ± 1.02 , respectively ($p < 0.001$). For question 3, students who chose responses 4 or 5 was 76.3% before and 26.6% afterwards, with mean scores of 3.75 ± 0.76 and 2.62 ± 0.99 , respectively ($p < 0.001$). In free text, students realised that empathic attitudes toward patients enabled patients to speak of their psychosocial background with less hesitation.

Conclusion

By experiencing peer role-playing, students understood more about the importance of asking patients about their psychosocial background and felt less hesitant about doing so. They also realised that patients are likely to be less hesitant to share their psychosocial background with physicians as students felt they must be. Designed peer role-playing experiences may be effective in encouraging medical students to interview psychosocial backgrounds of patients.

BP 14

CURRENT PRACTICE OF VERBAL HANDOVER USING SBAR MODALITY AMONG PAEDIATRIC RESIDENTS IN ACGME-I PROGRAM QATAR, HOW WE CAN COMMUNICATE BETTER?

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Background and Aims

Patient handover is a crucial process for transfer of patients' information. The ultimate goal of handover is to ensure patients safety, thus, its standardisation enables concise relay of information across team members. Many factors is contributing to efficient and safe handovers such as: organisation of the whole process of handover, insure presence of protected time, standard systems and training for all staff. Different systems of communication have been developed to achieve effective and safe handover such as SBAR. Our aim is to study the completion of patient information during handover using SBAR modality at the time of residents' endorsement, identify frequent missing elements in the residents' handover and to study organisation of the whole handover process.

Methods

An observational study was conducted in Paediatric Department of Hamad General Hospital. The observational tool was structured to examine the contents of the oral handover using SBAR method, which was filled by chief residents. The observation was done at the time of handover between morning team and the on call team. It included the organisation of the handover, 9 essential elements conveyed in SBAR format and flow of the endorsement throughout different team levels

Results

There were 26 endorsement observations collected from different types of endorsement (Junior to Junior, Senior to Junior, Junior to Senior, Senior to Senior, Senior to Fellow, and Fellow to Fellow). 30.8% of the endorsement comes from Senior to Senior, 23.1% from Senior to Junior, 19.2% Junior to Junior, 15.4% Junior to Senior; while Senior to Fellow, Fellow to Fellow, and undescribed had 3.8% each. 50% of the residents' handovers had completed 100% the 9 elements of endorsement using SBAR, while 35% covered 75% of the SBAR element in endorsement. The commonest missing elements were patients' demographics and location (23%) followed by situation awareness (19%).organisation of the whole handover process was 38% of more than 4 which is very good and only 12% of 1 which is poor organisation.

Conclusion

The majority of the residents' handovers were inclusive of the 9 elements of SBAR. An extra important element was observed in 12% of the endorsements, which is "read back by the receiver"; an element not part of the SBAR modality.

By the study there were highlighted areas for improvement in SBAR content. Adding "read back by receiver" = (R) to the SBAR may ensure that crucial patients' information is well understood by the receiving team. Creating a modified handover modality in form of SBARR may greatly improve endorsement safety and quality.

BP 15**AN INTERNATIONAL STUDY EXPLORING WHAT MEDICAL STUDENTS DESIRE FROM STUDENT WELFARE PROVISION AT LEE KONG CHIAN SCHOOL OF MEDICINE AND IMPERIAL COLLEGE LONDON**

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Background and Aims

The nature of the personal tutor role and the organisational context for pastoral care in Higher Education has long attracted scholarly attention. The transition from secondary education to higher education presents challenges for all students, and as such, the provision of high quality pastoral care and academic support services is essential. Medicine is a particularly challenging degree, academically, physically and emotionally. The vocational nature of the course places unique demands and presents diverse challenges not encountered on other programmes. Recent meta-analyses have demonstrated that rates of mental illness amongst medical students across all continents are significantly higher than aged matched controls, running at approximately 28% for depression alone(1). Studies have also characterised low rates of help seeking behaviour for mental health issues amongst medical students (1,2). The nature in which pastoral care is provided and accessibility of services may have a significant impact on help seeking behaviours. Without appropriate support networks in place, students may contemplate leaving their programme when faced with health or other challenges.

There has been recent interest in developing comprehensive support systems for students of veterinary and medical courses with a focus on the utility of so called "House systems" to create integrated programmes of continuous support and peer networks. The Lee Kong Chian School of Medicine (LKCMedicine), a joint initiative between Nanyang Technological University Singapore and Imperial College London (ICL), has created an innovative house system incorporating a comprehensive multi-layer approach that encompasses more than pastoral care and addresses student welfare holistically.

We aim to identify the common needs and desires in relation to student welfare support expressed by medical students in the UK and Singapore to compare methods of pastoral support delivery and their applicability in a cross-cultural context.

Methods

Semi-structured interviews were conducted with medical students at ICL and LKCMedicine. A content guide containing open questions on experiences of pastoral care systems was used as a framework to inform interview design. Interviews were audio recorded with consent of participants and transcribed verbatim. Transcripts were analysed for common themes using the technique of analysis of constant comparison. NVivo10 software was utilised in the coding process. Interviews were conducted until saturation of concepts was achieved. Themes identified from interviews in the UK and Singapore were compared.

Results

Common themes around personal tutor provision emerged encompassing the areas of tutor-tutee relationships, stress and mental health, academic support, transitions (school to university and pre-clinical to clinical) and peer support. We look forward to presenting a comparison on the analysis obtained from interviews conducted at LKCMedicine.

Conclusion

Student welfare support in medical education is of high importance due to the unique academic, physical and emotional demands placed upon medical students and the high rates of mental health issues amongst medical students.

BP 16**TRANSFORMING MEDICAL STUDENTS' KNOWLEDGE, ATTITUDES AND PRACTICE OF HAND HYGIENE**

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Background and Aims

Hospital-acquired (nosocomial) infections have a huge impact on healthcare: contributing to patient morbidity and mortality, extending hospital stays and increasing costs. Good hand hygiene plays an important part in the prevention of healthcare associated infections and the spread of antimicrobial resistance. While healthcare staff is closely and regularly monitored the same does not happen with medical students as they rotate in clinical postings across many different hospitals. Yet the best time to instil good hand hygiene practices are at the undergraduate medical student level before poor practices become entrenched. We present initiatives to address hand hygiene amongst medical students at an academic medical centre in Singapore.

Methods

Earlier assessments of hand hygiene practices amongst medical students in the hospital revealed that compliance rates had been as low as 34% to as high as 89%, but this had gradually decreased to about 54% in 2016. Knowledge and attitudes were first established in an online survey; Phase III to V medical students (N=906) were invited to participate. Participation rate was 34% (N=310, 43% Phase III, 22% Phase IV and 35% Phase V). Two main areas were investigated: (1) understanding of the 5 moments of hand hygiene, and (2) understanding of the 6-step hand cleaning technique.

Results

In response to the first question, 98% of students indicated that they knew the 5 moments of hand hygiene and 97% of the students were able to correctly state all 5 moments. In response to the second question, 89% indicated they knew the 6-step hand cleaning technique but only 22% of students got the sequence right. When asked to list possible reasons for poor hand washing compliance amongst medical students, 69% stated a lack of role models among peers and superiors and 64% attributed it to the belief that hand washing agents caused irritation and dryness. Suggestions students put forward to improve compliance included providing more role models (30%), reminders and emphasis on the importance of practicing hand hygiene (20%) and enhanced education and introduction of hand hygiene assessments (13%).

Conclusion

Based on these preliminary findings, some interventions were introduced: (1) medical students were invited to participate in the hospital's hand hygiene assessment event as an assessor; this provided an opportunity to create awareness of the importance of hand hygiene amongst medical students; (2) specially prepared posters were placed in the students lounges in the hospital to remind students of the importance of good hand hygiene and the consequences of poor compliance, and finally (3) arrangements were made to have the students nominate a hand hygiene ambassador within each clinical group to remind other members of the group to practice hand hygiene.

Hand hygiene is a basic healthcare practice and it is hoped that these practices will help address this important and often neglected area in medical student education. The compliance rates amongst students will be more rigorously tracked and monitored to determine the effectiveness of these brief interventions.

BP 17

TRI-GENERATIONAL HOMECARE: THE EDUCATIONAL OUTCOMES OF A LONGITUDINAL STUDENT-INITIATED HOMECARE PROGRAMME ON SECONDARY SCHOOL STUDENT PARTICIPANTS

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Background and Aims

Amidst the rapidly changing demographic landscape in Singapore, Tri-generational HomeCare (TriGen) has identified a group in the elderly population whose access to government and community resources may be impeded by various barriers such as poor social support and illiteracy. TriGen envisions students acting as advocates of these elderly in our population through a service-learning approach. Our objectives for the secondary school student volunteers are to inculcate service spirit and foster inter-generational bonds and understanding. This study aims to evaluate the effectiveness of this programme in achieving community impacts in reducing ageism amongst secondary school students.

Methods

TriGen is a student-led, professionals-supported programme involving healthcare undergraduate students primarily from the National University of Singapore and secondary school students from schools in the Northwest District. The programme is developed to complement Khoo Teck Puat Hospital's Aging-in-Place programme, which aims to reduce hospitalization rates among frequent re-admitters by taking healthcare to the community level with regular home visits by qualified nurses.

Groups of 4-5 secondary school student volunteers undergo a half-day bonding session with the 2-3 healthcare undergraduates prior to the commencement of each 6-month cycle of home visits. The content covered during this bonding session includes introduction to aging, experiential activities related to aging and basic practical skills in caring for the elderly, such as capillary blood glucose and blood pressure measurement. During the home visits, the secondary school students get to see the healthcare undergraduates converse with and perform basic health checks on the elderly, and they are given opportunities to actively engage the elderly with social activities. Each visit is concluded with a reflections session led by the healthcare undergraduates.

The Kogan's Attitudes toward Old People Scale (KOP) and Palmore's Facts on Aging Quiz (FAQ) were administered at the start and at the end of the 6-month cycle. Data analysis was done using SPSS Version 23.0.

Results

292 secondary students participated in TriGen from July 2015 to July 2017. 200 (68.5%) participants successfully completed the surveys. Of that, 131 (65.5%) are female. The average age of the students was 14.7 years old.

There was a statistically significant increment in mean KOP score from 126.7 ± 13.4 to 135.3 ± 13.1 , $t(200) = 7.71$, $p < 0.001$. There was also a statistically significant increment in mean FAQ score from 13.0 ± 3.58 to 13.3 ± 3.05 , $t(137) = 2.46$, $p < 0.015$. There was a positive association between number of hours spent on home visits and increase in KOP score ($p < 0.005$) but not FAQ score ($p = 0.529$). The scores were not significantly different regardless of seniority, gender, previous volunteering experiences or whether they stayed with their grandparents.

Conclusion

To our knowledge, this is the first paper that discusses a longitudinal student-initiated homecare programme in Singapore which enables secondary school students to act as advocates of elderly in our population through a service learning approach.

We have demonstrated good student outcomes in reduction of ageism. Further studies should be performed to elucidate the main contributory factors of TriGen in the reduction of ageism, and whether this effect is sustained after the completion of the programme.

BP 18

RESIDENTS IN DIFFICULTY: DEFICIENCIES AND OUTCOMES OF REMEDIATION

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Background and Aims

Since the inception of the National Healthcare Group Internal Medicine Residency Programme in 2010, a number of residents have undergone remediation to address various deficiencies. Identification of residents in difficulty, remediation, putting them on probation and dismissal are some of the most challenging aspects of any training programme. In this study, we aim to determine the prevalence of residents in difficulty in our programme, the areas of deficiencies demonstrated, the presence of external factors affecting performance and the outcomes of remediation.

Methods

We performed a retrospective review of the minutes of all Clinical Competency Committee (CCC) meetings and documentation of disciplinary actions from May 2010 to June 2017. Residents in difficulty were separated into those who received conditional passes from the CCC, and those who were issued warning letters representing serious deficiencies. The areas of deficiencies were classified using the 6 ACGME competencies, namely Medical Knowledge (MK), Patient Care (PC), Professionalism, Interpersonal and Communication Skills (ICS), Practice-Based Learning and Improvement (PBLI) and Systems-Based Practice (SBP). All residents in these groups were assigned faculty mentors/coaches and action plans were formulated together.

Results

The programme has enrolled 275 residents from since May 2010. There were 31 residents (11.2%) who had conditional passes, of which 7 proceeded on to require warning letters. A total of 10 residents (3.6%) were issued warning letters.

Residents who had conditional passes had deficiencies in an average of 1.9 ACGME competencies and an average of 1.27 remediation periods (6 months). The competency that was most commonly affected was Professionalism ($n=24$, 77.4%), followed by MK ($n=14$, 45.1%), PC ($n=12$, 38.7%) and ICS ($n=10$, 32.2%). Only 1 resident was cited for a deficiency in SBP and none for PBLI. 7 residents progressed to receive warning letters (22.5%), 14 (58.3%) completed remediation successfully, 4 (12.9%) are still undergoing remediation and 6 (19.3%) withdrew from the programme before the remediation period ended to either join private practice or other specialties. Interestingly, those who withdrew tended to have deficiencies in professionalism and ICS, and not in MK.

Amongst the residents who received warning letters, 80% had deficiencies in more than 1 ACGME competency with an average of 2.1. MK was an issue 90% of the time, PC 60%, professionalism 40% and ICS 20% of the time. The residents had an average of 2 remediation periods. 50% of the residents completed their remediation successfully and all of them matched to senior residency programmes. Three residents were unsuccessful and had to be dismissed, and 2 are still undergoing remediation. The average number of deficient competencies was similar in the successful and unsuccessful groups. None of the residents were known to have physical or mental illness, but three voluntarily disclosed that they were struggling with personal issues which included bereavement, marital strife and illness in the family.

Conclusion

While remediation was successful in a majority of cases, residents in difficulty often have deficiencies in multiple areas and require multiple remediation periods. External factors and lack of interest in the specialty should be considered when remediating residents who have deficiencies.

BP 19

USING SIMULATION AND INTER-PROFESSIONAL EDUCATION TO TEACH INFECTION CONTROL DURING RESUSCITATION**¹Tan KW, ²Mok MUS, ²Desai SR, ⁴Adaikan K, ⁵Ismail BS***¹Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Departments of ²Anaesthesiology, ³Dietetics, and ⁴Infection Control, Singapore General Hospital, Singapore***Background and Aims**

Adherence to infection control (IC) protocol is paramount to patient safety. However, during a crisis e.g. cardiac arrest, health care professionals (HCPs) may find it difficult to balance between the need for urgent patient management and adherence to IC measures. In such situations, there may be conflicts between different HCPs due to different priorities and roles in patient resuscitation. Inter-professional education (IPE) improves team dynamics and could resolve some of these conflicts. We hypothesise that learning IC through IPE and simulation will result in better IC knowledge retention and better teamwork in comparison with the standard online video IC education.

Methods

HCPs working in the Surgical Intensive Care Unit (SICU) in Singapore General Hospital were randomly allocated to the intervention or control group. The intervention group attended 2 workshops held in the SICU to simulate cardiac arrest in an infectious patient. The learning outcomes of the workshops were (i) to practice infection control precaution for transmission based infection; (ii) to realise the importance of inter-professional teamwork during a crisis situation. Pre- and post-workshop questionnaires with a 5-point Likert scale were used to assess knowledge on infection control and inter-professional teamwork. The questionnaire was derived from validated IPE questionnaires and showed good internal consistency ($\alpha = 0.916$).

Results

Of the 41 HCPs consented, 29 responded (response rate 71%). There were no significant differences in demographics between cases and controls. Amongst the cases, there was a significant improvement after the workshop for the subcategories Team Structure ($p=0.016$) and Situation Monitoring ($p=0.019$), while IC knowledge also showed a percentage increase of 11.0% post-workshop. Between cases and controls, although there were no significant differences in improvement of scores post-workshop, for inter-professional teamwork, the cases showed an overall percentage increase of 2.4% compared to -2.7% for controls. This is especially so in the subcategories Team Structure, Leadership, Situation Monitoring and Communication, which had differences in percentage change of 7.2%, 5.6%, 5.3% and 5.8% between cases and controls respectively.

Conclusion

IC/IPE/in-situ simulation workshop improves IC knowledge and inter-professional teamwork. Further follow up studies is required to investigate long term retention of IC knowledge as well as behavioural and practice change.

BP 20

STRESS LEVEL VS GENDER, STUDY PROGRAM. IS IT SIGNIFICANTLY DIFFERENT?**¹Assawawethmongkon J, ¹Junprung T, ¹Wanaporn W, ¹Aroonratana S, ²Nuallaong W***¹Faculty of Medicine, Thammasat University, Thailand, ²Department of Psychiatry, Faculty of Medicine, Thammasat University, Thailand***Background and Aims**

Medical study normally causes stress worldwide. The same as others, medical students in Faculty of Medicine of Thammasat University are also stressful because of hard work, difficult subjects, high level need of clinical skill and competitive environment. The aim of this study is to evaluate stress level in preclinical students and provides the results of helping Faculty of Medicine to enhance student's quality of life.

Methods

A cross-sectional study was conducted in the second and third year medical students of Thammasat University, by Five-Likert questionnaire. The questionnaire consisted of 2 parts. The first part was to gain personal information such as gender, school year, study program. The second part was to evaluate stress level using Suanprung stress test-20 (SPST-20). The data was analysed by using frequency, percentage, mean and independent t-test. All stages of this research were approved by the Human Ethics Committee of Thammasat University No.1 (Faculty of Medicine). The Certificate number is 205/2559.

Results

From 75.58% response rate ($n = 340$ students), around two thirds of them were females (58.37%). When considering study program, 46.30%, 36.58% and 17.12% were from Consortium of Thai Medical Schools program (COTMES), Government of Thailand - One District One Scholarship program (ODOS) and Collaborative Project to Increase Production of Rural Doctor program (CPIRD), respectively. In addition, the result showed that total prevalence of stress (moderate to severe level) was 75.10% whereas, high to severe level of stress was 38.13%. Insignificant difference was found between stress level and gender ($p=0.634$) or stress level and study program ($p=0.13$).

Conclusion

The results of this study confer that preclinical medical student in Thammasat University has high to severe stress. This is correlated well with Addulsha et al. even though study test is different. This might be because of more frequency of examination, falling behind in reading schedule etc. as described in Saipanish, 2003. This finding is an urgent warning for the Faculty that some resilience schedule to cope with stress should be initiated as soon as possible.

BP 21

PROMOTING DIVERSITY USING SITUATIONAL JUDGEMENT TESTS

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Background and Aims

One of the primary goals of medical school admissions is to ensure diversity in their matriculant pool. However, traditional cognitive assessments such as undergraduate GPA and MCAT tend to restrict diversity, as those Underrepresented in Medicine (URM) often underperform on these metrics. Traditional non-cognitive assessments such as interviews and letters of recommendation have poor reliability and provide little value in predicting important outcomes. We examined the utility of a constructed-response, video-based Situational Judgement Test (SJT) [Computer-based Assessment for Sampling Personal Characteristics (CASPer)] as a selection tool which can be used to increase matriculant diversity while also providing utility in predicting important outcomes in medical school.

Methods

CASPer is an online assessment tool developed to assess personal and professional competencies using an SJT-format. It is used as a pre-screening tool to evaluate candidates prior to the interview stage, to improve the quality of the interview pool. We invited applicants who took CASPer from the fall admission cycle in 2017 to participate in a short survey asking about various demographic information including age, country of residency, gender, English fluency, and SES.

Results

1,962 participants responded to the survey and provided self-reported demographic details. CASPer scores were not affected by the size of the community, educational attainment, country of residence, and whether applicants were residing with their parents. There were significant differences in CASPer scores across race ($\eta^2 = .05$), age ($r = -.11$), ESL ($r = .09$), parental education ($r = .11$), and parental income ($r = .18$). However, these differences were generally smaller than the observed differences on MCAT, GPA, and traditional SJTs. There were also significant differences across gender with females outperforming males ($r = .14$), and those who had paid employment (i.e., low SES indicator) outperforming those who did not have employment before the age of 18 ($r = .23$).

Conclusion

CASPer is an assessment tool that medical programs can use to assess the personal competencies of their applicants while promoting matriculant diversity.

BP 22

PRE-CLINICAL OSCEs MAY PREDICT LOW PERFORMANCE BUT NOT UNPROFESSIONAL BEHAVIOUR OF MEDICAL STUDENTS IN CLINICAL PLACEMENT*Ishii S, Kagaya Y, Iwazaki J**Office of Medical Education, Graduate School of Medicine, Tohoku University, Japan***Background and Aims**

Pre-clinical OSCEs have been adopted by all 80 Japanese medical schools since 2005 to assess students' basic clinical skills and attitudes that are considered essential to seeing patients. However, few data have been accumulated to confirm if OSCEs predict acceptable performance of medical students in clinical placement (CP).

Methods

We compared the results of pre-clinical OSCEs in Year-4 students and the results of student assessment in CPs in Year-5 students over the ten years since 2005 to 2014 at our medical school. The OSCEs were comprised of seven short stations including history taking, physical examinations and basic clinical procedures. Two evaluators were arranged in each station of the OSCEs and assessed student performance independently. Student performance in CPs was assessed by direct observation of attending physicians with an evaluation sheet which consisted of the items for knowledge, attitudes, clinical skills and inter-personal/social skills with a Likert rating scale. Each of the Year-5 students was assessed by a total of 20 evaluators in a year of CPs.

Results

During the ten-year periods, a total of 1,055 Y4 students took the pre-clinical OSCEs, and 1,090 Y5 students completed CPs. Of the 1,055 Y4 students who took the OSCEs, eight (0.76%) failed the OSCEs and took it again the next year. All of them eventually moved up to 5th year and completed CPs. Of the 1,090 Y5 students, six (0.55%) were graded 'unsatisfactory' at the end of the one-year CPs. Failures of OSCEs obtained low scores in the subsequent CPs, but they passed CPs. Failures of CPs had passed the OSCEs on their first attempt and obtained very low scores in CPs. They failed the CPs not by the scores but by unprofessional behaviour, for example, repeated tardiness or misconduct.

Conclusion

Failing in pre-clinical OSCEs seems to be a predictor of low performance in subsequent CPs by medical students. However, failing in CPs is not an indication of low performance. Instead, it signifies unprofessional behaviour which is not predictable by the results of pre-clinical OSCEs.

BP 23

FRAMEWORK FOR INTEGRATING MASSIVE OPEN ONLINE COURSES INTO CLASSROOM TEACHING*¹de Jong PG, ¹Hendriks RA, ²Reinders ME**¹Centre for Innovation in Medical Education, Leiden University Medical Centre, Leiden University, The Netherlands, ²Department of Nephrology, Leiden University Medical Centre, Leiden University, The Netherlands***Background and Aims**

The number of Massive Open Online Courses (MOOCs) in Medicine is increasing rapidly. MOOCs are a new way of delivering interactive online learning activities providing access to academic courses for an unlimited number of participants worldwide. As MOOCs are typically offered free of charge, the materials in a MOOC can easily be used in regular face-to-face teaching, regardless the institution that is offering the course.

Methods

In 2015 a team of clinical educators at the Leiden University Medical Centre developed a MOOC on the topic of Clinical Kidney Transplantation. The course is being offered to medical school students as well as health care professionals in the field, and consists of a large set of interactive course materials, such as lectures, movies, games, interviews, quizzes, online discussion forums, and clinical patient case assignments. The materials are being used in several designs in regular classroom teaching. In the first design parts of the online course, such as a reading or a video clip, are offered as additional learning materials to face-to-face teaching. In a second design 1 or more full days of teaching activities are being replaced by participating in a part of the MOOC. With the third design the massive open online course is being offered as a full course, of which participation and completion is conditional to enter a face-to-face training program. And finally the MOOC can also be offered as a stand-alone online course, of which completion will be rewarded by credits for the students.

Results

In all four designs the students rated the use of online resources offered in the MOOC as an interesting and motivating addition or replacement of regular teaching strategies. Over 60% of the medical school bachelor students explored more teaching materials than was required for their assignments. In the two designs where completion of the MOOC was compulsory the

engagement of the students with the online materials and participation in discussion forums seemed to be much higher than in the two courses where only parts of the MOOC were offered. The responses on the surveys show that a part of the students feel very comfortable with online learning, while another part prefers the more traditional face-to-face learning environment.

Conclusion

Using the designs from the framework, separate parts of the MOOC as well as complete open online courses can be integrated into regular face-to-face teaching. Students indicate they like the online materials in the MOOC as an inspiring addition to the traditional course materials. The use of open materials offers opportunities for reforming and innovating regular face-to-face programs with easy available high quality materials offered by other institutions.

BP 24

THE "PITFALLS" APPROACH TO DIAGNOSTIC EXPERTISE: A NOVEL THEORY AND EVIDENCE-BASED STRATEGY.

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Background and Aims

Based on recent evidence we hypothesize that the focus on the causes of diagnostic errors and the application of dual process theory may not be an appropriate solution to this problem. Thus, we designed and evaluated a strategy to improve diagnostic expertise based on an allostatic interoceptive predictive regulatory model (Sterling P. *Physiol Behav* 2012; 106: 5-15) of constructed emotions (Barrett LF. *How emotions are made: the secret life of the brain*: New York, Houghton Mifflin Harcourt; 2017) directed at identifying diagnostic pitfalls as described by Schiff and Singh et al (*Diagnosis* (2016), 4(1), pp. eA1-eA4) prospectively in a real-world clinical practice setting. This avoids retrospective "cognitive-de-biasing" for which agency of the moment (meta-cognition) is required but is difficult to achieve in real time and shown to be ineffective in recent studies.

Methods

Internal medicine residents were instructed to append the following sub-headings to their clerking impression in the patient's electronic health record (eHR): (a) Counter diagnostic features; (b) Things that do not fit; (c) Red flags. This template was added after the resident had entered his or her numerated list of diagnoses or issues. "Counter diagnostic features" was defined as symptoms, signs or investigations which are inconsistent with the proposed primary diagnosis. "Things that do not fit" was defined as any finding that could not be reasonably accounted for taking into account the main and differential diagnoses. "Red flags" were defined as findings which raised the possibility of a more serious underlying illness requiring early diagnosis or intervention. The attending physician was instructed to give feedback on these points during the bedside round and amend the eHR as appropriate.

Results

Over the first 6-weeks a total of 63 patients had a completed template documented in their eHR. The top 5 diagnoses in order of frequency were pneumonia, asthma, bronchiectasis, pulmonary oedema and upper respiratory tract infection. Residents documented "Counter diagnostic features" in 42/63 (67%), "Things that do not fit" in 47/63 (75%), and "Red flags" in 50/63 (79%) of cases. Frequently cited "counter diagnostic features" and "red flags" were pneumonia without chest radiograph evidence of airspace consolidation and haemoptysis respectively. Qualitative feedback indicated that the template enhanced supervisor-trainee interaction, improved diagnostic accuracy, and prevented diagnostic pitfalls without significantly increasing the time required to complete the bedside round.

Conclusion

In concurrence with the principles of allostasis, the "pitfalls" approach to diagnostic expertise at the bedside round appears to reduce premature closure and promote situational awareness in an energy efficient way. This is an important feature to ensure adherence, sustainability and automaticity. Moreover, pitfalls are novel unexpected situations which serve as predictive errors which need active cognitive processing to recalibrate and refine previous memory of similar cases - a vital learning step in diagnostic expertise. This may be an effective way to inculcate behaviour change which promotes the acquisition of high precision illness scripts and improve diagnostic accuracy in resident physicians during routine clinical work.

BP 25

FACTORS ASSOCIATED WITH PERFORMANCE IN CLINICAL REASONING TESTS OF NEUROLOGICAL LOCALISATION: A STUDY IN INTERNAL MEDICINE RESIDENTS*¹Loh KW, ²Rotgans JI, ³Tan K, ³Tan NCK**¹Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, ²Office of Medical Education, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, ³Department Of Neurology, National Neuroscience Institute, Singapore***Background and Aims**

Clinical Reasoning is the cognitive process of weighing clinical information together with past experience to evaluate diagnostic and management dilemmas. A variety of paper tests have been validated to assess clinical reasoning skills, but there has been a dearth of literature regarding factors influencing the development of these skills at the postgraduate level. We performed a retrospective study on Internal Medicine Residents to determine the sociodemographic and educational correlates of Clinical Reasoning in Neurological Localisation.

Methods

Subjects comprised of 162 Internal Medicine Residents on a three month attachment at the National Neuroscience Institute, Singapore, over a period of 2.5 years. Clinical Reasoning was assessed on the second month of their internship via two tests of Neurological Localisation - Extended Matching Questions (EMQs) and Script Concordance Tests (SCTs). Data on Gender, Undergraduate Training Institution, Residency Programme and Amount of Clinical Experience were recorded, and their association with EMQ and SCT scores evaluated via univariate and multivariate analyses.

Results

Univariate analysis indicated significant associations between Undergraduate Training Institution, Amount of Clinical Experience, EMQ and SCT Scores. Subsequent multivariate analyses suggested that Clinical Experience and Undergraduate Training Institution are positive predictors of EMQ Scores. Local Graduates also performed better than Overseas Graduates in the SCT, independent of other variables

Conclusion

Development of Clinical Reasoning in Neurological Localisation can be predicted via a two-factor model - Undergraduate Training Institution and Amount of Clinical Experience. Context specificity likely underlies the entire process.

BP 26

GUIDELINES FOR MENTORING IN UNDERGRADUATE MEDICINE*¹Tan YS, ¹Teo SWA, ²Sng J, ²Pei Y, ³Toh YP, ⁴Krishna L**¹Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ²Singapore General Hospital, Singapore, ³Assisi Hospice, Singapore, ⁴Department of Palliative Medicine, National Cancer Centre Singapore; Duke-NUS Graduate Medical School; Centre for Biomedical Ethics, Yong Loo Lin School of Medicine, National University of Singapore, Singapore***Background and Aims**

Mentoring in undergraduate medicine is an integral part of medical education. Extant in current literature are descriptions of mentoring programs and their benefits to the mentor, mentee and organisation. However, there is a lack of evidence based guidance advising on the development and implementation of undergraduate mentoring programs. This paper aims to identify the key aspects of mentoring guidelines with a goal to advise medical educators on the development of effective undergraduate mentoring programs.

Methods

A literature search was done to review mentoring guidelines in undergraduate medical education. Databases ERIC, Embase, Web of Science, PubMed, Cochrane and CINAHL were searched between 1st January 2000 and 31st Dec 2015. Articles including peer, near peer and group mentoring, mentoring in postgraduate education, and those that involved other disciplines were excluded. Thematic analysis was performed on the articles selected based on inclusion and exclusion criteria.

Results

23934 articles were retrieved from the initial search, duplicates were removed, a final number of 26 articles were selected based on inclusion and exclusion criteria. Key elements of undergraduate mentoring guidelines were studied, these include: Strategies for successful matching and initiation of a mentoring process; recommendations on the mentee to mentor ratio and evaluation of the participants and process. The importance of institutional involvement was emphasized, organisational strategies to support mentoring and policies to create a culture to cultivate mentoring were highlighted. Practical strategies to manage common challenges in mentoring were also suggested.

Conclusion

An evidence based guideline is presented to provide strategies to facilitate effective formal mentoring in undergraduate medical education. Mentoring itself is a dynamic process which holds the constantly evolving nature of a mentoring relationship at its core. The context-specific nature of mentoring mandate that these guidelines should be approached with discretion and flexibility, and adapted to cater to diverse environments and aims of mentorship programs. Further research is required to correlate the use of these guidelines to the long-term outcome of mentoring relationships.

BP 27**FOCUSED CARDIOVASCULAR ULTRASOUND (FoCUS) FOR MEDICAL STUDENTS. A PILOT TEACHING MODULE**

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Background and Aims

With improvements in technology, portability and reduced costs, point of care ultrasound protocols such as FoCUS are gaining popularity and acceptance across a broad spectrum of acute medical specialties. As such, there is a need to equip future doctors with a foundation in FoCUS from which further training to achieve competency can be obtained. This study aims to assess a pilot FoCUS teaching module, which uses simulation as a component to deliver its learning objectives.

Methods

4th year medical students enrolled in the National University of Singapore Yong Loo Lin School of Medicine attended a 2hour transthoracic echocardiography module during their acute care posting in emergency medicine and anaesthesia. The module included a presentation and hands-on component. The presentation covered the scope and limitations of FoCUS, how to obtain the 3 echo windows (5 views - PLAX, PSAX, Apical 4C, Subcostal 4C and Subcostal IVC views) and identifying normal echocardiographic appearances of the heart in terms of structure and function.

Students were then thought to recognise the key echo features of shock (Septic/distributive, Hypovolaemic, Obstructive, Cardiogenic and Combinations) through use of echo video clips. The hands-on component allowed students to practice obtaining 5 FoCUS views on a Heartworks TTE Simulator. A questionnaire containing 10 statements was used for feedback. Students graded each statement with a score of 5(strongly agree) to 1(strongly disagree). 1 statement was a yes/no question.

Results

A total of 301 medical students participated in the module in groups of approximately 20 persons. The questionnaire response rate was 95.02%. 62.9% of students strongly agreed that the module reinforced their theoretical knowledge of FoCUS. 63.6% of students also strongly agreed that they now understood the value of FoCUS in managing patients with shock.

In contrast only 41.3% of students strongly agreed that they felt confident in their ability to obtain the 5 FoCUS views after attending the module.

Conclusion

This module has demonstrated potential to deliver the theoretical aspects of FoCUS. Scores for "feeling confident in the practical aspects" were likely lower due to the limited duration of the module and time spent on the simulator.

We were also restricted by the student to teacher ratio which on average was 20 to 1. In future, we intend to add an additional echo simulator and live scanning with hand held echo probes to address this issue.

BP 28**SELF-AWARENESS, SUPERVISED LEARNING AND SAVOIR-FAIRE FOR PSYCHIATRISTS: A QUALITATIVE EXPLORATION OF RESIDENTS' EXPERIENCES AND PERSPECTIVES TOWARDS PSYCHOTHERAPY**

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Background and Aims

Psychotherapy is an evidence-based treatment of various psychiatric disorders. Nonetheless, its practice by doctors is limited by training opportunities, competing service demands, and resource availability. Still, psychotherapy training is oft-emphasised in psychiatry, as its understanding and practice is vital in holistic patient care. The purpose of this study is to explore psychiatry residents' personal and collective experiences and perspectives on psychotherapy training, in relation to their role as future psychiatrists.

Methods

Informed by a constructivist approach, 2 focus group discussions were conducted with psychiatry residents (N=10) who have completed their one-year rotation in psychotherapy, to explore 1) their perceptions of the psychotherapy rotation, 2) psychotherapy training and its influence on their clinical practice, and 3) pursuance of psychotherapy training beyond curriculum requirements. Anonymous written feedback was also collected at the end of each session for the residents to provide additional opinions on the psychotherapy rotation. Discussions were transcribed in verbatim, and analysed thematically. Initial themes were generated and iteratively compared, then organised into higher order themes.

Results

Four main themes were generated from the focus group discussions. Firstly, supervision was cited as a strength of the psychotherapy rotation. Besides providing a space for protected time and learning, supervision allowed for modelling, guided practice, and articulation of the process of learning and applying therapy.

Secondly, challenges to psychotherapy practice were highlighted. These included the lag time between didactic learning and application, producing a knowledge-skill gap; competing demands between psychotherapy learning and clinical service delivery during non-psychiatry rotations were also seen by residents as a potential limitation to learning.

Thirdly, residents reflected on their personal experiences of psychotherapy practice. Residents articulated the importance of cognitive flexibility in the simultaneous practice of cognitive-behavioural therapy and psychodynamic therapy, perceived as two contrasting therapies in terms of concept and delivery. Cognitive flexibility was also cited as an invaluable skill which enables residents to approach psychiatric conditions using both biological models and psychoanalytic perspectives. In the initial phases of developing these advanced clinical skills, anxiety, uncertainty, and apprehension were commonly cited experiences.

Lastly, the exposure to psychotherapy not only influenced residents' abilities in complex case formulation, but also aided in their professional development. The process of conducting therapy promoted self-reflection on residents' emotions and behaviours, and the impact on the doctor-patient relationship. Increased self-awareness also promoted a deeper understanding of professional identity and maturity.

Conclusion

The findings suggest the practice of psychotherapy may have an impact beyond psychiatric practice alone. Application of psychotherapy skills may aid in integrative clinical case formulation, recognition of the nuances in the doctor-patient relationship, and the appreciation of the practice of humanistic medicine.

BP 29

NURSING SUPERVISORS' PERCEPTIONS ON NEW RECRUITED REGISTERED NURSES' PERFORMANCES IN CLINICAL AREAS

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Background and Aims

Nursing Induction programmes (IPs) plays an important role in assisting a new recruited registered nurse (RN) to adapt to a new work environment, cultures and knowledge and skills in the organisation. In Khoo Teck Puat Hospital (KTPH), Singapore, the new RNs complete a series of lectures and skills assessment which lasts for 17 days. Retrospective quantitative data extracted from 5 cohorts of newly recruited nurses from March 2016 to March 2017 shows that 98% of inductees rated IPs as effective, topics were relevant, and trainers were experienced and knowledgeable (KTPH Induction Program Workshop Evaluation Summary, 2016-2017). However, feedback from nursing supervisors revealed that the performances of the new RNs are not meeting the required standards of the organisation. As a result, additional resources such as manpower and time are needed to coach and supervise these nurses. Thus there is a need to address these concerns on the review of our IPs which could impact in the transition of the new RNs to the workplace.

This study aims to examine the perceptions of nursing supervisors on the performances of the new recruited RNs.

Methods

A mixed method was adopted in this study. A total of 34 nursing supervisors from 17 inpatient wards were recruited in this study to respond to a set of questionnaires via online. There will be 4 focus group interview sessions carry out within 3 months to obtain their perceptions. Each focus group will consist of 6 -8 participants and their views will be recorded and transcribed. This will be analysed qualitatively.

Results

Collection and analysis of quantitative data and focus group interviews are still in progress. The results will be shared in 15th Asia Pacific Medical Education Conference 2018.

Conclusion

The findings will assist the education department in designing training sessions that will support new RNs to practice more confidently and perform well within 6 months of probation period. Teaching institutions and recruitment team will benefit from these research findings by collaborating and planning nursing programs with KTPH in equipping new RNs skills and knowledge in preparing the inductees' in facing transitional challenges in their new roles.

BP 30**HOLISTIC OBSTETRICS AND GYNAECOLOGY MIND MAPS (HOGMMS) TEACHING: EASY TO USE TOOL PROVIDES EQUALITY OF LEARNING, TEACHING AND ASSESSMENTS*****Karali H, Smith D, Goodson M****Department of Obstetrics and Gynaecology, Faculty of Medical Sciences, Newcastle University, Malaysia***Background and Aims**

Literature supports the benefits of Mind Maps as teaching tools, improving student engagement, motivation and implementation of curricula. The use of Mind Maps also reduces or eliminates the bias in students' assessment.

Many mind maps are used in OG teaching and learning; however they were directed to certain conditions or specific section of the subject discussion, unlike our HOGMMS which is designed to aid in achieving diagnosis by obtaining planned history, examination and investigations, followed by planning management of any case in OBS & GYN.

Methods

A pilot study conducted in Newcastle University Medicine Malaysia (NUMed) to evaluate the perceived learning benefits of HOGMMS for acquiring a range of clinical skills and standardising assessment and teaching methods. HOGMMS were developed by Hassan Karali in Sept.-Dec. 2015 and given to stage 3 NUMed students (n=113) for 6 months (Jan. 2016-July 2016) as a tool to assist their learning during their O&G rotation. After the completion of their O&G rotation, they were invited to complete a questionnaire assessing perceived benefits for skill acquisition and standardising assessment and teaching methods. Using percentages and Chi square analysis.

Results

Show that majority of students believed HOGMM was a useful learning tool across a range of parameters (min = 59%; max = 96%). Students who believed HOGMMS is useful for standardising assessment were more likely to report mutual benefits in terms of student learning ($\chi^2=35.836$; $P=0.0005$) and standardising teaching methods ($\chi^2=20.256$; $P=0.0005$).

Conclusion

This study suggests that student's value our HOGMM's not only for developing clinical skills but also standardising assessment and teaching methods.

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Florence Tang, Hong Kong S.A.R.
- BP32** **A First-Year Anatomy-Integrated Hybrid Cardiac/Abdominal Echography Basic Procedure Medical Education Strategy for Deepening Clinical Reasoning Skills**
Mai Shimbo, Japan
- BP33** **E-Learning: Perceptions of Medical Students at Newcastle University Medicine Malaysia (NUMed)**
Palika Mokool, Malaysia
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- BP39** **The Balance of Social Expectation and Self-Care in a Good Doctor: The Perspectives from the Third-Year Undergraduate Medical Students in Kaohsiung Medical University**
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- BP43** **A Practitioner's Inquiry: Teaching Pre-Clinical MBBS Students Using a Question Based Instructional Design with Clickers**
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Gayathri Nadarajan, Singapore
- BP45** **The Dialectics of Interprofessional Care and Education: A Meta-Ethnography**
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- BP48** **Factors Influencing Learners' Confidence in Performing Patient Handling Activities after Workplace Training**
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- BP49** **House Officers' Approaches to Learning Medicine and Clinical Performance**
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- BP52** **A Longitudinal Analysis of Readiness of Healthcare Students for Interprofessional Education at Keio University**
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- BP54** **In-Training Examinations and Outcomes of an Anaesthesia Residency Programme**
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Jo Hsin Chao, Taiwan
- BP60** **Discussion Boards as Facilitators of Global Communities of Practice to Support Development of Clinical Teaching**
Stuart Cable, United Kingdom
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BP 31

THE NEW INNOVATIVE PEDAGOGY: REFINEMENTS IN TRAINING BIOMEDICAL STUDENTS IN THE HANDLING OF EXPERIMENTAL MICE USING VIRTUAL REALITY TECHNOLOGY

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Background and Aims

To maintain animal welfare, experimental animals may not be used for training of manual skills. Based on the concept of the 3Rs, ie. Refinement, Reduction and Replacement, educators and scientists are also seeking to reduce the numbers of animals used, replace the use of animals with other techniques, and refine the associated training methods and experiments. Moreover, an alternative pedagogical approach to training in biomedical research is currently needed.

Virtual reality (VR) is a computer-generated interactive virtual interface that provides entertainment and excitement for the user and can serve as an innovative simulation tool to provide alternative electronic delivery methods that blend various learning approaches to support the training of students.

This proposed e-learning courseware aims to develop a lively learning environment called "electronic techniques in practice (eTips)" and investigate whether it facilitates the learning of experimental techniques and reduce the use of animals used in the experiments via virtual visualisation.

Methods

Our team constructed a 360-degree immersive virtual learning environment based on the animal holding core facility using the latest VR system of HTC Vive with teleport controller. The design of the virtual animal holding core facility focuses on teaching the regulations on the use of animals by testing the students' technical skills. Our team concur that the more different natural action of the triggers can do, the more satisfying for the sense of participation. The two handy controllers have been constructed as human hands which can track and manipulate all the work related to animal experiments in the eTips.

Results

We have just conducted a focus group interview for the pilot study of the Phase one eTips development. The participants wore the VR headset and tried the work with the teleport controller. Before each participant walked around the space provided while playing the eTips, our team installed two sensors on the opposite corners of the laboratory. After the engagement, the participants concurred that the VR can be good to build up the educational tool for the training of technical skills as they can immerse in the virtual environment.

Conclusion

Indeed, the setup is designed to enhance the students' spatial and experiential learning, increase their engagement in the training on handling skills, and improve their contextual understanding of how to use experimental animals. In addition, the VR training design emphasises the importance of achieving the 3Rs, even though the use of experimental animals in biomedical research is necessary to achieve breakthroughs in the diagnosis and treatment of human diseases.

BP 32

A FIRST-YEAR ANATOMY-INTEGRATED HYBRID CARDIAC/ABDOMINAL ECHOGRAPHY BASIC PROCEDURE MEDICAL EDUCATION STRATEGY FOR DEEPENING CLINICAL REASONING SKILLS*Shimbo M, Sato W, Oshima S, Hasunuma N, Ando H, Hasegawa H**Department of Medical Education, Graduate School of Medicine, AKITA University, Japan***Background and Aims**

It has become essential that all physicians deepen their clinical reasoning skills using echography. To achieve a guarantee of echography procedure mastery for all medical students, integrating the curricula and introducing not only practical training but also performance assessment (Objective Structured Clinical Examinations, or OSCEs) step by step from the first year of medical school is necessary for achieving this. However, in most cases the curriculum for first-year medical students in Japan consists largely of liberal arts education—a situation that provides for few opportunities to use echography. Therefore, we have established a hybrid training curriculum consisting of echocardiography including e-learning, simulator exposure and OSCEs for first-year medical students.

Methods

The training curriculum consists of self-learning via an e-learning system and lecture and practical echocardiography classes. The e-learning system provides basic anatomical instruction on the heart and abdomen, complete with ultrasound images generated on one part of the screen. All 125 medical students in the first-year class participated in this program every Tuesday afternoon from October to December. After building their basic knowledge and studying procedures via e-learning, they practiced echography with a simulator, and on each other. Finally, their basic echography skills were evaluated through OSCEs.

Results

70% of the students accomplished the e-learning course. The actual time for the hands-on echography practice was 17 minutes for the heart, and 15 minutes for the abdomen. The OSCE assessment points were the visualisation of long axis / short axis images in cardiac echography, and of major organs and the blood vessel system in abdominal echography. Almost all students were able to fulfil these requirements within one minute. Questionnaires administered after the program revealed that it had sparked the students' motivation to learn more about echography and about medical science.

Conclusion

To achieve better educational outcomes, it is necessary to improve e-learning teaching materials and to allocate adequate echography practice time. A first-year medical course anatomy-integrated e-learning/simulation/OSCE hybrid cardiac/abdominal echography basic procedure education strategy was effective in achieving a guarantee of echography procedure mastery and in raising medical student learning motivation.

Take-home Messages: For a new era when all doctors must deepen their clinical reasoning using echography coupled with ocular inspection, palpation and auscultation, we are planning to perform integrated step by step education from the first year through the sixth year of medical school using this e-learning/simulation/OSCE hybrid strategy.

BP 33

E-LEARNING: PERCEPTIONS OF MEDICAL STUDENTS AT NEWCASTLE UNIVERSITY MEDICINE MALAYSIA (NUMed)*¹Mokool P, ¹Paramasevon KR, ¹Wickramasinghe R, ¹Wijesiriwardena D, ²Smith D, ²Othman M**¹Newcastle University Medicine Malaysia, Malaysia, ²School of Biomedical Sciences, ²School of Biomedical Sciences, Newcastle University Medicine Malaysia, Malaysia***Background and Aims**

It has always been a challenge for medical students to adapt to new styles of learning when they join a medical school - a course that requires the understanding of basic concepts as well as the integration of the latter into clinical situations. Conventional lectures only provide the bare essentials and therefore, it is often seen that students rely on other resources to 'fill in the gaps' in their knowledge. Today, technology has made it possible for students to do so via E-learning. A wide range of E-learning resources are available to improve medical education namely: Panopto/Recap, websites, online videos, tutorials and journals as well as mobile applications. It is of great importance to know what are the preferred E-learning tools of students to be able to recommend the same at the start of their course, hence ensuring that they are well equipped for their journey at their respective medical schools.

The aims of this study were therefore to assess medical students' perception of E-Learning at NUMed based on:

- their preferred E-Learning tool
- the use of E-learning tools over conventional methods of studying
- the benefits of using E-Learning tools

Methods

A cross sectional study was conducted among Stage 1 and Stage 2 students at NUMed to assess their preferred study methods and their perception towards E-learning. The students were informed that the data collected would be kept anonymous and confidential. Data was collected on the 03/03/2017 in the form of a questionnaire that included information about:

- Demographics (5 questions)
- Types of E-learning tools used (7 questions)
- The benefits of using E-learning tools (6 questions)

All questions were close ended questions. Data was then analysed in the R Environment for Statistical Computing.

Results

128 out of 221 students responded to the questionnaires. Out of these respondents, 85 were from Stage 1 and 43 from Stage 2. Although lecture notes and textbooks were the preferred choice for most students, the 3 main e-learning tool used by them were Recap, websites and online videos. The reasons for using them were for understanding purposes and the fast access of information. According to the students, the factors affecting the use of these e-learning tools were time constraints (59%) and the speed of the network connection (69%). A regression model was used to assess whether there was a difference between the stages in terms of the benefit of using the e-learning tools and results showed an increase in the total score among stage 2 students (23 vs 21). However, these results were deemed insignificant as the P value was greater than 0.05.

Conclusion

Rapidly evolving technology is improving our educational resources. While E-learning tools were quite popular, students seem to be using them together with lecture notes and textbooks. Although they are considered beneficial, their uses are limited by factors such as time constraints and poor network connectivity. More research should therefore be done to see how E-learning improves medical education despite its limitations.

BP 34

TEACHING THE TORCHLIGHT EYE SCREENING TEST (TEST) TO NURSES AND OPTICIANS TO DO COMMUNITY EYE SCREENING: IS IT FEASIBLE?

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Background and Aims

Nurses and Opticians are potential points of contacts in the community to do eye screening. As a pilot study, Nurses of the Population Health Screening program and Opticians from the Society of Opticianry Practitioner (a registered professional body for opticians) were educated to do basic eye screening to serve the role as primary eye care professionals. Both groups were taught by an Ophthalmologist to do Torchlight Eye Screening Test (TEST).

TEST is a comprehensive eye examination technique using a torchlight to detect common eye conditions such as squints, eyelid lesions, proptosis, eyelid malposition, ocular surface diseases and shallow anterior chamber. Both professional had not prior experience with eye care or screening; while the optician was trained primarily to do eye refraction and spectacle fitting.

We evaluate the test performance and skill application of nurses and opticians after TEST training.

Methods

TEST was taught to 18 population health nurses (with general nursing diploma) and 10 private opticians (with opticianry diploma). The assessment examination comprised of written and practical test components.

The written tests consisted of 20 multiple choice questions (MCQ). A score of at least 80% (total score: 20) would be required for all 3 components for accreditation. It was done immediately post-training and repeated (with the same questions randomly re-sequenced) at 1 month and 3 months. The MCQ was designed to assess their ability to diagnose various eye conditions from clinical photographs of real patients.

The practical test required the candidate to demonstrate competency to do complete TEST examination on 5 real patients with eye pathology based on a structured rubrics system.

Results

The nurses obtained higher Mean MCQ Scores (MMS) for TEST (19.82 ± 0.57) than the opticians (9.07 ± 0.26) [$p < 0.05$] at baseline after training. At 1 months and 3 months, there was no difference in the MMS between the nurses and the opticians (18.18 ± 0.72 vs 18.72 ± 0.88 , $p = 0.0093$; 18.64 ± 1.72 vs 18.94 ± 0.75 , $p = 0.62$ respectively). The MMS decayed slightly for the nurses at 1 month ($p < 0.05$) but not for the opticians ($p = 0.47$). However, the MMS did not diminish further comparing 1 month with 3 months scores for the nurses ($p = 0.45$) and opticians ($p = 0.52$). Both groups passed the practical test requirements to demonstrate clinical competency.

The TEST-trained Nurses screened 896 patients, of which 46.7% (418/896) were detected to have one or more asymptomatic eye conditions involving the eyelid or eye. These were then referred to an optometrist or Ophthalmologist for further management. The Opticians performed opportunistic eye screening in their clients consulting them for spectacle prescription.

Conclusion

Both Nurses and Opticians obtained comparatively good MMS after TEST training at baseline, 1 month and 3 months. Despite a small decrease in MMS for nurses at one month, it did not diminish thereafter in both groups. Both groups applied their skills to detect various ophthalmic abnormalities in the community.

BP 35

DISSECTING THE MEDICAL CONSULTATION WITH AUTHENTIC DATA

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Background and Aims

A well-documented criticism of the often used 'categorise and code' or 'frequency count' methodologies for studying medical interaction is that coding categories are pitched at a very general level, and are insensitive to the particularities of doctor-patient communication and the phases of the medical encounter. The abstract statements and macro-principles that often result from these 'process analyses' to doctor-patient communication almost universally gloss over the complexity and specificity of the actions and responses that constitute the medical interaction. They also fail to establish the connection between communicative practices in medical consultations and medical outcomes such as decision-making, patient satisfaction or treatment adherence.

We introduce a detailed and empirically based research method that micro-analysis the actual interactional process between doctors and patients called Conversation Analysis (CA). CA has been successfully used to uncover the complex dynamics of actual doctor-patient interaction, and has been a turning point in medical research on physician-patient communication in the US, UK and Australia.

Methods

The essence of CA is a fine-grained context-sensitive analysis of video-recorded medical interactions. A key feature of this non-experimental methodology is its use of recordings of naturally occurring interactions in real clinical settings that is deliberately uncontrolled and thoroughly authentic. This deeply empirical approach gives us direct insight into how doctor-patient communication is actually conducted within specific medical contexts, and what works or does not work for the patients (and doctors) in such contextualised situations. From the recordings, the verbal data are carefully transcribed and represented using a set of conversation-analytic conventions that highlights turn-taking sequences, gaps of silence, overlaps and other intonational markers in the interaction. The sequential turn-by-turn verbal interaction between doctors and patients then becomes a vital resource for studying how intersubjective understandings (or gaps of understanding, even misunderstanding) are constructed within the consultation. Recurrent and systematic communicative practices can then be identified for further intervention. Using this method, 50 first-visit consultations to a Urology clinic were collected and analysed for a pilot study.

Results

Our preliminary findings highlights a few 'interactional flashpoints' within the context of a first-visit consultation to a Urology clinic due to haematuria (blood in urine). In particular, we detail how the specific ways in which counselling and recommendation of further diagnostic tests is done may be consequential to patients' subsequent consent (or rejection) of the doctor's recommendations.

Conclusion

- 1) The video-recordings of authentic medical consultations is an invaluable resource for training and further developing medical communication competence, as the examination and self-reflection of authentic data detailing actual practices has been found by clinicians to be a potent experience capable of triggering changes in attitudes and clinical practices that are beneficial for patient care.
- 2) The detailed analysis of individual interaction sequences can provide highly concrete recommendations in terms of what to say, and how to say it at a specific point within a medical interaction. This can consequently form the basis for focused communicative training sessions to improve doctor-patient communication, where the opportunities and pitfalls of medical communication can be discussed in depth.

BP 36**FACTORS SUPPORTING SELF-REFLECTIVE LEARNING IN PORTFOLIO ASSESSMENT; FROM THE PERCEPTIONS OF INTERNAL MEDICINE RESIDENTS AND SUPERVISORS IN SINGAPORE***Jaffar H**Department of Medicine, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

Self-reflection in Portfolios is considered central to lifelong deep learning in Competency-Based Medical Education (CBME). However, though the factors affecting self-reflected learning in portfolios are theoretically explained in postgraduate setting, engaging in these processes in daily clinical practices is complex and not clearly understood.

The aim of the study was to explore the supporting and engaging factors in self-reflected learning in portfolio assessment from the perspective of internal medicine postgraduate residents and their supervisors.

Methods

Qualitative methodology rooted in grounded theory was employed in the study. Semi-structured interviews in four focus group discussions (three with residents and one with supervisors) were done with a total of 23 participants. By constant comparative analysis, emerging themes for the active engaging factors for self-reflective learning in portfolio assessment were analysed in the collected data. The activity theory framework lens was used to acquire the complex relationships between themes.

Results

Four themes emerged from our study: mentorship, credible feedback, ownership and a purposeful portfolio. Mentee-mentor relationship (a subtheme of mentorship) was the central overarching concept and the rest of the themes were linked to this sub-theme. Self-reflective learning in portfolio assessment process, as perceived by residents and supervisors, is determined by a dynamic interaction between supportive and limiting factors. An effective mentee-mentor relationship is central to achieve the desired learning. We propose a model of mentee-mentor relationship in portfolio assessment that could be used to optimise the self-reflective learning.

Conclusion

The result of this study supported previous literature that describes variable factors affecting self-reflective learning in portfolio assessment. Activity theory application has extended this concept by understanding the complex interactions between the themes supporting and limiting factors (tensions) that could emerge in the process of self-reflective learning in portfolio assessment. We contributed new knowledge regarding optimising and tension resolution at the mentee-mentor relationship, which could serve to strengthen self-reflective learning in portfolio assessment. The proposed model based on mentee-mentor relationship could serve an educational value in faculty development and student orientation, where tensions could be recognised and supportive action could be taken that infuse and promote portfolio self-reflective learning with flexibility and ease.

BP 37**PRE-STUDENT INTERNSHIP PROGRAM BOOTCAMP FOR PAEDIATRICS- WHAT CAN BE GAINED FROM THIS?***Ng NBH, Aw MM, Soh JY**Department of Paediatrics, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

Final year medical students at our institution are required to undergo a 4-week Student Internship Program (SIP) in Paediatrics. It is unknown how prepared they may be for the SIP. We conducted a revision course ("SIP Bootcamp") prior to the SIP itself, focusing on 4 common paediatric conditions: Respiratory Distress, Assessing Fluid Status, Childhood Seizures and Fever in Children to help prepare students for the SIP.

We sought to assess the frequency of apprehension amongst the students towards the SIP and the effectiveness of the "SIP Bootcamp" in preparing the students for the actual SIP. We aimed to compare subjective learning experiences between students placed in the "hot seat" of a clinical encounter versus those who observed it.

Methods

Students in groups of 5-to-6 were rotated through the 4 stations mentioned above. 3 of these stations had a "hot seat" which required interaction with trained actors. For these stations, one student was placed in the "hot seat" whilst the rest observed the encounter. Each station focused on a different clinical skill; presenting clinical assessment to a senior doctor, counselling a parent, obtaining consent for a lumbar puncture and ordering intravenous fluid replacement. At the end of each station, resident tutors gave immediate feedback as to how the student in the hot seat performed. A written questionnaire with 14 questions was administered to the students immediately after the course.

Results

All participants (n=82) responded. Fifty-one of 82 students (62.2%) were apprehensive about the paediatric SIP posting with 46 (90.1%) students attributing their apprehension to a lack of strong foundation in the knowledge of paediatrics. Forty-eight (94.1%) of the 51 students felt less apprehensive of the SIP after attending the course.

17 students had the opportunity to counsel parents on febrile fit. 16 of 17 (94.1%) strongly agreed or agreed that they are more confident thereafter compared to the observer group where only 49 of 65 (75.4%) strongly agreed or agreed to being more confident in this task [$p=0.1066$]. 18 students had the opportunity to consent a parent for lumbar puncture. 16 of 18 (88.9%) strongly agreed or agreed that they are more confident of the task thereafter compared to 50 of 64 (78.1%) students in the observer group [$p=0.5024$]. 56 students had the opportunity to present to a senior doctor. 40 of 56 (71.4%) strongly agreed or agreed that they were more confident in doing this thereafter in comparison to 22 of 26 (84.6%) of those in the observer group [$p=0.2718$].

All 82 students strongly agreed or agreed that the course was useful in preparing them for the SIP rotation.

Conclusion

Apprehension is common among students prior to their Paediatric SIP, where lack of paediatric knowledge has been the main concern. The "SIP Bootcamp" can help allay the apprehension students feel towards the SIP and is effective in increasing students' confidence. A slightly higher proportion of students feel more confident in communicating with parents after being in the "hot seat" compared to their peers who were observing, but this trend is not statistically significant.

BP 38

APPLICATIONS OF MEDICAL CONSULTATION CONVERSATIONAL ANALYSIS

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Background and Aims

Communication is key in all aspects of the doctor patient relationship. Through good history taking an accurate diagnosis is made, and good counselling allows for good complete communication of procedures. Good communication can help overall establish good rapport and trust between doctor and patient.

Conversation Analysis (CA) is a detailed and empirically based research method that micro-analyse the actual interactional process between doctors and patients. Conversational analysis can help uncover the complex dynamics of actual doctor-patient interaction, allowing physicians to improve their communication skills and the overall patient-doctor interaction.

This technique has been applied in overseas medical education to improve teaching medical communication. This is a qualitative study of medical consultations in the outpatient Urology clinic, and the first novel use of conversational analysis in a pilot study evaluating medical consultations in Singapore in the local context. We report the first local pilot study evaluating the use of CA in a Urology specialist outpatient clinic.

Methods

50 first-visit consultations to a Urology clinic were collected and analysed for a pilot study. Video and audio recordings were made of actual clinic consultations between doctor and patient. Subsequently, the consultations underwent conversational analysis with the use of fine-grained context-sensitive analysis of the video-recorded medical interactions. From the recordings, the verbal data were carefully transcribed and represented using a set of conversation-analytic conventions that highlights turn-taking sequences, gaps of silence, overlaps and other intonational markers in the interaction. The sequential turn-by-turn verbal interaction between doctors and patients then becomes a vital resource for studying how intersubjective understandings (or gaps of understanding, even misunderstanding) are constructed within the consultation. Recurrent and systematic communicative practices can then be identified for further intervention. Institutional ethics board approval was obtained (DSRB Reference 2016/00561).

Results

Our preliminary findings highlighted a few significant findings. Firstly within the context of a first-visit consultation to a Urology clinic due to haematuria, particular aspects on efficient counselling on flexible cystoscopy were revealed, as well as understanding common patient concerns on the procedure and how to address them adequately. There were also difficult conversations with unhappy patients and pitfalls were identified that led to patients being unhappy. This would allow physicians to identify and avoid known pitfalls, preventing unhappiness in patients and potential complaints. There were also pointers highlighted through Conversational Analysis at the start of the medical conversation that identified patients that were possibly reluctant for treatment procedures. This would allow physicians to identify these patients early and modify their consultation to suit the patient.

Conclusion

This novel pilot study has uncovered numerous learning points from conversational analysis of actual medical consultations, with potential for applications in training of medical students in medical communication techniques, information for Simulated Patient scenarios, Residency specialty specific treatment counselling techniques, and also identification of potential difficult patients in real world consultations that help to avoid unhappy patient consultation outcomes. There are implications in terms of potentially increasing patient satisfaction and medical outcomes, and aiding outpatient clinic flow.

BP 39**THE BALANCE OF SOCIAL EXPECTATION AND SELF-CARE IN A GOOD DOCTOR: THE PERSPECTIVES FROM THE THIRD-YEAR UNDERGRADUATE MEDICAL STUDENTS IN KAOHSIUNG MEDICAL UNIVERSITY**¹Lin YC, ²Wang S

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Background and Aims

Medical professionalism is a raising topic that was considered important in all stages of medical education. Social expectations on important characters of a good doctor are usually taught. The curricula of medical professionalism usually take the perspective from the publics, professional communities or educational administrations that very often put the emphasis on physician's altruism and social responsibilities. Such approach has raised the counterpart of professionalism movement that many young doctors and medical students are against such movement and demand more autonomy from the social contracts that modern medical professionalism has claimed. It appears that a balanced approach to altruism and physician autonomy or well-being is very important to the real learning outcome of a curriculum of medical professionalism. This study is a survey on medical students' perspective about how a good doctor would be like after a formal course of medical professionalism. We aim to identify characters that the counter-balance the burden from important characters in medical professionalism such as altruism and social responsibilities.

Methods

In a formal one-year course of medical professionalism for 3rd-year medical students in Kaohsiung Medical University, a post-course open questionnaire about the characters and abilities of a good doctor was conducted at the end of a professionalism course. Students were asked to write a narrative about a good doctor's characters from their own perspectives. The writings were analysed by two reviewers. Themes and items emerged from content analysis of the writing.

Results

Ten major themes were identified from the writing of 151 year-3 medical students and the top three were skilful in communication, pursuit professional identity, and professional knowledge. It was interesting to find that work-life balance and endurance were also mentioned the more than one-third of the students. This survey of student's expectation on a good doctor's characters and abilities revealed student's agreement with the common social value on medical professionalism. However, the inclusion of work-life balance and endurance in student's expectation also show their need for learning to be balanced in social expectation and self-care.

Conclusion

Our study revealed that the common value of medical professionalism and important characters of good physicians are well accepted by medical students. However, student's emphasis on physician self-care and well-being revealed that the worry or criticism on curricula of medical professionalism may actually represent the need of students to be empowered and prepared for such a demanding professional career. Educators of medical professionalism may include self-care and physician well-being in their curriculum to make a more balanced approach in their teaching.

BP 40**DEVELOPING A NATIONAL MENTORING SCHEME FOR TRAINEE PHYSICIANS: BENEFITS, CHALLENGES AND PITFALLS**¹Mathews C, ²Jessica C

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Background and Aims

In 2013, morale amongst trainee physicians in the United Kingdom (UK) was in decline. Changes in working conditions had reduced working hours to safer levels, but had correspondingly caused decreased continuity in patient care and fragmentation of the workforce. This, together with concerns over healthcare funding and subsequent contract disputes, led to growing disenchantment. Junior doctors in growing numbers were leaving hospital medicine, leaving the UK to practise overseas, or leaving medicine altogether. In this environment, opportunities for trainees to build nurturing relationships with senior colleagues became less frequent. Innovative ways of embedding pastoral support into training programmes became increasingly important

At the Royal College of Physicians, London (RCP) we therefore developed a national mentoring scheme to support this vital, but vulnerable, group of trainees. Mentoring is widely recognised as a crucial part of professional development. Our objective was to provide a powerful and positive careers resource that would enable trainees to flourish, as well as offering senior doctors the opportunity to reflect on their own career development and to 'give back' to their junior colleagues. Ultimately our aim was to support and retain high quality physicians within hospital medicine thus safeguarding high quality care for patients.

Methods

A pilot mentoring scheme was initiated for 6 months in 2014/15. Applications were invited from RCP members. All participants were trainee or consultant physicians. Mentees were in their first 4 years of training. Mentors were either trainees from Year 4 and above, or consultant physicians. Participants were matched into partnerships based on geography and career interests. Ground rules were laid for participation within the scheme. Mentors were provided with in-house mentorship training. A governance board was convened within RCP to mitigate against patient or trainee safety issues. At the end of the pilot scheme, feedback was obtained from participants.

Results

Feedback from the pilot programme was obtained from 33 mentoring partnerships. Of the mentees, 6.1% were from Year 2 of training, 57.5% from Year 3 and 36.3% from Year 4. Modes of contact between participants included email, telephone and face-to-face. Positive feedback was obtained regarding the benefits to both mentee and mentor of the mentoring relationship. Suggestions for improvement included 1) mentees selecting their own mentors from a robust database 2) provision of mentee training 3) provision of face-to-face induction. The principle challenge faced by the RCP team was in actively engaging mentees. Despite initial enthusiasm and sign-up from large numbers of potential mentees, subsequent retention and participation in the scheme was less easy to secure.

Conclusion

Mentoring fills an important gap in the pastoral support of trainees. Benefits of a mentoring partnership are clear to see for both mentee and mentor. Challenges include successful matching of participants, sustaining a user-friendly matching database, and maintaining the engagement of a group of enthusiastic, but busy, trainees who already struggle to balance their commitments both inside and outside of work.

Positive feedback from the pilot scheme led the RCP to continue to fund mentoring. The scheme was expanded in 2015 and continues to operate (<https://www.rcplondon.ac.uk/education-practice/advice/become-rcp-mentor>).

BP 41

MANUAL DEXTERITY AND CAREER CHOICE OBSERVED IN A LAPAROSCOPIC SURGERY SIMULATION TRAINING FOR MEDICAL STUDENTS

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Background and Aims

In Japan, medical students are allowed to choose their clinical specialty after mandatory 2-year post-graduate clinical training program by themselves. Since 2009, we have introduced laparoscopic surgical simulation training in a clinical clerkship in three surgical departments (Urology, Regenerative Surgery, and Organ Regulatory Surgery). We have investigated the relationship between medical students' manual dexterity and their post-graduate clinical specialty choices.

Methods

The subjects were 167 medical graduates from 2012 to 2013 in Fukushima Medical University. During undergraduate clinical clerkship, they had experienced laparoscopic surgical simulation training using Lap Mentor™ (Symbionix, CO., Ltd., Ohio, USA). Their performances were measured via 16 kinds of objective parameters (objective index) in 3 basic training menus (spatial recognition, clipping and grasping, bimanual coordination). They self-assessed their manual dexterity on a five scale (very dexterous, dexterous, neutral, clumsy, and very clumsy) (subjective index). After simulation training, we asked students to fill a post questionnaire sheet about their future career preference (surgical fields, non-surgical fields, and not yet determined). Their choices in clinical specialty were surveyed between 3 and 4 years after the graduation of medical school.

Results

After the laparoscopic surgical simulation training, 33 students (19.8%) answered they preferred "surgical fields", 53 students "non-surgical fields" (31.7%) and 81 students "not yet determined" (48.5%). The ratio of students who self-assessed as "clumsy" or "very clumsy" was significantly higher among those who preferred "non-surgical fields" than those who preferred "surgical fields" ($p < 0.05$). However, objective index showed no differences between them. After a follow-up survey, we were able to identify their clinical specialties in 138 graduates (82.6%). There were no differences in both objective and subjective indexes between the graduates who have chosen "surgical fields" (64 graduates) and "non-surgical fields" (74 graduates).

Conclusion

Manual dexterity during undergraduate simulation training does not seem to affect the choice of clinical specialty. In addition, there were no significant differences in both objective and subjective indexes of manual dexterity between the graduates who have chosen surgical fields and non-surgical fields.

BP 42**APPLICATIONS TO MEDICAL SCHOOLS IN JAPAN, CONSIDERING CITY SIZE AND SCHOOL TYPE: FROM A NATIONWIDE SURVEY OF HIGH SCHOOL GUIDANCE COUNSELORS*****¹Otaki J, ¹Taketomi K, ²Ito Y, ³Nagata-Kobayashi S****¹Centre for Medical Education, Graduate School of Medicine, Hokkaido University, Japan, ²Department of Biostatistics, Graduate School of Medicine, Hokkaido University, Japan, ³Clinical Department of Internal Medicine, Kyoto University Hospital, Japan***Background and Aims**

Most medical school graduates will become doctors, and widening educational disparities in Japan make it imperative to verify the system and acceptance criteria for medical school entrance examinations. Some countries have attempted to rectify such disparities using criteria additional to academic achievement. This sort of approach must be effectively adopted in Japan. We collected relevant information from high school guidance counsellors to verify the contents of medical school entrance examinations.

Methods

We compiled a list of 1,746 high schools in Japan, based on two articles in weekly Japanese magazines that published numbers of students from each high school who were entering leading universities or medical schools. Cross-sectional questionnaires were sent by post to guidance counsellors of those high schools. Questionnaire items encompassed attributes of schools, respondents, and students at the schools taking university entrance examinations; the home environments of those students; and opinions regarding current medical school entrance exams. The items were based on our research and findings from a related international symposium. Pearson's chi-squared test was used for analysis. Approval from the Hokkaido University Ethical Committee was deemed unnecessary as there were no applicable ethical considerations.

Results

The response rate was 62.7% (n=1,094): 671 (61.3%) working at public high schools and 423 (38.7%) at private ones; 620 (56.7%) represented schools in larger cities ($\geq 200,000$ residents); 426 (38.9%) respondents indicated that more than two of their school's graduates entered medical school each year, and 136 (12.4%) indicated more than 10. These proportions differed by city size and high school type. Among the 296 respondents from private schools in larger cities, 153 (51.7%) indicated more than two students, and 54 (18.2%) indicated more than 10. In contrast, these proportions among 347 responses from public schools in smaller cities were 93 (26.8%) and 13 (3.7%). Many of the surveyed guidance counsellors reported that wealthier, urban students had a clear advantage.

Conclusion

The proportions of high schools with many graduates entering medical schools vary in accordance with city size and high school type. These results suggest economic and regional disparities among high school students in Japan influence the students' decisions to continue on to medical school. This influence of educational disparities should be more extensively clarified.

BP 43**A PRACTITIONER'S INQUIRY: TEACHING PRE-CLINICAL MBBS STUDENTS USING A QUESTION BASED INSTRUCTIONAL DESIGN WITH CLICKERS*****Nufable J, Nufable S, Guilding C****The Medical School, Faculty of Medical Sciences, Newcastle University, Malaysia***Background and Aims**

The use of clickers, more technically known as the 'Automated Response System' has become common practice among lecturers in recent years due to a drive towards increased interactivity and formative assessment in lectures. The purpose of this practitioner's inquiry is to investigate how use of questions with clickers or 'Question Based Instructional Design with Clickers (QBIDC)' influences development of knowledge to improve the author's teaching practice in the early years of medical school.

Methods

A qualitative research approach was taken. Twelve MBBS students from pre-clinical years at Newcastle University Medicine Malaysia were invited to participate in a focus group discussion. Question such as "How QBIDC may help you achieve your learning outcome?" was asked to initiate a discussion which was audio-recorded and transcribed. Thematic analysis was performed where emergent themes were identified and examined to uncover relevant themes to the inquiry questions. The author's personal reflection on the use of QBIDC and relevant emergent themes from the focus group were matched to identify concordant themes. These themes were subsequently used by the author to come to an understanding of the inquiry questions and inform his teaching practice.

Results

The use of 'Question Based Instructional Design with Clickers' may foster critical thinking and perhaps help students shift to self-directed learning early in medical school. Students' passivity is minimised as it may offer a safer environment for learning in which they can participate anonymously and allow interactivity. However, it might also undermine the students' development of knowledge as it may be too time consuming and may lead to less time for explanation of answers and concept elaboration.

Conclusion

'Question Based Instructional Design with Clickers' may positively influence development of knowledge and enhance the author's ability to help students develop knowledge. However, it can also be challenging as it requires longer lesson plan preparation in terms of meticulously developing relevant questions that would encourage critical thinking, peer to peer and teacher to student collaboration and integration with prior concepts.

BP 44

SIMULATED TASK TRAINER TO TEACH MINOR SURGICAL PROCEDURES- MOVING FROM 'LEARN ONE, SEE ONE, DO ONE' TO 'LEARN ONE, SEE ONE, PRACTICE ONE, DO ONE'.

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Background and Aims

In our current teaching environment, simulation and task trainer is a mode of teaching for complex procedures such as intubation and central line placement. However, minor surgical procedures such as incision and drainage, nail bed avulsion and repair and trephination are still being taught traditionally. Junior doctors see one, following which, they are expected to perform the procedure. These skill sets are especially essential for emergency and family doctors. Such a method of teaching may not give all the junior doctors the chance to learn and be confident in performing them. Furthermore, there are no simulated models available in the market to teach such minor surgical procedures. Hence using reusable materials, we created simulated task trainers and conducted a minor procedure workshop. Following which, we conducted a survey to evaluate the level of confidence of the learners, the impact on their clinical decision skills and impact on patient's care.

Methods

This was based in the Emergency Department of Changi General Hospital in Singapore, where new junior doctors from a variety of backgrounds would start every 6 months. They would undergo a series of tutorials to learn how to manage common patient presentations during the posting. Initially, a learner's needs assessment was done, where it was discovered that despite the didactical teaching of procedure skills, the junior doctors were not confident in performing them on patients. Hence the senior residents created abscess and nail models using reusable materials and conducted a workshop. Prior to the workshop, all 24 participants completed a survey form, which assessed their prior background, skills and confidence level.

Results

From the survey prior to the workshop, only 52.2% had ever performed an incision & drainage and only 8.7% had ever performed a nail bed avulsion & repair as well as trephination. After the workshop, the proportion of doctors confident in performing incision and drainage increased from 46% to 100%. The proportion confident in performing nail bed avulsion and repair increased from 4.3% to 78.3% and those confident of performing nail trephination increased from 8.7% to 95.7%. Besides being more confident in the procedures, 87% of the junior doctors felt that this workshop increased their confidence in delivering safer patient care and all found it useful.

Conclusion

With the traditional 'learn one, see one and do one' approach, the doctors would learn the procedures in a didactic manner, see one being performed on a patient, following which they would do one. With such a teaching method, not all of them had a chance to see or perform such basic procedures. However, with the workshop using simulated task trainers, the 'learn one, see one, practice one and do one' approach was adopted where the learners learn and watch a video prior to the workshop (see one), following which, they get to practice on simulated models prior to performing them on patients (do one). This ensures that everyone entering the Emergency Department has a chance to learn, see and practice. This was found to increase the learner's confidence level and skills.

BP 45**THE DIALECTICS OF INTERPROFESSIONAL CARE AND EDUCATION: A META-ETHNOGRAPHY***Lim I**Group Education, National Healthcare Group, Singapore***Background and Aims**

A number of reviews on the areas of interprofessional care (IPC) and interprofessional education (IPE) have been conducted by scholars over the last decade. These reviews can be categorised into three main types, namely, thematic synthesis; Cochrane review; and realist synthesis. Each review type made unique contributions, but also had limitations due to their choice of synthesis methods and studies included for review. A perusal of extant reviews of IPC and IPE revealed several issues. First, there is a lack of conceptual frameworks that have the latitude to assimilate broad number of topics and contexts. Second, although scholars referred to the concept of complexity frequently, very little guidance is offered on how scholars and healthcare professionals can work with these complexities. Third, IPC and IPE were frequently treated as separate phenomena, although they could be considered as mutually constitutive from an ontological point of view. This study aims to address the shortfalls identified above.

Methods

A meta-ethnographic study was conducted to synthesise empirical studies of IPC and IPE (combined as interprofessional learning and practice; IPLP) that used cultural-historical activity theory (CHAT). Eight major databases and two specific journals were searched for IPLP studies that utilised CHAT. Full-texts were coded and analysed in consultation with phases and procedures outlined by Noblit and Hare.

Results

35 full-texts from 30 studies met the inclusion criteria. At the highest level of abstraction, organisation of IPLP was characterised by the contradictions brought about by concomitant demands of the contradictions of (1) expansion and alignment of object motives; and (2) reining in and unbridling of systems. These contradictions could be conceived of as dialectics pertaining to the problem of IPLP. Dialectics can be conceived as a rubber band in which 'interdependent and mutually exclusive poles are continually connected in a push-pull on each other'. A range of dialectics in IPLP can be interpreted from CHAT's perspective, with each pair of thesis and antithesis representing an ongoing dynamic push-pull that creates tensions in IPLP.

Conclusion

The whole point of working towards a synthesis is that a meta-ethnography, as a comparative translation, is 'not to achieve closure, but to enable discourse'. Future efforts should continue this discourse regarding the meta-dialectic of division and integration of labour in IPLP. The dialectic method of exposition, Hegel argued, is a method of scientific exposition that works because the world operates in a dialectical manner. Scholars of IPLP will benefit by adding the tool of dialectic in their research toolbox.

BP 46**DELIVERING VALUES-BASED EDUCATION THROUGH EXPERIENTIAL LEARNING IN A RESIDENCY OUTDOOR ORIENTATION CAMP: A MIXED-METHOD STUDY***¹Seo WL, ²Lim AY, ³Ooi SBS**Departments of ¹Paediatrics, ²Orthopaedic Surgery, and ³Accident & Emergency, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

Post-graduate medical residency programs are traditionally well equipped to inculcate technical skills and clinical capabilities, often delivered through outcomes based education. Values based education is integral in nurturing a well-rounded resident. The process of experiential learning hinges on immersive participation and reflection, and is a promising approach to values-based education. The National University Health System (NUHS) residency 3-day-2-night orientation camp is designed with "Outward Bound Singapore" to inculcate NUHS institutional TRICE values (Teamwork, Respect, Integrity, Compassion, Excellence) through activities and concrete experience. Learning and reflection is facilitated by hospital leaders. It runs biannually before the start of each residency intake.

The aim of this study is to discover the utility of employing the novel approach of employing experiential learning in delivering values-based education. The OBS orientation camp is compulsory for all new NUHS residents. Through an online survey disseminated to residents after the camp, we aim to explore how values-based education delivered during the camp translates to application of these values on real-life interactions. The desired outcome is delivery of professional and positive patient-centred care.

Methods

The Outward Bound Singapore (OBS) orientation camp is held biannually, prior to the induction of each batch of new hospital residents. In this first study, a survey will be sent out to all residents. The survey requests for residents' evaluation, on a Likert scale, on how effective the camp activities were in guiding understanding of the hospital's institutional values, namely teamwork, respect, integrity, compassion and excellence. The survey also gathers the residents' qualitative descriptions on how the camp activities influenced their actual work encounters in the hospital, with particular attention to the institutional values described.

Results

Residents were surveyed at various stages in training, up to 6 years after camp attendance. 82% (63/77) of residents reflected that the camp lead to self-discovery of the TRICE values. Majority of the residents (57%, 44/77 residents) felt the lessons learnt were transferable to the hospital setting. The NUHS OBS orientation camp is a novel mode of experiential learning utilised to deliver values-based education. It is received favourably by the residents. The participation of hospital leaders and senior doctors had a positive impact.

Conclusion

The desired outcome of values-based education is the delivery of professional and positive patient-centred care. An aptly-designed camp with a focus on experiential learning, curated and led by hospital leaders can have lasting impact and should be considered a mode of delivery of values-based education in various medical disciplines.

BP 47**"TWO MINUTES OF SILENCE" - A PILOT STUDY FOR MINDFULNESS**

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Background and Aims

The teaching of mindfulness or being observant in medical students is a new concept. The benefits of being mindful have been shown to improve memory, observation skills, attention, situational awareness and handling of stressful situations eg. during an examination.

Methods

A pilot study was conducted on eighteen Year-3 undergraduate medical students at the end of their 8-week module in orthopaedics. The students were firstly asked to complete a pre-test mindfulness questionnaire (CAMS-R). This self-assessment questionnaire takes on the person's multi-dimensional view of mindfulness. The mindfulness test was carried out using 3 pre-selected orthopaedic in-patients who each has several clinical signs. The students were told to list up to 5 signs per patient that they felt was most important which was then analysed against the answers prepared by the educator. No interactions were allowed between students and patients during the 2-minutes of testing.

Results

The students felt that this test practice was fun, beneficial and felt that they have been made more aware of their surroundings. Most students managed to detect all the major signs, though there were no correlation between the CAMS-R scores and the test scores. 9 students scored at least 67% and of which 1 student obtained the highest score of 80%. 3 students did not adhere to the instructions and listed as many signs that they could see without a sequence of importance.

Conclusion

The result of this study shows that there is a difference in level of mindfulness between a student and an educator. Our scoring correlation was based on a small sample size, therefore may not be conclusive. With a prospective study in time, the collective data would present a more accurate conclusion. In addition, we feel that teaching of mindfulness should be started in the early years of medical school to inculcate a better doctor of the future. We believe that this teaching method is beneficial to our medical students and encourages them to undertake an active learning role.

BP 48**FACTORS INFLUENCING LEARNERS' CONFIDENCE IN PERFORMING PATIENT HANDLING ACTIVITIES AFTER WORKPLACE TRAINING***Giam YTJ, Lim HH, Tan SKH**Occupational Therapy, Allied Health Services & Pharmacy, Tan Tock Seng Hospital, Singapore***Background and Aims**

Service Ambassadors (SAs) are an important group of frontline staff who assist visitors with registration and handle enquiries at ward registration counters in a public hospital. Despite high prevalence of patient handling activities at their workplace, SAs were not equipped with skills to assist wheelchair users. Three patient handling activities relevant to their workplace, namely wheelchair handling, toilet and car transfers were identified as part of the skills upgrading programme for SAs. Occupational Therapists (OTs) were engaged to train and assess their competencies in these specific patient handling activities through theory and practical training sessions.

The aims of this study are to 1) compare the SAs' confidence level in patient handling activities rated pre-training, post-training and six months later; 2) explore the factors influencing SAs' confidence in performing patient handling activities after training; and 3) improve future workplace training programmes.

Methods

This pre-post study uses both quantitative and qualitative data for analysis. Data was collected in two phases at six months apart. Quantitative data was gathered through confidence ratings collected pre and post-training from 24 SAs who attended the training using a numeric rating scale from 0 (Not confident at all) to 10 (Totally confident). Six months later, confidence ratings were collected again. Qualitative data was gathered through questionnaires and interviews among the SAs. Triangulation was done using qualitative data gathered from email interviews with five supervisors.

Results

A total of 24 SAs were trained in 5 runs and 3 had left the department six months post training. From the preliminary data collected from 14 SAs in June 2017, the mean confidence ratings increased from 1.7 ± 2.6 to 7.4 ± 1.3 post-training but decreased to 6.4 ± 1.4 six months post-training. Data from the remaining 7 SAs who were trained in the later runs will be collected in September 2017, six months post-training.

Based on the preliminary data collected, factors that increased the SAs' confidence included knowledge and patient handling skills gained during the workplace training and being involved in refresher trainings or having the responsibility of coaching others post-training. Factors that decreased the SAs' confidence ratings at six months post-training include the lack of opportunities to practice the skills at work, patient factors and the SAs' personalities and mindset (e.g shy, discomfort with physical contact and fear of injuring visitors).

Conclusion

This study highlights that the importance of workplace application after training to maintain confidence among learners. Healthcare educators may consider incorporating workplace activities in the design of workplace training programmes for longitudinal learning of adult learners.

BP 49**HOUSE OFFICERS' APPROACHES TO LEARNING MEDICINE AND CLINICAL PERFORMANCE***¹Chen P, ²Chen Y, ³Liang J, ³Tsai C**¹Graduate Institute of Medical Education & Bioethics, and ²Department of Medical Education, College of Medicine, National Taiwan University, Taiwan, ³Graduate Institute of Digital Learning and Education, National Taiwan University of Science and Technology, Taiwan***Background and Aims**

Although approaches to learning have been well studied in science-major learners, no studies have been focused on examining the associations between the approaches to learning medicine and the learning outcomes as indicated by clinical performance. This study aimed: (1) to examine the association between house officers' approaches to learning medicine and clinical skills; (2) to examine the association between house officers' approaches to learning medicine and clinical reasoning; and (3) to examine the association between house officers' approaches to learning medicine and procedural skills.

Methods

We conducted this study in a university-affiliated medical centre located at Northern Taiwan. A total of 126 post-graduate year 1 (PGY) house officers who received general medical training from 2015 to 2016 in this medical centre were eligible for this study. We developed the Approaches to Learning Medicine Questionnaire (ALMQ), a modification of the Revised Learning Process Questionnaire which has been widely used to measure the approaches to learning sciences. We defined clinical performance of clinical skills as the average rating of Mini-Clinical Evaluation Exercise (mini-CEX), clinical reasoning as the average rating of Case-Based Discussion (CbD), and procedural skills as the average rating of Direct Observation of Procedural Skills (DOPS). The assessments using mini-CEX, CbD, and DOPS were collected during their one-year training. The internal consistency reliability of each assessment tools, i.e. ALMQ, mini-CEX, CbD, and DOPS, was examined using Cronbach's alpha. Linearity between an independent variable and the dependent variable was examined using Pearson's correlation coefficient or Spearman's Rank correlation coefficient depending upon the scale of the independent variable. Stepwise multivariate linear regression analysis with backward selection was undertaken to examine the associations between the approaches to learning medicine and the clinical performance as indicated by mini-CEX, CbD, and DOPS.

Results

The Cronbach's alpha values ranged from 0.80 to 0.94, indicating good internal consistency reliability for all the assessment tools. Deep learning motivation, i.e. intrinsic interests ($p=0.04$), and academic performance upon graduation ($p=0.03$) were positively associated with clinical skills (mini-CEX). Surface learning motivation, i.e. fear of failure ($p=0.02$), was negatively associated with clinical reasoning (CbD). In comparison, surface learning motivation, i.e. aims for qualification ($p=0.05$), was positively associated with clinical reasoning (CbD). None of the elements of deep motivations, deep strategies, surface motivations, and surface strategies significantly predicted house officers' procedural skills (DOPS).

Conclusion

House officers' approaches to learning medicine, i.e. deep motivation and surface motivation, were significantly associated with the clinical skills as indicated by mini-CEX, and clinical reasoning as indicated by CbD.

BP 50

HIDDEN CURRICULUM: DO TUTOR HOPES FOR CHARACTERISTICS ACHIEVED BY INTERNATIONAL MASTERS IN MEDICAL EDUCATION STUDENTS INCREASE THE NUMBER OF TRANSITIONS TO BE MANAGED?

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Background and Aims

Some graduate characteristics, of Dundee's Masters in Medical Education (MMEd) students appear as learning outcomes. Do others fit the description of hidden curriculum - learning and perspectives acquired informally? Our study explored hidden characteristics MMEd tutors hoped international, students might achieve and whether this increased transitions to be managed

Methods

We undertook semi-structure interviews with a small sample of our faculty. Participants discussed the question: what are the hidden characteristics that you hope we MMEd international graduates might have after completing the programme? Thematic analysis was carried out on the interview scripts. Findings were disseminated through presentation to the faculty.

Results

Three main themes were identified from all respondents' comments. These were: lifelong learning, flexibility and problem solving. In addition, individual respondents also described sense of humour, collaboration, humility, role-model, inquisitiveness, optimism, and ability to express oneself clearly.

Whilst tutors valued these characteristics as key to making the transition to qualified medical educators they rarely appeared in the written curriculum and strategies for their development were not explicit. One recommendation might be to develop a forum and discourse focussed on supporting students with these embedded transition processes.

Conclusion

Tutors might utilise the articulation of these hidden expectations to support students in addressing how they might make the transition as graduates of MMEd back into their own communities of practice on return to their own different cultures and geographic regions.

Take-home Messages

Postgraduate masters' students are managing multiple transitions, from clinical medicine to social sciences and education, from their own culture to western conceptions. The hidden curriculum adds additional transitions but with less support and guidance. Therefore, further consideration is needed to develop the supporting environment for the students facing the transformation.

BP 51**CONTEXTUAL PROFESSIONAL CHALLENGES PROMOTE OR HINDER SELF-REGULATED LEARNING: A QUALITATIVE STUDY CONTRASTING RURAL PHYSICIANS WITH UNDERGRADUATE LEARNERS IN JAPAN**

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Background and Aims

The slow development of self-regulated learning (SRL) among East Asian medical students has been attributed to cultural values and the teacher-centred curriculum. Nevertheless, Japanese graduates in rural settings are proficient at addressing challenges without access to specialists. The aim of this study is to illuminate the differences in learning activities between physicians in a rural clinical setting and medical students in a teacher-centred conventional curriculum in East Asia, and to elucidate contextual attributes promoting or hindering SRL.

Methods

We conducted interviews and diary data collection among rural physicians (n=10) and undergraduates (n=11) who undertook self-study of newly encountered or recognised diseases through their daily learning activities. We analysed their learning behaviours, motivation, and metacognition using constructivist grounded theory.

Results

Rural physicians considered a local community as a learning environment, and saw their roles as unique to other community members and the qualities of tasks as high-stakes. They developed strategic learning abilities to cope with this high-stakes task. Undergraduates viewed a same school year as a learning environment unit, in which they preferred to be one of the crowd. They preferred to make learning tasks low-stakes by setting safe goals in order to avoid being left behind by other members. They tended to behave in a homogeneous manner (study as others do).

Conclusion

Immersion in a very responsible professional role where task stakes are high promotes a professional identity that in turn intrinsically motivates physicians to learn. They accordingly initiate learning strategies and metacognitive reflection in a self-regulated manner. On the other hand, teacher-centred education promotes homogeneous learner behaviours which are dependent on teachers' instructions and classmates' learning activities. This justifies exposing ill-prepared learners to contextual challenges in order to promote SRL.

BP 52**A LONGITUDINAL ANALYSIS OF READINESS OF HEALTHCARE STUDENTS FOR INTERPROFESSIONAL EDUCATION AT KEIO UNIVERSITY**

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Background and Aims

Interprofessional education (IPE) has been introduced across the schools of medicine, nursing, and pharmacy at Keio University. IPE at Keio University includes a beginner-level half-day workshop for first year students at the three schools, an intermediate half-day workshop for 4th year medical and pharmacy students and 2nd year nursing students, and an advanced one-day workshop for final year students at the three schools. Approximately 360 students attended each program. This study aimed to examine if the readiness of students for IPE changed after each program, and the effect of the number of the programs that students completed on readiness for IPE.

Methods

To investigate the readiness of students for IPE, the Japanese version of the Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire was taken before and after the three programs. The readiness was measured from 2013 to 2016.

Results

In 2016, all students joined all three programs, so the readiness score of the students was follows: in the beginner program, readiness of students for IPE increased from 75.8±9.3 to 80.6±9.1 in medical students, from 78.2±6.9 to 83.2±8.0 in nursing students, and from 75.5±7.6 to 80.6±8.2 in pharmacy students. In the intermediate program, readiness for IPE increased from 73.5±11.4 to 79.5±12.2 in medical students, from 75.2±7.0 to 78.5±8.0 in nursing students, and from 72.5±8.7 to 78±9.7 in pharmacy students. In the advanced program, readiness of students for IPE increased from 77.2±11.2 to 81.9±11.0 in medical students, from 77.1±8.0 to 81.7±7.3 in nursing students, and from 74.3±10.1 to 79.3±11.2 in pharmacy students.

The beginner and advanced programs started in 2011 and the intermediate program started in 2012. The medical students who joined the advanced program in 2016 completed beginner and intermediate programs, those who joined the advanced program in 2015 or 2014 completed the intermediated but not beginner program, and those who joined the advanced program in 2013 completed neither the intermediated nor beginner program.

We examined the effect of the number of the programs that students completed on readiness for IPE before the advanced program. The readiness for IPE of medical students who completed two programs was 77.2 ± 11.2 , those of medical students who completed one program was 75 ± 9.5 and 73.7 ± 11.6 , and those of medical students who did not complete was 71.4 ± 12.5 . The readiness of medical students for IPE improved after completion of the beginner and intermediate programs.

Conclusion

The readiness of students for IPE across all schools improved after participating in the workshops. Readiness of students for IPE improved significantly after completion of these three programs.

BP 53

PERCEPTION OF THE SPIRAL CURRICULUM AMONG NEWCASTLE UNIVERSITY MEDICINE MALAYSIA (NUMed) MEDICAL STUDENTS

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Background and Aims

Designing a curriculum has always been key in how an institution delivers education to its students. The implementation of a successful curriculum involves planning, delivery and students' experience. Over the years, pioneers have come up with strategies aiming to optimise the overall learning process.

The spiral curriculum was first introduced in 1960 by Jerome Bruner. Some of the key features described were:

- Topics, themes or subjects are revisited by the students throughout the course
- Difficulty of a topic, theme or subject is intensified with each revisit
- New information gathered builds on the foundation set by previous learning
- The student's competency increases progressively with each revisit

Essentially, the spiral curriculum creates a platform for one to take a deeper approach towards understanding a topic. However, planning and delivery alone do not complete the purpose of a curriculum. Students, being end-users, are important pieces in the design of a curriculum and play a major role in ensuring the success of an implemented curriculum framework through feedback on their learning experience. This study therefore aimed to assess the perception of NUMed students on the spiral curriculum based on:

- Impression
- Concerns
- Benefits
- Impact on future career

Methods

A cross-sectional approach was adopted to understand the students' views regarding the spiral curriculum. This study was conducted on the 3/3/2017 - NUMed students from stages 3, 4, and 5 were invited to complete a questionnaire containing 39 questions divided into 5 sections: demographics, initial impression, current impression, perceived benefits and influence. 'Initial' was defined as the first 3 months of the MBBS course while 'current' refers to the present point of answering the questionnaire. Data collected was kept anonymous and confidential. Data analysis via the R Environment for Statistical Computing was done.

Results

201 responses were received with >50% from each year group responding to the questionnaire. From the total responses, there were 38% (76/201) males and 62% (125/201) females. The general impression of the students on the spiral curriculum was positive (89%; 179/201). However, there were significant discrepancies noted in the level of understanding of the spiral curriculum. Based on the Mann-Whitney's test, it was seen that majority of students had a low level of understanding initially at the start of their MBBS course. Over the years, the students' understanding improved significantly with a P value of <0.001. In terms of concerns, the lack of clarity on the depth of knowledge stood out as a major concern with a probability of >0.5 as compared to the rest when plotted on a logistic model.

Conclusion

Medical curricula has evolved over time to ensure a more integrated learning experience for medical students. The increase in popularity of the spiral curriculum has contributed significantly to improve medical education. Although students have a positive impression on the spiral curriculum, their main concern remains the lack of clarity regarding the depth of knowledge required. Hence, more research should be conducted to further explore the spiral curriculum and identify ways to perfect it.

BP 54**IN-TRAINING EXAMINATIONS AND OUTCOMES OF AN ANAESTHESIA RESIDENCY PROGRAMME**

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Background and Aims

In-Training Examination (ITE) scores have been found to be predictive of certification examination performance for various medical specialties, including anaesthesiology. Residents in anaesthesia residency programmes in Singapore are required to take the American Board of Anaesthesiology/American Society of Anaesthesiologists ITE during their first 3 years in residency (junior residency). They need to pass the Master of Medicine (Anaesthesiology) Final (Final M.MED.) examination, or its equivalent, and satisfactorily complete the 3-year junior residency programme before proceeding onto a 2-year senior residency (SR). This study was conducted to identify if ITE scores could predict success in these outcomes.

Methods

A retrospective review was conducted with data obtained from the archives of the SingHealth Anaesthesiology Residency Program (SHARP). Included subjects were residents who were in the junior residency programme from 2012 to 2017. Information collected includes gender, age, nature of medical school, experience in anaesthesia prior to start of residency and ITE scores during junior residency. Outcome data collected include year of and success at attempts at the Final M.MED. examination, and successful on-time progression onto senior residency at the end of 3 years of junior residency.

Results

Ninety-six residents were included in the review. The ITE scores [mean (SD)] of residents in first year (R1), second year (R2) and third year (R3) of residency were 61.4 (8.5), 65.5 (7.5) and 69.5 (6.4) respectively. Sixty-three residents had spent 3 years in junior residency, but only 39 (61.9%) successfully progressed onto senior residency on-time. The ITE scores across all 3 years of junior residency were higher for those who were successful compared to those who were not. [R1 66.2 (5.9) vs 55.1 (6.0), R2 69.1 (6.5) vs 59.5 (5.2), R3 71.9 (6.3) vs 65.9 (5.0), $p < 0.001$ for all comparisons].

For the Final MMed examination in 2016, the successful candidates had a higher ITE scores, 71.8 (5.5), compared with those who failed 62.7 (5.5), $p = 0.015$. This association was not seen for those who took the examination in 2015 or 2017. Candidates who passed the Final MMed examination by the end of R3 had higher R1 ITE scores compare to those who did not [65.7 (5.5) vs 54.3 (5.6), $p = 0.026$]. Of the other potential factors, only prior experience in anaesthesia before starting residency was associated with a higher rate of successful pass in Final MMed by end of R3 (75.5% vs 44.4%, $p = 0.016$) and on-time progression onto senior residency (71.1% vs 44.4%, $p = 0.047$). Prior experience in anaesthesia was associated with higher ITE scores in R1 [63.0 (7.8) vs 59 (9.1) $p = 0.044$] and R2 [67.3 (7.2) vs 61.2 (6.12), $p = 0.001$], but not in R3.

Conclusion

ITE scores were not consistently associated with passing Final MMed for the same year. However, lower R1-R3 ITE scores and no prior anaesthesia experience is associated with lower rate of passing Final MMed by the end of R3 and on-time progression to senior residency. These factors could be used to identify residents at risk to start early intervention. Future studies could identify other predictors, and the extent to which ITE could predict clinical performance.

BP 55**EXPLORING THE RELATIONSHIP BETWEEN MEDICAL STUDENTS' INTERNSHIP LOCATION AND THEIR PERFORMANCE DURING RESIDENCY**

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Background and Aims

Organisational socialisation is a social process in which individuals acquire the values, abilities, expected behaviours, and social knowledge required to be productive members of an organisation. The Student Internship Program (SIP) in teaching hospitals, where final year medical students take on roles similar to house officers with appropriately reduced responsibilities, is one such opportunity for organisational socialisation to take place. In non-medical contexts, internship experience has been shown to lead to faster learning and integration into organisations upon transitioning into full time employment. We aim to study this in a medical context by looking at the effect of SIP on subsequent performance in the first year of postgraduate training (PGY1). We hypothesized a faster uptake of job competency in PGY1 residents who have attended their SIP in the same host institute compared to those who attended their SIP in other institutes.

Methods

Multisource feedback performance evaluation data (8 items in professionalism, communication skills and team work) of 73 PGY1 residents who did their first rotation at Tan Tock Seng Hospital (TTSH) in year 2014-2015 was extracted. Evaluation data of PGY1 residents who completed their SIP in TTSH (n=42) was compared to those completed in other hospitals (n=31) using Mann-Whitney U test.

Results

An average of 4 evaluators (range: 2 to 5 evaluators) provided ratings for each residents. The median differences in ratings for the 8 performance evaluation items between both groups of residents range from -0.13 to 0.05 ($p > 0.05$ for all items). Qualitative analysis of evaluators' recommendation of PGY1 residents also showed no preference to either group for two contexts: recommendation to family members ($p > 0.05$) or recommendation to their respective departments ($p > 0.05$).

Conclusion

The performance evaluation of PGY1 residents who did their first PGY1 rotation in their SIP host hospital was not significantly different from those who did not. Unlike findings in organisational socialisation research, our results suggest that residents who completed their SIP in the same hospital as their residency do not necessarily perform better than their peers who did their SIP in another hospital. However, this could be due to a few limiting factors: a small sample size, data from a single cohort of the residency programme and the use of a single evaluation instrument which has limited capacity to capture the difference. Future research, taking these factors into account, will be critical to further evaluate the relationship of socialisation and residents' performance.

BP 56**WHAT HAS THE PREDICTIVE BRAIN GOT TO DO WITH MEDICAL EDUCATION?***Lim TK*

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Background and Aims

Over the past 10 years the theory of predictive brains has emerged as a general, unified and integrated model of cognitive processing from research arising from a large number of domains which include philosophy, meta-physics, physics (thermo dynamics), associative learning theory, Bayesian-probability theory, information theory, machine learning, artificial intelligence, behavioural science, neuro-cognition, neuro-imaging, constructed emotions and psychiatry. (Ref.1-4) It may have profound and practical implications on how we live, work and learn. However, to my knowledge, there is no discussion of this new proposition in either medical education pedagogy or research. In this presentation I will describe the predictive brain model, map its key elements which impacts on pedagogy and research in medical education and offer an example of its application in clinical training.

Methods

I will perform a narrative review of the literature on the resurgent theory of the predictive brain which has developed over the past decade. This will be contrasted with the popular dual process theory of cognitive function which has been applied to the research and teaching of medial problem solving. Core elements of this model will be mapped and templated to leading pedagogic models, strategies and tactics in medical education.

Results

The predictive brain is characterised as an adaptive, generative, energy-frugal, context-sensitive action-orientation, probabilistic, predictive engine. It responds only to predictive errors and learns by iterative predictive error management, processing and hierarchical coding. This process is fine-tuned by context and affect sensitive adjustments to attention weighted according to estimates of the reliability/uncertainty (i.e. precision) of these errors. This system is governed by the need to minimise free energy (or waste). Recent studies which have applied the popular dual process model to improve diagnostic performance by "cognitive de-biasing" in clinicians have failed. Naturalistic cognitive processing of the predictive brain may account for this failure since de-biasing is not thermodynamic-ally frugal and thus, not sustainable in routine practice. I have examined the practical implications of this new model relevant to training for improvement in clinical expertise in over 2 dozen models, strategies and tactics of pedagogy and medical education. In the majority of instances, the predictive brain theory has potential impact on their content and design. It is also a basis for new research in medical education. A novel approach to improving diagnostic expertise based on predictive error management in medical students and junior residents during bedside rounds is described.

Conclusion

The theory of predictive brains has emerged as a major narrative in the understanding of how our mind works. Medical educators and researchers need to be cognisant with it and, where relevant, incorporate it in their work.

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BP 57**REINVENTING THE TRADITIONAL LECTURE THROUGH SEQUENTIAL-RELEASE CLINICAL CASES**

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Background and Aims

The traditional lecture remains one of the most economical and efficient methods of teaching large groups. It has been criticised for being a passive learning experience that fails to engage students, and for 'dumping' information rather than building clinical reasoning and application. Others disagree, highlighting that lectures can show learners how to organise their thoughts, and in the era of online technologies, can involve a lot more than didactic presentations. The crucial ingredient is how the lecture is conducted. We aim to overcome the shortcomings of the large-group lecture by building each lecture around a clinical case, which students first attempt on their mobile devices, without tutor involvement.

Methods

For each lecture topic, we distil 5-7 key teaching points, around which we build a clinical case. Each case consists of a clinical vignette, with further information (e.g. investigation results, clinical progress, complications) revealed sequentially as the case progresses. 5-7 questions are posed at relevant junctures; these challenge disease understanding, data interpretation, and clinical reasoning skills, and bring out the teaching points. Students must commit to an answer before moving on.

Five large-group sessions, each consisting of four 45-minute lectures, were conducted for final-year medical students. Each lecture opens with students individually attempting the clinical case on their mobile devices, using the Google Forms interface. Thereafter, a tutor discusses the case, revealing answers to the questions posed, explaining the clinical thought process, and providing immediate feedback on incorrect answers. The Google Forms interface allows the tutor to visualise the distribution of student answers for each question in real-time, and tailor feedback accordingly. Hence, every clinical case is used as a platform to highlight pertinent teaching points on a topic. A survey was conducted after the fourth session, through which qualitative feedback was also obtained.

Results

100-150 final-year students attended each session. 133 students responded to the survey (~80% response rate). 131 (98%) agreed or strongly agreed that the format helped them to learn effectively. 127 (95%) agreed or strongly agreed that it helped them to apply content knowledge to a real patient, and 129 (97%) agreed or strongly agreed that it helped them to learn how to think through a clinical problem.

Themes in qualitative feedback included: Respondents found the cases realistic, with real-life ambiguity and management dilemmas, and felt encouraged to engage in problem-based thinking and prioritise differentials in a clinical context. Respondents appreciated receiving immediate feedback and identifying personal gaps, instead of being spoon-fed content. Areas for improvement included: better calibration of difficulty level, better pacing of lectures, and providing suggestions on further reading.

Conclusion

The lecture remains relevant as an economical and efficient mode of large-group teaching. We demonstrate how a simple application of technology, coupled with carefully-designed clinical cases, engages students in active learning, encourages the application of knowledge into clinical reasoning, and allows the provision of immediate feedback. Further work is ongoing to evaluate the effectiveness of the reinvented lecture design in improving clinical reasoning outcomes.

BP 58**SIMULATION-BASED TEACHING OF ADULT ONCOLOGIC EMERGENCIES FOR MEDICAL UNDERGRADUATES AND JUNIOR RESIDENTS IN A TERTIARY CANCER CENTRE IN SINGAPORE**

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Background and Aims

Simulation-based education in medical education represents a novel teaching method. Some studies have shown encouraging results but its effectiveness in teaching adult oncologic emergencies is unclear. We aim to explore role-playing as a simulation-based method to teach adult oncologic emergencies for medical undergraduates and junior residents in our tertiary cancer centre.

Methods

Simulation using role-play was employed to test its effectiveness in teaching a cohort comprising of third-year medical undergraduates at the Yong Loo Lin School of Medicine and second-year internal medicine residents at the National University Health System compared to conventional didactic lectures. 23 participants were taught via conventional didactic lectures (1 hour) followed by two role-play scenarios for oncologic emergencies simulating real-life cases (1 hour) on the same day.

Questionnaires utilising a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) were administered before and after role-play teaching. The questionnaire assessed various aspects of the learning experience and compared it with the traditional didactic model. The differences in pre- and post-training scores were calculated and compared using the paired Student's t-test, at 95% level of significance.

Results

Simulation-based role-play was found to be better than conventional didactic lectures in teaching adult oncologic emergencies, as shown in 13/16 pre-post questions ($p < 0.0001$). Participants felt that the facilitators were able to summarise the important oncologic emergency issues during role play ($p = 0.022$) and provided constructive feedback that helped to develop their clinical reasoning skills ($p = 0.046$). Importantly, participants would recommend using simulation-based methods, specifically role-play in teaching of other medical topics ($p = 0.001$). They would recommend role-play earlier in their training if given the option ($p = 0.001$).

Conclusion

Simulation-based teaching of adult oncologic emergencies has been shown to be preferred over traditional didactic lectures in this small pilot study comprising of medical undergraduates and internal medicine residents. Role-play is a promising tool that can be implemented systemically in medical school and residency training, particularly for key concepts in highly specialised disciplines like Oncology. We intend to study this further in an expanded longitudinal cohort.

BP 59

KNOW BEFORE YOU GO: STUDENTS' PERCEPTIONS OF EARLY CLINICAL EXPERIENCES BY SELF-DETERMINED LEARNING

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Background and Aims

In the medical educational literature, it has been proved that early clinical experiences can benefit medical students from strengthening their ability of communication, people skills, a sense of identity and alleviating the learning pressure of students from clerkships. In Taiwan, it is growing popular to integrate early clinical experiences into formal medical education as elective subjects or hidden curriculums.

According to the "Self-Determination Theory (SDT)", there are three fundamental needs which drive individuals to behave in effective and positive ways if satisfied, including autonomy, competence and relatedness. Individuals are considered in autonomy when they take actions from their intrinsic motivations. Besides, they will feel competent if they have good interactions with the surroundings. The third one, relatedness, involves feeling meaningfully connected to others. Conditions fulfilling the three basic needs can foster volitional and high quality forms of motivation and engagement for activities, such as better performance, persistence, and creativity.

Methods

In 2016, several fourth-grade students at the TCU School of Medicine proposed and initiated a six-week Early Clinical Experience (ECE) project due to their interest and curiosity about the clinical environment. That provided an understanding of the role of the physician in the clinical setting and in the community through longitudinal clinical and small group learning experiences. During the project, students focused on patient interviewing, clinical reasoning, and observing the doctor-patient relationships. The qualitative method was applied in this research. Data was collected through in-depth interviews, focus group discussions, and student reports of the courses in the project.

Results

Students showed a keen awareness of the determinants of the professional healthcare and emphasized the self-identity of being what kind of a doctor in the future. They also developed preliminary connections with doctors and patients. Moreover, they reported improvement in the ability of observation and self-reflection, empathy, interpersonal communication skills and oral presentation.

Conclusion

From the students' perspective, early clinical experiences based on SDT can help self-understanding and self-identity, and facilitate the motivations to learn more and better from the current medical curriculums. Also, it suggests the students' learning process and outcomes can be predicted and optimised if we satisfy the three basic needs, including autonomy, competence and relatedness. Applying to medical education, SDT can bring students effective and inspiring learning results in combination with meaningful clinical experiences.

BP 60**DISCUSSION BOARDS AS FACILITATORS OF GLOBAL COMMUNITIES OF PRACTICE TO SUPPORT DEVELOPMENT OF CLINICAL TEACHING*****Cable S, Jones L, Howden S****Centre for Medical Education, School of Medicine, University of Dundee, United Kingdom***Background and Aims**

The Centre for Medical Education has offered a distance learning Masters in Medical Education (MMedEd) for over 30 years. The current online programme is delivered through a Moodle platform and utilises asynchronous discussion boards to promote facilitated interaction between peers situated around the world. Discussion Boards offer opportunities for deeper and more focused learning and allow time and opportunity to read, reflect and respond (Bliuc et al 2011). For non-native English speaking audiences more time is available to process postings, however culture and colloquialism may be an issue and there may be a tendency to avoid socializing in the course, leaving them at the periphery of course activities (Zhang and Kenny 2010).

Through 2016/2017 90 students from 38 countries have undertaken an online module in clinical teaching including content on clinical supervision, workplace learning theory, clinical learning approaches and a formative, peer-reviewed reflective log.

The aim of this evaluation study is to explore engagement with the discussion boards, investigate issues of process and identify commonalities and differences of perspective. The objective is to offer insights into the benefits and challenges of using discussion boards to create facilitated global communities of practice which support ongoing development of clinical teaching.

Methods

The study reviewed statistical data on engagement and activity and undertook 'conventional content analysis' (Hsieh & Shannon 2005) of discussion board postings for two cohorts of students (n=90 (41/49)). No formal ethical approval was sought for evaluation study however quotes are aggregated to assure anonymity through regional groupings of students. Permission for use of their postings was secured from individuals where used.

Results

From 90 students 147 responses were posted* related to the three topics areas analysed. Tutors contributed only 7 postings primarily on issues of process. The peer reviewed reflective logs secured 62 (54/8*) postings however feedback from peers was limited.

There were numerous examples of statement of positions or perspectives but limited examples of critique and challenge within the discussion. Only about 50% of students posted, largely offering single postings except in the formative assignment activity. It is not possible to identify any benefits that 'lurkers' (Kee Man 2014) may have gained from the discussion boards.

Preliminary analysis of content highlights styles of offering perspective e.g., bulleted list over discursive reflections, contextual refinements within specialisms, knowledge translation in action and varying models of medical education and social norms.

*Data still under collection

Conclusion

Students on the MMedED were proactive in engaging in discourse on a range of aspects of clinical education. This was learner-driven often with limited need for tutor engagement. However as not all students posted we are developing strategies to motivate fuller discourse and invite possible lurkers to actively engage.

Consideration needs to be given to the trigger question/statements to maximise discussion of an exploratory form over simple position statements.

Data submitted provided valuable insights and perspectives on learning clinical theory and practice and global contributions challenged nationally, professionally prescribed perspectives enriching critique of medical education.

Further work is required to maximise contributions discussion boards can make to developing dynamic communities of practice.

FREE COMMUNICATIONS 1 – GENERAL EDUCATION 1

Facilitating Physicians' Reflection on Their Professional Performance: Exploring the Developmental Appreciative Navigation Approach

Kiki Lombarts, The Netherlands

The Doctor is in the House: Improving Wellness for Internal Medicine Residents

Shi Min Jasmine Lee, Singapore

Learning Prioritisation: A Study to Understand the Relationship Between Learning Approaches and Motivation Using Assist and Achievement Goal Questionnaire Among Rakmhstu Students

Joan Bryant Kumar, United Arab Emirates

Professional Identity Formation of Female Doctors in Japan – Gender Stereotype and Gap Between the Married and Unmarried

Tomoko Matsui, Japan

Burnout in Internal Medicine Residents: A Study on Prevalence and Factors in a Three-Year Junior Residency Program

Sabrina Lau, Singapore

Influences of Healthcare Career Choice and Perceptions of Nursing Among Healthcare Students in a Singapore University: A Cross-Sectional Study

Ling Ting Wu, Singapore

FACILITATING PHYSICIANS' REFLECTION ON THEIR PROFESSIONAL PERFORMANCE: EXPLORING THE DEVELOPMENTAL APPRECIATIVE NAVIGATION APPROACH

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Background and Aims

Continuous Professional Development and/or Maintenance of Certification programs most all require physicians to periodically reflect on their professional performance. In many nations, i.e. the USA, Canada, the UK and the Netherlands, this reflection should at least be based on 360 degree feedback. Accepting and using this feedback is not self-evident; feedback can even evoke emotional reactions if it disconfirms the recipient's self-perceptions. Since facilitation of the reflection conversation is assumed to have a positive effect on the feedback acceptance and uptake, new Dutch legislation requires all physicians to discuss their performance information with a non-hierarchical facilitator. The Amsterdam Academic Medical center (AMC) proposed a new positive approach for guiding the mandatory feedback and reflection conversations. Prior to hospital-wide implementation this approach was pilot-tested amongst neurology faculty. We evaluated how neurologists experienced the facilitated reflection conversations in the light of their professional development?

Methods

In total 17 neurologists participated in a facilitated reflection conversation. For (almost) each neurologist 2 performance information reports were available: (i) a 360 degrees feedback report on their clinical performance and (ii) a residents' informed feedback report on their teaching performance. An experienced facilitator and psychologist (AN) guided all 17 two-hour conversations which took place during work hours. The facilitator applied the Developmental Appreciative Navigation Approach, or DANA. Central to this approach is the focus on a physician's strengths, in (i) recognizing and acknowledging his/her qualities, (ii) and exploring where these qualities could additionally be applied in practice. Based on the reflection conversation the facilitator drafted a Personal Development Plan (PDP) which, once approved by the neurologist, was sent to the head of department (HoD). To evaluate the facilitated conversation, we used semi-structured interviews. 17 neurologists were interviewed by one researcher (KL).

Results

All neurologists rated the facilitated reflection conversation as highly motivating, appreciative, development-oriented, concrete and valuable. They characterized the conversation as open and safe; the facilitator was rated by all with a minimum of 8 (out of 10). For most, the conversation did not reveal new insights about their professional performance; rather it confirmed existing ideas, or was instrumental in rendering, accepting or internalizing feedback received. The conversation did deepen faculty's insights in their developmental opportunities. For all neurologists a

PDP was formulated; all reported to feel highly committed to these plans and they were reasonably to very positive about making them happen within one year. Criticism was expressed in terms of the disclosure of the PDP to the HoD, as this could hamper the openness during reflection conversations. Faculty agreed with planning reflection conversations once every 2 years, allowing for follow up sessions if needed.

Conclusion

Hospital-based physicians well received the facilitated reflection conversations based on the DANA approach, report better insight in how to enhance their professional performance and feel committed to achieving their developmental goals. Success of hospital-wide implementation of facilitated reflection is dependent on (i) the expertise, credibility and independence of the facilitator and (ii) the policies regarding disclosure of the PDP.

THE DOCTOR IS IN THE HOUSE: IMPROVING WELLNESS FOR INTERNAL MEDICINE RESIDENTS

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Background and Aims

Burnout is an issue of pressing importance in healthcare, with recent studies reporting a steady increase in healthcare professionals over the years, of which higher percentages reported amongst residents. Since its inception in 2010, the number of residents applying for leave of absence or no pay leave in NHG Internal Medicine (IM) Residency Program had increased from 1 in AY2012 to 14 in AY2015, with many residents citing burnout as a reason. Preliminary results from a study in progress using the Maslach Burnout Inventory show that a significant percentage of residents are at risk of burnout. Some of the possible issues brought up in focus group discussions include being in a large program with limited one-to-one interaction with faculty, loss of a sense of cohesion and engagement, difficulty and lack of skills in identifying burnout, and residents' reluctance to seek help early.

As burnout has pervasive negative impact on residents' wellness, patient care and training, the program aims to inculcate greater cohesion and sense of identity amongst our residents, and hopes to improve early identification of burnout and help seeking behaviour.

Methods

Several interventions were introduced to achieve the objectives:

1. Imparting knowledge. Fatigue management and burnout is a compulsory part of induction. The topics were also brought up regularly during Program Director rounds and resources on recognising burnout and building resilience were circulated.
2. Building cohesion. The program also introduced a "house system" consisting of faculty as house masters and resident leaders to help promote residents' well-being, which serves as an avenue for seeking advice and develop support structures for residents throughout their training. Each house meets regularly to share and discuss issues they face at work or in training. There were also inter-house competitions during teaching sessions, which help to build cohesion among the residents.
3. Faculty and peer leaders were encouraged to attend Mental Health First Aid workshop to equip themselves with skills to recognise residents at-risk, provide initial help for these residents, and guide them towards appropriate professional help. In addition, the program had also appointed a psychiatrist as adjunct faculty who serves as a point of contact for residents who need counselling in a confidential manner outside of the hospital's clinical services.
4. The program recognised that transition could be stressful and introduced buddy system pairing more senior residents to new residents to help them adjust to their new roles. They had WhatsApp group chats and coffee sessions to provide guidance and support.

Results

We hope that with the implementation of these initiatives in the residency program, residents feel more supported, as there were multiple leaders and mentors that the residents can approach to discuss issues and challenges they faced. Potential problem residents can be flagged out earlier so that intervention could be carried out early.

Conclusion

Promoting cohesion, avenues for guidance including peer support and starting conversations about burnout are useful ways to contribute to residents' wellbeing.

LEARNING PRIORITISATION: A STUDY TO UNDERSTAND THE RELATIONSHIP BETWEEN LEARNING APPROACHES AND MOTIVATION USING ASSIST AND ACHIEVEMENT GOAL QUESTIONNAIRE, AMONG RAKMHSU STUDENTS

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Background and Aims

Medicine is one of the esteemed professions and admission criteria used in medical schools are generally based on their academic competency, motivation to become lifelong learners, personality and communication skills. Approaches to learning may be defined as the behavioural and intellectual responses to a learning situation. The three approaches - deep, strategic and surface apathetic - reflect different levels of learning process. A 2x2 framework for conceptualising students' achievement goal orientations includes mastery, performance and goal orientations. Many studies show that students who adopt mastery or performance goals view ability and define success v/s failure differently. Based on these facts this study will be conducted to know the learning approaches and motivation factors in the health sciences university students.

Objectives:

1. To analyse and to compare the learning approaches in medical and pharmacy students.
2. To measure the achievement goals of students and to compare them to their performance.

Methods

The study is a prospective cross sectional study, conducted on students at Ras Al Khaimah Medical and Health Sciences University. A pre designed pre validated questionnaire with the proper approval and due acknowledgement of the owner of the questionnaire was used. The responses were be graded on a 5 point Likert scale ranging from 5=strongly agree to 1=strongly disagree. The study group was divided into two groups- Medical and pharmacy students. With the approval from the institutional research ethics committee, the questionnaires (Questionnaire for approaches and study skills inventory for students and Achievement goal Questionnaire-Revised) were administered to the students and the data was collected on the same day. The total sample size is 300 students in both the groups taking into consideration the confidence level of 95% and confidence interval of 5% and sample population 1000 students. Convenient random sampling will be used in this study.

Results

Data was entered into SPSS 24 software and was analysed by descriptive statistics. Independent sample t test and Analysis of variance (ANOVA) was used for the comparison of scores of achievement goal questionnaire.

The effect of each approach was done by t-test and Spearman correlation was used to correlate scores between age and type of approach. Mann-Whitney U test was done to analyse gender variation in different approaches among various year students

The study results showed significance among master approach, avoidance and performance approach, avoidance in medical and pharmacy students. There was statistical significant difference $p < 0.001$ in surface apathetic approach between Medical and pharmacy students. There was no significant difference in the deep and strategic approach among two groups.

Conclusion

The results of the study indicate that two groups have different approach to study in surface apathetic approach. One the study showed differences in achievement goal using different approaches in medical and pharmacy student, but our study did not show the same result. The limitation of the study was it includes predominantly female's students and small size of the sample. The study will be conducted on further study population to draw the conclusion

PROFESSIONAL IDENTITY FORMATION OF FEMALE DOCTORS IN JAPAN-GENDER STEREOTYPE AND GAP BETWEEN THE MARRIED AND UNMARRIED

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Background and Aims

Professional identify formation (PIF) is a subject which has been drawing attention in medical education. PIF is harmonised with the personal identity development process. Existing personal identities such as genes, gender, race and culture are important factors of personal identity development process. We focused on how "gender" influences professional and personal identity formation in female doctors, set against the background of the social structure of "Japan". Recently in Japan, the number of female physicians has been consisting of approximately 20% of all the doctors. However, many tended to leave medicine or gave up full-time work. We hypothesised professional and personal identity formation of female doctors was influenced by gender stereotypes emanating from social structure in Japan. Our research question was how the professional and personal identities of female doctors in Japan were formed, especially before and after the time of marriage

Methods

Ethical approval was granted by the Institutional Review Board at Nagoya University Hospital. We adopted narrative inquiry as the research methodology. We recruited 10 unmarried and 15 married female doctors using both a purposive sampling and convenience sampling method and conducted semi-structured individual interviews. All discussions were audio-recorded and transcribed verbatim. The first author (TM) read through the data and extracted codes related to the formation of professional and personal identities. The emerged core concepts were noted, and based on them, representative story were made from each interview. Second, together with TM, the second (MS), third (YK), and fourth (HN) authors examined the concepts and representative stories. Third, once the conceptualisation and choice of representative data were complete, TM re-analysed them with clearer focus on PIF and then created a tentative conceptual map that charted the relationships among the concepts and representative data. Fourth, these analyses were then re-examined by MS, YK, and HN, with carefully checking whether they were consistent with the original data. Finally we developed the master narrative based on the concepts and the representative data for the whole study.

Results

We revealed that the PIF process by which female physicians integrated personal and professional identities was profoundly affected by gender stereotypes. We also demonstrated that unmarried female physicians had contempt toward married female physicians who had established personal identity that conformed to gender stereotypes; "The only thing that I had not obtained (in my life) was marriage". Equally important, female physicians who established personal identities that conformed to gender stereotypes by marriage had feelings of contempt toward unmarried female physicians themselves before they got married; "...I'm sure you (un-married female physicians) don't understand what it's like...". In other words, we discovered that there was a deep-rooted gap between unmarried and married female physicians.

Conclusion

A gap based on marital status was created by a clash of the two values, the values that prioritise the establishment of professional identity and the values that idealise establishing a personal identity conforming to gender stereotypes. These two values exist in a binomial opposition, which might show a social structure rejecting diversity.

BURNOUT IN INTERNAL MEDICINE RESIDENTS: A STUDY ON PREVALENCE AND FACTORS IN A THREE-YEAR JUNIOR RESIDENCY PROGRAM

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Background and Aims

Physician burnout is on the rise. In a study involving 6,880 physicians in the U.S., 54.4% reported at least one symptom of burnout in 2014, compared with 45.5% in 2011 (Shanafelt, 2015). Higher rates of burnout have been reported in residents, fellows and early-career physicians (Dyrbye, 2014), and have been linked with negative personal and psychological outcomes including poor work performance, medical errors and depression. Since the inception of the National Healthcare Group (NHG) Internal Medicine (IM) Residency in 2010, faculty have been concerned about an apparent rising trend of residents demonstrating signs of burnout and requesting time off work. This study aims to find out the prevalence and extent of burnout in IM residents, and identify factors associated with clinically-significant burnout.

Methods

We surveyed 140 in-flight residents from the NHG IM residency program. We analysed demographic variables, and assessed the contribution of exams and scholarly activities, work and duty hours, and availability of support systems. Burnout was measured by the Maslach Burnout Inventory (MBI), and further categorised into three subscales - Emotional Exhaustion (EE), Depersonalisation (DP) and Personal Accomplishment (PA). We defined clinically-significant burnout as a 'high' score in either the EE or DP subscales (Shanafelt, 2002). Factors associated with burnout were identified by univariate regression analysis. Of note, data collection is still ongoing and the second phase of this study would involve qualitative analysis on burnout via focus group discussions.

Results

We received 70 completed questionnaires (response rate 50%). Individual burnout subscale scores were as follows - high EE (50.0%), high DP (50.0%), low PA (58.6%). 64.3% of respondents were found to have clinically-significant burnout, while 21.4% reported high burnout across all three subscales (i.e. high EE + high DP + low PA). Interestingly, 24.3% of respondents reported low PA despite having low to moderate EE and DP scores, suggesting that PA may not be influenced solely from the core burnout domains. Demographic factors associated with high burnout include male (57.1%), second year residents (50.0%), who were 26-30 years old (78.6%), and had an average of 2-3 years of clinical practice (64.3%). The high burnout group reported being stressed with exams in general (92.9%) and also felt pressured to complete mandatory exams during their residency tenure (92.9%). On top of clinical duties, 35.7% and 71.4% were actively involved in research and mentorship/teaching respectively. All the residents in the high burnout group felt that there were not getting enough breaks from work (100%, p=0.05) and reported difficulty in getting their leave approved (78.6%). Despite having formal support structures in place, only 3.1% of respondents reported utilising them.

Conclusion

The prevalence and extent of burnout in NHG IM residents is high, with a large percentage of this being contributed to by exams, clinical duties, and a perceived lack of adequate breaks from work. There is also a need to generate greater awareness on the availability of support systems. Future studies should look into interventions to reduce burnout on both the personal and institutional levels, and employ methods to monitor burnout trends through residency.

INFLUENCES OF HEALTHCARE CAREER CHOICE AND PERCEPTIONS OF NURSING AMONG HEALTHCARE STUDENTS IN A SINGAPORE UNIVERSITY: A CROSS-SECTIONAL STUDY

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Background and Aims

Background: An aging population coupled with increasing number of people living with chronic illnesses worldwide has led to greater demands for health care services. Globally, healthcare workforce shortage has been the top concern for political leaders. Among the health care groups, nursing was found to face the greatest challenge in recruiting school leavers into the profession. Despite healthcare students having similar career motivators, many did not consider nursing as a career choice. Therefore, there is a need to find out why students who are interested in healthcare did not eventually join the nursing career.

Study Aims: This study aims to explore factors influencing career choice and perception of nursing as a career choice among students undertaking healthcare related courses.

Methods

Using a reliable and valid instrument, a cross-sectional comparative study was conducted. The instrument includes two scales, the Healthcare Career Choice (HCC) scale, and Nursing as a Career Choice (NCC) scale. HCC-NCC instrument was developed with 35 parallel items to compare career choice factors and perception of nursing as a career choice. The questionnaire was administered online to all first-year students undertaking medicine, nursing, pharmacy, dentistry, and social science courses at the National University of Singapore. A total of 707 students responded to the questionnaire, yielding a response rate of 82.1%.

Results

The career factor 'personal interest' was found to be the most important factor influencing career choice among all the healthcare groups. However, there were significant differences ($p < 0.05$) in how other career factors have influenced their career choice. Medicine students tend to value altruistic factors more while dentistry and pharmacy students were more likely to be influenced by extrinsic factors. In contrast, nursing and social science students tend to have poorer self-efficacy in comparison to other healthcare courses. Perception of nursing among the health care groups were also found to be significantly different ($p < 0.05$). The medicine students were found to have better perception of nursing as a career in comparison to other healthcare groups. As a whole, non-nursing health care students were found to be less interested in nursing, and do not have much prior knowledge of the nursing career. They also perceived nurses to have lesser autonomy, no diagnostic ability at work and involves attending to others' hygiene needs. The nursing career was also seen to receive lower income, face stronger gender stigma, and are less supported by parents.

Conclusion

This study identifies the healthcare career choice influences of students from different health care groups and compares their perception of nursing as a career choice. With these reasons identified, it is recommended that health care education institutions and policy makers work collaboratively to address these factors. Strategies include creating more nursing exposures in early school years, increasing nurses' salary to be comparable or higher than other health care professions, promoting career advancement of nurses, promoting male enrolment in nursing, and enhancing parental support. With these strategies, it is hopeful that the nursing career can be made more attractive to school leavers.

FREE COMMUNICATIONS 2 – TEACHING AND LEARNING

How Do They Learn and Want To Learn? A Cross-Sectional Study of Learning Preferences to Define Medical Education Priorities in Lao PDR

Amy Gray, Australia

Integrating Clinical Reasoning into Pre-Clinical Teaching for Future-Ready Medical Students

Suzanne Goh, Singapore

Students' Experiences of Digital Rectal Examination (DRE): How Can They be Better Prepared for Practice?

Lucy Victoria Rosby, Singapore

'Hot Seat' and 'Observer' Perspectives on Important Aspects of Feedback in Clinical Communications Practicum

Jianping Chen, Singapore

Peer, Near-Peer and Group Mentoring in General Medicine

Benjamin Jia Xing Tan, Singapore

Do Team Size and Team Cohesiveness Matter in Interprofessional Team-Based Learning? A Peer Assessment Study Involving Health and Social Care Students in Hong Kong

Lap Ki Chan, Hong Kong S.A.R.

HOW DO THEY LEARN AND WANT TO LEARN? A CROSS-SECTIONAL STUDY OF LEARNING PREFERENCES TO DEFINE MEDICAL EDUCATION PRIORITIES IN LAO PDR

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Background and Aims

Low and middle income countries face great barriers to accessing and developing quality, up-to-date resources for teaching and learning. This is even more so in countries which lack language skills in English. In Lao PDR there are few written resources available in the local language, materials are often out-dated and translation of materials is complex and expensive. Students accessing online material often lack English proficiency to either identify or understand relevant material. Our study aimed to understand what students are currently using for learning, what they want and where efforts to create educational materials should be focused.

Methods

We conducted a cross-sectional study of 505 students and staff at The University of Health Sciences Lao PDR, including 183 medical, 105 nursing, 72 dentistry, 64 pharmacy and 53 post-graduate students, and 19 staff. All participants completed a semi-structured questionnaire regarding their current access to and use of educational resources including written and online resources, access to the internet and language preference for learning. One focus group was conducted in each student cohort to gain an in-depth understanding of learning needs and barriers to learning.

Results

The most common resources used for learning on a daily basis by participants were internet searching (33.5%), textbooks (29%) and social media (29%). There is wide variation in patterns of internet use from daily (59%) to monthly or less (21%). The vast majority access internet primarily through their phone (96%) with limited access to internet at the University (10%) or hospital (11%). Internet speed (65%), cost (63%) and language (41%) are the most common difficulties in accessing the internet. Lao language remains the most preferred language for teaching and learning materials (38%) followed by materials presented in different combinations of Lao, English and Thai (40%) enabling students to compare the meaning of content between languages. Focus group data supported these quantitative findings and emphasized the need for up-to-date, Lao language material available online both in written and audio-visual formats which students could access before and after learning encounters.

Conclusion

Our study demonstrates high daily internet use for learning in a population which lacks the language ability to navigate online resources in English other languages - but also disparity in access which may be adding to inequity for the most disadvantaged students. Social media use of learning is also prevalent but the content and quality of this learning is poorly understood. There is an immediate need for Lao language, online written and video-based learning resources to support self-directed learning of health professional students in Lao PDR. Priority needs to be given to developing online material, in appropriate packages supported by practical video-based content, which ensures creation of content does not burden the limited human resource capacity available.

INTEGRATING CLINICAL REASONING INTO PRE-CLINICAL TEACHING FOR FUTURE-READY MEDICAL STUDENTS

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Background and Aims

Effective clinical reasoning is necessary for optimal application of knowledge in everyday clinical practice, and is what sets the expert clinician apart from the novice. Conventionally, clinical reasoning has been taught to more experienced medical students and residents, with the assumption that a certain amount of clinical exposure is pre-requisite. The gap between pre-clinical and clinical learning is very wide, and more effective strategies to equip the student transitioning to clinical clerkships would be greatly beneficial. Clinical reasoning for pre-clinical students however, requires a different approach from teaching clinical students and has not been well-described so far.

We describe an innovative, integrated method involving concept mapping with clinical scenarios followed by a faculty-facilitated discussion, within the setting of learning pathophysiology of disease, all aimed specifically at the pre-clinical student, to help prepare them for more effective clinical learning.

Methods

The students were given basic information on a patient and the presenting symptom one week prior to an assessed application exercise. They were asked to create a concept map of possible aetiologies and relevant pathophysiological factors addressing the given patient information. During the application exercise, they were given the clinical scenario and asked for their top 3 differential diagnoses, relevant history questions and physical signs that would support each differential individually; followed by a faculty-facilitated discussion. Their individual scores for these clinical reasoning exercises were analysed over the Body & Disease module for improvement in accuracy of differentials, as well as for impact on continual assessment scores in their first clinical clerkship.

Results

All pre-clinical students (n=65) from academic year 15-16 participated and we correlated their individual performance during application exercises with their first clinical posting continuous assessment (CA) performance ($R^2 = 0.315$ at $p < .05$). Their CA performance score was significantly higher compared with the previous 5 years. Results from academic year 16-17 are currently still pending.

Conclusion

Our approach aimed at pre-clinical students employs concept mapping as a strategy to link basic science to clinical practice in an organised and practical manner, enabling students to reason clinically despite the lack of real experience. This method, together with clinical scenarios and faculty-facilitated discussion enabled them to learn to formulate differential diagnoses, support these with focused history-taking and physical signs, and practice presenting their cases in a clinically relevant manner. This integrated approach helped the students bridge the chasm between pre-clinical and clinical learning, and resulted in a positive trend in their performance in their first clinical clerkships. Further development of this approach, including providing a portal for feedback on the individual concept maps would likely improve efficacy.

STUDENTS' EXPERIENCES OF DIGITAL RECTAL EXAMINATION (DRE): HOW CAN THEY BE BETTER PREPARED FOR PRACTICE?

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Background and Aims

DRE is a key diagnostic tool used in the detection of anorectal and prostate abnormalities in a variety of specialties. However, it is challenging to learn, teach and assess as it is not possible to see what the student's examining finger is doing - it is an "unsighted examination". Furthermore, the examination can cause distress to patients because of its intimate nature, making it even more difficult for students to develop the necessary confidence and skill in the clinical setting. Initial training is commonly carried out at medical school on bench-top models which attempt to simulate the examination. However, current models are limited by a lack of realistic 'look and feel' and the inability to visualise the examining finger. Could a more technologically advanced simulator better prepare students for the practice of DRE? This study aimed to understand students' experiences when learning to perform DRE to inform the development of a new DRE simulator.

Methods

The study took place from August 2016-May 2017. It involved third-year students at LKC Medicine who were undertaking their first year of clinical rotations and being taught DRE for the first time. Two questionnaires (involving both quantitative and qualitative components) were administered to the students, the first at the beginning of their surgical rotation prior to learning DRE. This aimed to appreciate their previous experience of DRE and their confidence and anxieties relating to the examination. The second was completed at the end of their surgical rotation aiming to understand the opportunities available to practice DRE during the rotation, how well prepared they had felt as well as ways in which teaching could have been improved.

Results

54/78 (69%) third-year students participated in the study. The majority of students had no previous experience in performing DRE prior to their surgical rotation teaching session, and expressed anxiety relating to learning this skill. Reasons for this included fear of harming the patient and feeling incompetent. Following their surgical rotation, most students had been able to practice DRE on real patients. Students reported levels of anxiety and under-confidence when performing DRE for the first time on patients for several reasons. These included lack of practice, uncertainty about anatomy (as the examination is 'unsighted'), difficulty interpreting examination findings and fear of causing the patient discomfort. Students' felt that increased opportunities to practice on real patients would help, but that a 'see-through' DRE simulator would be ideal to help them understand the examination better.

Conclusion

Overall, students were able to increase their experience in performing DRE on real patients during the course of their surgical rotation. However, despite initial training on bench-top models, they still felt anxious, unconfident and unskilled when undertaking the examination on real patients. This study supports the need for new approaches to learning, teaching and assessing DRE. It has also provided significant insights to inform the development of a new benchtop simulator which could better prepare students for the practice of DRE.

'HOT SEAT' AND 'OBSERVER' PERSPECTIVES ON IMPORTANT ASPECTS OF FEEDBACK IN CLINICAL COMMUNICATIONS PRACTICUM

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Background and Aims

Medical students at the Lee Kong Chian School of Medicine go through clinical communications practicum annually. These are designed to allow them practice of clinical communications with simulated patients (SP) and caregivers, and other healthcare professionals in a variety of scenarios that are based on real-life clinical situations. For each practicum, teams of 6-7 students do 6 stations. In each station, one student is in the 'hot seat', performing the assigned communications task with the SP; the other students act as 'observers' of the communications process. After each station, feedback is provided to the 'hot seat' student with inputs from the SP and 'observers'; this is facilitated by a clinical instructor.

The perception of the feedback discussion at the end of each station may be different for students who play 'hot seat' and 'observer' roles. We aim to explore if the perceptions and usefulness of the feedback discussion differ between when students play 'hot seat' versus 'observer' roles, through a qualitative inquiry of open ended elaborations collected from students at the end of the practicum.

Methods

At the end of a clinical communication practicum, 39 third-year medical students completed a survey on their perceptions of the feedback discussion, both from a 'hot seat' and 'observer' perspective, with ratings and elaboration with open-ended comments.

The ratings were analysed with descriptive statistics while the open-ended responses were analysed qualitatively by structural coding based on a codebook jointly developed by the research team. Initial coding was done independently by three team members and differences in interpretation were resolved through clarification and discussion.

Results

Students in both 'hot seat' and 'observer' valued feedback discussions that provided feedback that focused on solutions and suggested constructive ways to improve ('Constructive': 49% vs 21%), alluded to actual clinical practice ('Practical': 43% vs 51%), and also gave insights into strengths and weaknesses that students were previously unaware of ('Insightful': 34% vs 15%). Students also preferred feedback given by clinical instructors (who were doctors) over simulated patients and peers ('hot seat': 26% vs 11% and 8%; 'observer': 21% vs 5% and 0%).

Students in the 'hot seat' also paid attention to aspects related to opportunities for first-hand experience, presence of a safe environment for speaking, and timely feedback. The 'observers' noticed aspects related to features of the scenarios (variety and difficulty), opportunities to see either positive or negative demonstrations and thought-provoking questions posed by the clinical instructors.

Conclusion

In general, we noticed a trend in third-year medical students towards preferring the feedback from a doctor over feedback from a SP or their peers. This raises the potential need to increase the focus and importance of these two groups in the eyes of medical students.

PEER, NEAR-PEER AND GROUP MENTORING IN GENERAL MEDICINE

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Background and Aims

Growing evidence on benefits of mentoring to the professional and personal lives of mentees and mentors and patient care has renewed interest in establishing mentoring programs within formal medical curricula. Much of this interest has focused upon 'novice mentoring' or mentoring involving a senior clinician and a junior physician or medical student. However, recognition of the need for holistic mentoring support and difficulty in initiating mentoring relationships have shifted attention towards group, peer and near-peer mentoring. In the presence of a number of accounts as to the benefits of these forms of mentoring and acknowledging shortages of mentors in some settings, this review seeks to better understand the available data on group, peer and near-peer mentoring with a view of designing a mentoring program that would employ these approaches potentially in tandem with novice mentoring. Hence the topics of a literature review on Peer, Near-Peer and Group mentoring in General Medicine.

Methods

A literature search of Embase, PsycINFO, ERIC, PubMed, Medline and Scopus databases using Peer, Near-peer, Group, AND Mentoring, Mentorship, Mentor or Mentees, AND General or Internal medicine as search terms. We included mentoring in Clinical or Academia or Research, Internal Medicine or General Medicine, Peer mentoring or Near-peer mentoring or Group mentoring, between 1st January 2000 and 31st December 2015. Exclusion criteria were undergraduate medicine, Paediatrics, Surgery, Obstetrics and Gynaecology, Dentistry, Veterinary, Nursing and other Allied Health, Interdisciplinary mentoring, Advisorship, Supervision or Preceptorship. Information from the articles chosen by the selection criteria were filled into data collection forms and thematic analysis was carried out.

Results

1456 citations were reviewed, 133 abstracts were studied and 8 full text articles were retrieved and thematically analysed. 5 programs were described, 3 detailed peer mentoring to improve research skills amongst consultants, 1 a near-peer mentoring aimed at helping residents complete the residency training in 'core' medical training in the United Kingdom and 1 a group mentoring in Gastroenterology. Participation was voluntary in all programs. The peer and near peer mentoring programs all had a structured framework of learning with preliminary orientation, ground rules and goal setting, with signed written agreements. There was less structure in the group mentoring program. Senior faculty support was available for the peer and the group mentoring program. Challenges identified in peer mentoring programs include: lack of accountability, time and conflicting interests amongst participants. In near-peer mentoring, challenges identified are the lack of understanding of the role of a near-peer mentor, with a perception of inability to value add due to inexperience to guide juniors. Similar issues of time constraint were also identified.

Conclusion

Peer, near-peer and group mentoring should be seen as a supplementary mentoring approach. It has to be properly designed with processes to ensure the adequate supervision of participants, to ensure the support provided is effective and useful. Such mentoring also complements novice mentoring and a blended approach can be adopted to ensure timely appropriate and personalised support. Such combinations of mentoring should be studied further to develop effective mentoring guidelines.

DO TEAM SIZE AND TEAM COHESIVENESS MATTER IN INTERPROFESSIONAL TEAM-BASED LEARNING? A PEER ASSESSMENT STUDY INVOLVING HEALTH AND SOCIAL CARE STUDENTS IN HONG KONG

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Background and Aims

Team-based learning (TBL) has been used as the pedagogy for implementing interprofessional education. Students from different professional disciplines were mixed into small interprofessional teams of five to seven students, which then go through the TBL process: individual readiness assurance test, team readiness assurance test, appeal, feedback, and application exercise. At the end, students in each team assess one another in each of the four interprofessional collaboration practice competencies (ICPC: values/ethics, roles/responsibilities, communication, team and team work). This study aims to (1) find out which disciplines, if there are any, are evaluated more favourably than others, and if the favourable assessment is consistent across the four ICPC; (2) to delineate the effects of team size and cohesiveness on team achievement, as indicated by the team scores in team readiness assurance test and application exercise. Specifically, we want to find out if cohesive teams will perform significantly better than the non-cohesive teams.

Methods

The study involved 276 Chinese students from five disciplines: Chinese medicine (n=15), medicine (n=94), nursing (n=104), pharmacy (n=31), and social work (n=32). In the peer assessment, each student distributed 10 points among the team members according to their performance, for each of the four ICPC. We used variance of peer assessment scores as an indicator of team cohesiveness. Analysis of variance and hierarchical regression were used.

Results

Nursing and pharmacy students obtained higher peer assessment scores than Chinese medicine, medicine, and social work students across the four ICPC. Higher team scores were associated team cohesiveness and larger team size (6-7 members). Hierarchical regression results suggest that team size significantly explained 3.1% to 7.2% of the variance of team readiness assurance test scores and application exercise scores. Team cohesiveness explained a unique additional variance in the two team performance measures, ranging from 1.8% to 12.1%.

Conclusion

Larger team size and team cohesion predict TBL team achievement in IPE. These imply the need for educational institutions implementing interprofessional team-based learning to aim for a bigger team size (preferably 6 or 7) and to nurture team cohesion, as they translate into team achievement. It is therefore important to find ways to trigger team cohesiveness and to reduce social loafing so that all the disciplines will be perceived to be key players in IPTBL.

FREE COMMUNICATIONS 3 – TECHNOLOGY ENHANCED LEARNING I

Psychiatry Clinical Simulation Initiative (CSI) Modules for Medical Education: An Update

Martin Klapheke, United States of America

Facilitators and Barriers of a Cross-Cultural Geriatric Education Distance Training Programme – The Singapore-Uganda Experience

Lynette Ha Ngoc Huong Lien, Singapore

Serious Games in Medical Education: Current Knowledge of, Use and Perceived Implementation Barriers Among Clinical Educators

Kimberly Pei Rui Chan, Singapore

Leveraging on Database Management Tools, Cloud-Based Applications and Mobile App Development Platform to Administer the Curriculum Design Process Effectively and Accurately

Ching Man Liu, Singapore

The Inaugural Neuro-Localisation Pokemon Hunt: A Marriage of Lesion Localisation and Geography with Technology as The Priest

Derek Soon, Singapore

New Way to Learn Alzheimer Using Augmented Reality

Denio Adrianus Ridjab, Indonesia

PSYCHIATRY CLINICAL SIMULATION INITIATIVE (CSI) MODULES FOR MEDICAL EDUCATION: AN UPDATE

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Background and Aims

This presentation will review the development and educational use of peer-reviewed, Clinical Simulation Initiative (CSI) learning modules, and demonstrate access to this free database of interactive, multimedia online modules for medical educators in Psychiatry.

Methods

Since 2012, the CSI Task Force of the Association of Directors of Medical Student Education in Psychiatry (ADMSEP) has developed a database of peer-reviewed, web-based, interactive learning modules. The modules have a consistent pedagogical approach, presenting illness-specific information, including clinical features, differential diagnosis, and treatment, and are illustrated with video-clips of evolving simulated patient cases. Interactive quizzes are included in each module in an effort to consolidate knowledge and promote critical thinking. The goal is to provide a free database for medical educators with comprehensive coverage of the psychiatric disorders addressed in the Key Diagnoses, Learning Goals and Milestones for Psychiatry in Undergraduate Education established by ADMSEP (1).

Results

12 CSI modules are freely available world-wide from ADMSEP and MedEdPORTAL to medical educators in Psychiatry, and brief clips from one or two modules will be demonstrated. Topics include: The Psychiatric Interview; Neurocognitive Disorders; Bipolar Disorder; Anxiety Disorders; Psychotic Disorders; Personality Disorders; Posttraumatic Stress Disorder (adult); Insomnia; Adolescent Depression; Childhood Posttraumatic Stress Disorder, Child and Adolescent Eating Disorders, and Geriatric Depression. Data from one early study demonstrated student satisfaction with the modules and positive impact on students' confidence in disorder-specific knowledge, diagnosis, and treatment (2). Feedback from ADMSEP educators indicated they have utilized the modules in the following ways: as an individual study or small group exercise as part of the clerkship curriculum; as preparation for team-based learning or as a homework assignment for a "flipped" classroom; or as a meaningful alternative learning experience if the ideal of direct exposure to the desired clinical condition is not possible. The main suggestion for improvement from ADMSEP educators was to shorten the duration of the modules and to continue to develop new modules on other psychiatric disorders. By late 2016 CSI modules have been viewed on the ADMSEP website over 45,000 times and in over 70 countries (3); an update on use through late 2017 will be provided.

Conclusion

A free database of peer-reviewed, web-based, interactive learning modules is now available to medical educators in Psychiatry. Early data demonstrated student satisfaction with the modules and positive impact on students' confidence in disorder-specific knowledge, diagnosis, and treatment. Access to the modules will be demonstrated: <http://admsep.org/csi-emodules.php?c=emodules-description&v=y>

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FACILITATORS AND BARRIERS OF A CROSS-CULTURAL GERIATRIC EDUCATION DISTANCE TRAINING PROGRAMME - THE SINGAPORE-UGANDA EXPERIENCE

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Background and Aims

Population ageing is a global challenge. By 2050, developing countries will contribute to approximately 80% of the elderly population worldwide. However, this challenge has not been met with simultaneous increase in the awareness of geriatric issues, availability of long term care facilities and elderly-friendly policies. Singapore as rapidly ageing developed nation with high expertise in aged care could share experience with developing countries. Through a partnership established in 2015, the Geriatric Medicine Department of a tertiary hospital in Singapore delivered monthly training on geriatric education to a health institute in Uganda. This distance training program aimed to improve awareness of elderly care issues, impart knowledge and skills for Ugandan healthcare workers to care for older persons. Eleven live teaching sessions on geriatric care were conducted via a video-conferencing system for 20 Ugandan healthcare professionals. In 2016, an evaluation study was conducted on this cross-cultural education program to explore the perspectives of Ugandan participants in receiving technology-enabled distance training from Singapore. It sought to identify the strengths and barriers to the delivery of culturally appropriate geriatric education program, as well as propose possible ways forward for future training programs to developing countries such as Uganda.

Methods

We conducted semi-structured in-depth interviews with six instructors from the tertiary hospital and six healthcare staff from Uganda who participated in the distance training programme. We analysed the transcripts inductively using thematic analysis to elicit new themes and capture unexpected emergent themes within the data. The nodes and themes were organised using NVivo v.11.

Results

Five salient themes on enablers and barriers emerged. Enablers identified included the interactions between teachers and learners, which could also be perceived as a barrier in the current method of program delivery for a few participants. Next, the perceptions of cross-cultural differences between Singaporean teachers and Ugandan learners were unaligned and posed as a barrier to teaching and learning. Continued relationships and rapport, teacher's motivations as well as institutional support contributed to the sustainability of the programme.

The Ugandan healthcare workers perceived that there had been improvement towards their knowledge, skills, attitude and practice towards geriatric care. Through the programme, learners were empowered to set up a geriatric clinic to cater to the needs of elderly patients. Knowledge gained was also disseminated to local community leaders with the aim of strengthening long-term care services. Moving forward, future initiatives may consider conducting a training needs analysis prior to programme design to ensure the relevance of the curriculum to local context and culture. Programmes could provide alternative methods of delivery such as pre-recorded lectures and dedicated time for interaction. Two-way sharing between teachers and learners may also help to align perceptions of cross-cultural differences, enhancing interaction and opportunities for mutual learning. Lastly, publicity and incentives may better sustain future training programmes.

Conclusion

Findings revealed socio-cultural factors that influenced transnational teaching and learning. Our results provide useful information for future long-distance educational programme, improve cross-cultural competency standards and forge promising international partnerships.

SERIOUS GAMES IN MEDICAL EDUCATION: CURRENT KNOWLEDGE OF, USE AND PERCEIVED IMPLEMENTATION BARRIERS AMONG CLINICAL EDUCATORS

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Background and Aims

Serious Games (SGs) could be an effective approach to tackle the pitfalls of traditional didactic lectures in undergraduate medical education. The educational potential of SGs in stimulating active learning and engaging students has been widely reported in literature. However, their uptake in medical education has been slower than expected and research on this aspect is limited. Therefore, this study aims to explore how much clinical educators know about SGs, their current extent of use, and perceived barriers to their implementation in undergraduate medical education in Singapore.

Methods

An online validated questionnaire was sent to clinical educators of various specialties in an academic public hospital in Singapore. 51 responses were gathered and analysed. Descriptive statistics were performed for all the data collected. One-way ANOVA tests were done to determine if the background of clinical educators and their knowledge of SGs influenced their perception of the barriers. If the ANOVA test results were statistically significant, they were followed up by calculations of the effect size and Turkey post-hoc test.

Results

49.0% of respondents had not heard of SGs before the study. The biggest barriers reported were limited time and resources for educational development, and the lack of knowledge of available game-based learning approaches and medical educational games. SGs were perceived as less suitable ($p < 0.01$) and riskier ($p < 0.05$) by respondents without a prior knowledge of SGs, as compared to respondents with knowledge of them. Respondents without prior knowledge were also less likely to consider using SGs in their teaching ($p < 0.01$). Among specialties, there was a significant difference in the perceived suitability of SGs between at least two of the specialties ($p < 0.05$).

Conclusion

Our study shows that there is a need to increase the knowledge of SGs among clinical educators. Increased knowledge about SGs will likely foster a more positive attitude (more suitable, less risky) to SGs as an educational approach. We anticipate that such effort would contribute to an increased use of SGs in medical education.

LEVERAGING ON DATABASE MANAGEMENT TOOLS, CLOUD-BASED APPLICATIONS AND MOBILE APP DEVELOPMENT PLATFORM TO ADMINISTER THE CURRICULUM DESIGN PROCESS EFFECTIVELY AND ACCURATELY

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Background and Aims

The NUS Yong Loo Lin School Medicine (NUS Medicine) embarked on a massive Outcomes Definition and Curriculum Rationalisation (CR) exercise in 2012. As the project managers supporting this effort, we are confronted by humongous task of managing a mountain of data collected and needed to rationalise the curriculum effectively and accurately. This paper aims to share the three technological tools that are not only low-cost, but have gentle learning curve, that have helped us tremendously in the process.

Methods

Database management systems (DBMS) provides a systematic way to create, retrieve, update and manage data. Our first example showcase how a DBMS can be used to streamline information and workflow to manage and generate customised information for the 25 workshops we ran between 2013 to 2014, involving about 200 attendees, to craft the learning objectives for 285 core topics. In the subsequent stage, another close to 200 core educators were involved in the refinement of the learning objectives for 400 topics. Cloud-based applications and the accompanying web page creation suite was deployed to create a directory of topics to simplify and automate the curriculum design and development process, completely removing the need for administrators to track and follow through the documentation and revision process.

Finally, without needing to know complex coding, a mobile web-app for an editorial team was quickly developed and deployed within 2 months, building upon the database management system and cloud-based application suite, leveraging on a mobile app development platform. This mobile web-app has made it possible to manipulate, and present over 8000 units of learning objectives for a team of 16 editors in customised packages so as to help them focus in the editorial work.

Results

(See methods)

Conclusion

These three examples showcase how technology has been used to overcome some of the key challenges in administering medical education, for example how to systematically document and manage inter-disciplinary and ground-up conversation; and how to manage massive amount of data and personalise or customise the information for medical educators whose time is utmost precious.

THE INAUGURAL NEURO-LOCALISATION POKEMON HUNT: A MARRIAGE OF LESION LOCALISATION AND GEOGRAPHY WITH TECHNOLOGY AS THE PRIEST

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Background and Aims

Neurological localisation is a clinical skill involving the deductive location of offending lesion(s) within the nervous system based on the presenting clinical picture. It requires a firm grasp of neuroanatomy and clinical-anatomical correlation, and is traditionally viewed as a challenging skill to teach and to practise. To emphasise the spatial nature of clinical neuro-anatomy, we devised a technologically supported geo-tagging learning session which incorporates elements of competition, collaborative learning, peer- instruction and fun.

Methods

Learners are divided into competing teams of roughly 5 to 7 each. The session, which lasts roughly 2.5 hours, is divided into a briefing phase, a geo-tagging phase, and a debriefing phase.

Briefing phase (15 minutes)

Learners receive brief instruction on neuroanatomy and neurolocalisation refresher, an explanation of the format and rules of the learning activity, and safety regulations.

Geo-tagging phase (60 minutes)

The geo-tagging phase involves collaborative problem-solving and geographical navigation between 2 competing teams. Communication between the educator-coordinator and the teams is through instant messaging. The areas of operation and routes are judiciously chosen for safety and avoidance of disruption to university or hospital staff.

Each team is sent a clinical scenario and accompanying neuroanatomical images superimposed over local maps.

The team collaboratively solves the clinical scenario, locates the lesion neuroanatomically, and navigates to the corresponding geographic location using the sent maps.

After providing photographic proof that the team has reached the desired location, the team is sent a supplementary question relating to the scenario. The cycle is then repeated with the sending of a fresh scenario and neuroanatomical/geographical superimpositions.

Collaboration and the use of internet-based resources are both encouraged.

Points are awarded for accuracy in neurological localisation, geographical localisation, and for correctly answering supplementary questions.

Competing teams are sent different sets of scenarios and different target locations. This serves the purposes of avoiding direct competition, and of multiplying the learning cases discussed during the debriefing phase. Teams are typically sent 3 scenarios each during an hour's geo-tagging.

Debriefing phase (60 minutes)

Following the geo-tagging phase, teams gather for a peer-teaching session, during which each team explains to the class how they solved their assigned cases.

Results

The neuro-localisation Pokémon hunt was conducted for year 3 students during their medicine attachment in 2017. Student feedback thus far has been overwhelmingly positive. Further results will be provided in the conference.

Conclusion

The intent of the sessions was to use geography to emphasise the spatial nature of neuroanatomy, and to explore fun ways of learning and practising neuro-localisation. The sessions used social media and instant messaging to enable a collaborative, internet-supported, competitive, game-based learning activity. The debriefing phase was the most educationally rich part of the session. It provided a platform for each learner to present and discuss the clinical reasoning behind the scenarios assigned to their own and their competing team. The peer-driven learning reinforced concepts and allowed the rapid identification and correction of misconceptions. While this format was applied to neurological localisation, we believe it is transferable and applicable to other areas of medical education.

NEW WAY TO LEARN ALZHEIMER USING AUGMENTED REALITY

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Background and Aims

Alzheimer is a progressive neurological disease which affects multiple brain functions, including memory. Alzheimer's' prevalence in 2013 reached 1 million people in Indonesia and is expected to increase double by 2030, and become four million people by 2050. In Indonesia, dementia is thought to be common in elderly, so it is often undetectable. Alzheimer disease can be detected in early onset and it will help the patient and his family to deal better with the psycho-social effects of the disease. Alzheimer disease is hard for the public to understand because the brain can't be seen directly so it is hard for them to imagine the process that is happening in Alzheimer's brain.

According to Mayer's cognitive theory of multimedia learning, the brain selects and organizes words, pictures, and auditory information dynamically to produce logical mental constructs. The more sensory organ involved in learning, the more deeply they learn, so using technology that trigger many sensory organs will have positive impact in learning. One of the examples of such technology is Augmented Reality (AR). It can be regarded as a technology that integrates three dimensional computer-generated objects and/or virtual content into the real world in real time, thereby enhancing the perception of reality.

The purpose of this project is to develop multi-sensory learning about Alzheimer disease for general public and medical students.

Methods

We planned to develop AR technology on Alzheimer disease, which is in line with Atma Jaya medical school's flagship program in Geriatric and Gerontology. We then created a working group comprised of several departments which we thought could give contributions related to Alzheimer disease such as Department of Neurology and Department of Anatomy.

The working group discussed the concept, location, and resources needed. Then we collaborate with AR & CoTM to work on the AR design and program.

Results

It was decided that the location for Alzheimer AR will be in the Anatomy Museum, Atma Jaya Catholic University of Indonesia. There will be an Alzheimer corner in the museum that will be equipped with tablets for using AR, a laptop that is used for Alzheimer' screening test and a banner contain information about Alzheimer' prevention. There will be two types of AR. First is the comparison between anatomy of normal and Alzheimer brain in whole view, sagital and coronal cross sections. Second is the comparison between normal neurons and Alzheimer neuron (Plaques and Tangles).

Conclusion

The AR technology offers a highly realistic situated learning experience so the people that use AR will have multi-sensory learning. By giving 3 D imaging of normal and Alzheimer brain, we hope that the public will find it easier to learn about Alzheimer and the changes in the brain and neurons. We also planned to use this technology for other conditions.

FREE COMMUNICATIONS 4 – ASSESSMENT

Developing a Comprehensive Checklist of Essential Dental Consultation Components into the Calgary Cambridge Framework and its Psychometric Testing

Sunila Sangappa, India

Using Eye Tracking to Evaluate Medical Assessment Question Types

Jia Rui Kwan, Singapore

Involving Students in Assessment: Development of a Student Question Bank

Kirsty Forrest, Australia

Relationships Between Scores on the Biomedical Admissions Test (BMAT) and Later Stages of the Selection Process: Findings from a UK Medical School

Amy Devine, United Kingdom

Developing and Validating Script Concordance Testing for ENT Undergraduates

Sivaraman Ganesan, India

Educational Benefit of Peer-Assisting Mock OSCE Among Medical Students

Warinrumphai Vanichranun, Thailand

DEVELOPING A COMPREHENSIVE CHECKLIST OF ESSENTIAL DENTAL CONSULTATION COMPONENTS INTO THE CALGARY CAMBRIDGE FRAMEWORK AND ITS PSYCHOMETRIC TESTING

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Background and Aims

The key to accomplishing a shift in health care from a provider-centred approach to one that is patient-centred is providing excellent care through effective therapeutic communication (ETC) skills. The assessment of students' communication is crucial as it is a core competency skill. There is no published evidence that the tools currently applied in dental education to assess communication skills are psychometrically sound. Since it is often assessment that drives student priorities for learning, there is a pressing demand to establish reliable and valid methods to assess competency in communication with patients among dental students. It is essential to develop a holistic assessment tool to meet the needs of the clinical education. The study aims to develop a dental consultation communication assessment checklist (DCCAC) based on the Calgary Cambridge framework and test its psychometric properties.

Methods

The DCCAC developed by us followed a two-step process beginning with the Development stage and ending with the Judgment-quantification. Development of the checklist was based on existing instruments used by other health care professionals obtained from an extensive literature review and thematic analysis of the findings using qualitative methods. An expert panel was invited to ensure the face and content validity of the thirty one item DCCAC checklist built on the Calgary Cambridge framework. The checklist was pilot tested with seventeen third year undergraduate students for internal consistency of items within a domain group across six domains and feedback on clarity of the thirty one items that were included the checklist. A total of 86 third-year dental undergraduate students were rated by two raters to evaluate the psychometric properties of factor structure and test-retest reliability of the checklist during four student-patient encounter communications related to the procedure "fabrication of removable denture prosthesis".

Results

Content Validity Index (I-CVI) and Scale Content Validity Index (S-CVI) of the DCCAC revised tool with 31 items was 1. S-CVI/UA, the proportion of items that received universal agreement by experts that the items are rated 3 or 4 was 0.8636. The internal consistency of the DCCAC were satisfactory with Cronbach alpha of .703 and Inter-item consistency of 0.927 and test-retest reliability .914 across six domains.

Conclusion

The Product arising from the development and psychometric testing of DCCAC for undergraduate dental students has the potential to be used as a valid tool to assess clinical competence among the dental undergraduate students during a patient interview, and provide specific and formative feedback to enhance the comprehensive clinical learning experience since DCCAC also functions as a tool for self-reflection and feedback in clinical teaching and assessment. Detailed description of the process will also help and encourage other dental educators develop other instruments and validate them.

USING EYE TRACKING TO EVALUATE MEDICAL ASSESSMENT QUESTION TYPES

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Background and Aims

Assessments are crucial for learning. It serves to measure knowledge acquisition, application, consolidation and recall. In medicine, this proficiency will allow practitioners to offer the best care available for patients. However, assessments can be set using open-ended (OEQ) or close (MCQ) questions, which encourages generation and cueing effect respectively. To date, there is no consensus on a best method of setting tests in medical education. Eye tracking is a novel methodology that allows researchers to understand and recognise cognitive processes. This paper aims to investigate how the different question types affect the thought processes of the learner using eye tracking and concurrent think-aloud (CTA) in the context of the medical school.

Methods

A total of 16 medical students with clinical experience were given MCQs and OEQs in the form of virtual patients to complete. MCQs had 2 types, single best answers (SBA) or multiple selection questions (MSQ) (select all that apply). They were given instructions to verbalise thoughts according to the concurrent think-aloud protocol. Eye tracking was conducted using the Tobii X2-30 eye-tracker. Think-aloud and eye tracking footage was analysed manually to identify cognitive processes.

Results

All participants (n=16) have brown eyes and no known abnormalities in visual processing. The population comprises males (n=10, 63%) and females (n=6, 37%). 12 wore glasses (males=7, females=5), 2 wore contact lens (males=2, females=0) and 2 have perfect vision (male=1, female=1). In total, there were 19 questions, categorised by learning objectives (LO) into diagnostic (5), investigations (8) and management (6). All diagnostic questions were SBA questions while investigations and management questions were MSQs. In manual analysis of the CTA-gaze plot footage, cueing effect was identified when participants looked at the options while deliberating, while generation effect was detected when participants produced an answer before their gaze reached the options. Ability to generate diagnoses was constant regardless of question type. More participants generated investigations in OEQs, median 5 (inter quartile range (IQR) 3-6.5) participants, compared to a median of 1 (IQR 0-1.5) participant in MCQs. For management, a median of 7 (IQR 5-7) OEQ participants generated the correct managements in contrast to a median of 1 (IQR 0-1) participants for MCQs.

Conclusion

In conclusion, when attempting OEQs, eye tracking and CTA showed that generation effect played a larger part in reaching an answer as compared to MCQs across all LOs. Participants tend to completely rely on the cueing effect when approaching MSQs, which is more efficient for answering these questions, as compared to SBA questions where generation effect was equally employed by all participants.

INVOLVING STUDENTS IN ASSESSMENT: DEVELOPMENT OF A STUDENT QUESTION BANK

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Background and Aims

Medical educators have long understood the relationship between assessment and its effect on student learning behaviours. Whilst educators aim to provide a program of assessment that encourages deep learning of core concepts, there is a perception by students that assessment is something applied to them as barrier to progress or a test of their ability to remember information. This can drive behaviours that encourage cramming for exams or surface learning of material. It is thought that involving students in assessment may result in increased transparency of assessment processes, a deeper learning of the curricula material and enhanced self-directed learning.

Educators work hard to provide opportunities for formative or practice exam questions, however students consistently request more practice exam questions and increased feedback on why exam options are correct/incorrect. How to service the needs of the students with the relentless faculty need to create new exam items to service summative exams? How to maintain the integrity of the summative bank of questions while providing students with sufficient formative questions?

Methods

With the support of the Medical Faculty and the learning management system (LMS) support team, the Medical Student Society of Bond University (MSSBU) initiated the creation of a Student Question Bank, operating as a Blackboard community. This exam question bank is created by the students, for the students. Faculty work with the student body initially to teach the basic principles of item-writing and students continue to write and submit exam questions. All students have unlimited access to practice exams created randomly from pools of items submitted by students. Students determine the categories of questions related to the Year of program, blocks of learning and learning disciplines

Results

Student activities to maintain the bank; the PBL groups are encouraged to write items for submission, the MSSBU committee review submitted questions and place them into appropriate "Pools" of Year and discipline specific exam questions and students create exams of random questions from topic "pools" for student cohort to use in practice Faculty Support includes; liaising with MSSBU and LMS support, facilitating item-writing workshops for student body, retiring summative exam questions to the student bank, providing banks of formative question and promoting the student bank with incoming cohorts of students. Features of the MSSBU student question bank include: • Single sign-on for all students via the Blackboard platform • Every medical student automatically enrolled in the site • Students can sit any exam created in any discipline, multiple times • Links to MSSBU Facebook page and Website for ease of communication within the student body • Students are encouraged to write exam questions and submit to the bank directly • Students can review the results

Conclusion

Benefits to students in using the student bank for exam practice include timing and feedback. Students can initiate when they revise a topic and repeat tests. They also can identify discipline areas of weakness and remediate before summative exams. Further evaluation of how learning has been affected is our next step.

RELATIONSHIPS BETWEEN SCORES ON THE BIOMEDICAL ADMISSIONS TEST (BMAT) AND LATER STAGES OF THE SELECTION PROCESS: FINDINGS FROM A UK MEDICAL SCHOOL

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Background and Aims

BMAT is used internationally by medical schools in their selection processes, and this increasingly includes universities in Southeast Asia that teach their medical courses in English. The test measures potential for science-based study by assessing across three sections: aptitude and skills (Section 1), application of scientific knowledge (Section 2), and written communication (Section 3). Recent adopters of the test in Thailand and Malaysia are interested in using BMAT to support shortlisting for interview. A number of UK medical schools have shortlisted with BMAT alongside other selection criteria for some time now. In contexts where BMAT has been used to successfully support shortlisting, we should seek to understand how admissions test scores relate to interview performance. It is important to establish the relationship between shortlisting tools and interview scores, so that we know whether those interviewed have a reasonable chance of performing well. Therefore, a study aiming to examine the relationship of BMAT scores with interview performance was conducted at a UK medical school.

Methods

Multiple Mini Interview (MMI) data for three years of applications to a UK Medical School were obtained; for each year, scores for eight individual stations and overall MMI performance aggregated across all stations were available. The MMIs remained broadly the same across years, but a small number of stations were removed or replaced. BMAT scores were correlated with MMI station scores, separately for each year. As overall MMI score was the variable used to make actual shortlist decisions, regressions using it as a dependent variable were also conducted, to investigate whether BMAT Sections predicted variance in this outcome.

Results

Correlations between BMAT Section 3 (written communication) and various stations were expected. Positive relationships were also hypothesised between MMI stations that assess problem solving and BMAT Section 1 (aptitude and skills). A pattern of correlations was observed between MMI and BMAT sections as predicted, and some relationships repeated across years. This suggests that the findings were robust. Regression models supported this result, as they consistently showed that Section 3 predicted variance in overall MMI scores. Section 1 also predicted unique variance in this outcome for one year.

Conclusion

There were statistically significant positive correlations between BMAT scores and MMI station scores, that fitted with hypotheses based on theory and assessment constructs. Relationships between BMAT Section 3 scores and overall MMI performance were observed in all three years. This Section typically has weaker relationships with on-course performance than other BMAT components, but these findings suggest that Section 3 better predicts applicants' performance during late stage selection, meaning it could potentially help select applicants more likely to perform well on MMIs. These findings support the validity argument for using BMAT in shortlisting. However, they also highlight the complexity of multi-method selection processes that are used for biomedical courses. As previous research on admissions tests has focused on predicting academic grades, the relationship between test scores and later stages of selection are an important area to investigate further, particularly because admissions test scores are commonly used for shortlisting.

DEVELOPING AND VALIDATING SCRIPT CONCORDANCE TESTING FOR ENT UNDERGRADUATES

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Background and Aims

Clinical reasoning plays a major role in the ability of doctors to make diagnoses and decisions. It is considered as the physician's most critical competence. Reasoning is developed based on recognising a diagnosis, investigation or treatment through comparing and contrasting key clinical features. These are classically described as "illness scripts". Using these scripts, a knowledge driven model of reasoning can be inculcated and also assessed for any medical graduate.

OBJECTIVES: 1.To develop script concordance test (SCT) for ENT undergraduates 2. To validate and check for reliability of the script concordance test.

Methods

Twenty six SCTs were prepared by two authors based on the British Medical Journal best medical practice based on syllabus of the institute. Ninety eight items were nested within the SCTs. Twenty panel members* (ENT faculty) from different colleges solved the SCT. Based on this grid scoring was prepared. Optimisation of Panel was done by Outlier method. After consent, 30 undergraduate students who passed ENT university exam and 10 postgraduate students completed the SCT. Based on panel grid scoring, total marks of each student, mean marks scored by all students in each item was calculated. The reliability of the scores was measured by Cronbach's alpha coefficient and the scores of the students and panel were compared using a t-test.

Results

The difference between the panel and student scores was statistically significant and the reliability of the scores was 0.72. Reliability scores after deleting 27 poor items increased to 0.82.

Conclusion

We had developed SCT with good internal consistency (Cronbach's alpha = 0.83) after optimising the panel, students and items. SCT is able to significantly differentiate between the Undergraduate and Post graduate students.

EDUCATIONAL BENEFIT OF PEER-ASSISTING MOCK OSCE AMONG MEDICAL STUDENTS

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Background and Aims

Medical students always get worried and cannot apply pieces of knowledge and skills well during first objective structured clinical examination (OSCE) exam. Students have no opportunities to practice OSCE other than in the examination itself. Mock OSCE will help to prepare students for the real OSCE examination and can increase the confidence of students. The objective of this study is to explore the effectiveness of mock OSCE to the organizers and participants.

Methods

In the academic year 2017, 40 fourth year medical students (tutees) who had never been done OSCE examination before were included in this study. They participated in mock OSCE that organised by fifth years medical students (tutors). Fifteen mock OSCE stations consisted of 5 history taking stations, 5 physical examinations station, 5 procedural skills stations, 3 interpretation skills stations. The level of anxiety was evaluated after first real OSCE examination by STAI Form Y-1, ST5 and the satisfaction of mock OSCE were evaluated by 20-item questionnaires and focus group discussion of both tutees and tutors.

Results

The result of this study revealed that the tutees had a low level of exam anxiety after joining mock OSCE (STAI Form Y-1 = 39.95, ST5 =3). Tutees know how to learn and prepare for real OSCE examination and significantly decrease stress and anxiety. Mock OSCE helps them most to remember to washing hands and identify patients before doing any procedure (85.71%) while the least was to interpret systematically X-ray film (47.6%). The benefit from tutors comments was improved history taking, physical examination skills, and teaching skills.

Conclusion

Mock OSCE is the peer-assisted learning method that can improve tutee confidence and reduce the anxiety due to knowing how to prepare for OSCE exam. Tutors improve history taking, physical examination, and teaching skills. Mock OSCE should be held for medical students before the real OSCE examination especially in the beginning of a clinical year.

FREE COMMUNICATIONS 5 – FACULTY DEVELOPMENT

What Should Residents Learn to Teach? A Modified Delphi Survey to Define Competencies of Resident-As-Teacher

Tadayuki Hashimoto, Japan

Preparing Medical Students in Asia for International Clinical Elective Placements

James Thomas, Japan

Understanding the Response Process of Residents Evaluating Clinical Teachers – Influences of Instrument and National Culture

Makoto Kikukawa, Japan

Comparison between the Teaching Performance Indicator Data and Teaching Hospital Accreditation Results

Mei Yi Chou, Taiwan

Quality of Clinical Learning Environment and its Association with Taiwanese National Cultural Values between Medical Trainees and Clinical Teachers

Jer-Chia Tsai, Taiwan

Towards a Consistent Approach to the Mentoring of Novices by Senior Physicians in Palliative Medicine

Wesley, Teck Wee Loo, Singapore

WHAT SHOULD RESIDENTS LEARN TO TEACH? A MODIFIED DELPHI SURVEY TO DEFINE COMPETENCIES OF RESIDENT-AS-TEACHER

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Background and Aims

Residents are the pivotal role of clinical education. Previous study revealed 20 percent of a resident's time was spent on teaching activities. Several workshops for young attendees or residents have been held since more than 20 years. Despite their critical role as teachers, no teaching competency for residents exists yet.

Methods

We conducted a modified Delphi process to examine teaching competencies for residents. 50 items were generated from literatures regarding teaching competencies in any levels. 24 panelists (6 each medical educators, program directors, chief residents and residents) from various facilities were recruited to rate the importance on a scale of 7.

Results

Recovery rate was more than 80 percent in all rounds. In this study, we set a standard of consensus, which is a more than eighty percent answerer rated 7 (important) or 6 (very important) without any comments. The Delphi approach resulted in a list of 25 competencies after 3 rounds. Our study revealed that young attending or residents are expected as a "Clinical or practical teacher", "Teaching role model", "On-the-job role model", "Learning facilitator" and "Student assessor" among the 12 roles of the teacher.

Conclusion

This is the first study to find the competencies for young attendees and residents by modified Delphi approach. We are planning to hold a resident-as-teacher workshop following this result. Through workshops, we are going to verify validity of these competencies.

PREPARING MEDICAL STUDENTS IN ASIA FOR INTERNATIONAL CLINICAL ELECTIVE PLACEMENTS

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Background and Aims

The number of medical students from Japan who participate in international clinical elective placements has increased significantly over the past decade. Similar trends can also be seen at medical schools in other parts of Asia. Such placements can give students opportunities to improve their communication skills, clinical knowledge, confidence, and gain exposure to a variety of multi-cultural experiences. These placements often require a significant investment of time and money and, therefore, it is important to prepare students prior to their departure.

Methods

We have developed and refined a series of preparation programmes with the aim of assisting students in developing key skills that they will require when participating in overseas clinical placements. The sessions include lectures, small group discussions, simulated patient encounters, English-speaking patient OSCEs, and access to online resources and demonstration videos. The challenges, limitations and successes of these components will be highlighted and discussed.

Results

One hundred and twenty 5th year medical students, with varying levels of English ability, participated in six separate programmes between 2013 and 2017. Providing a combination of learning experiences, with a strong emphasis on practice, simulation, and constructive feedback proved to be one of the most successful approaches when preparing students for international placements.

Conclusion

Our programmes provided an interactive, educational and enjoyable opportunity for students to prepare for international clinical placements. Future expansion of the programmes needs to be carefully considered to adapt to the growing number of medical students participating in international placements.

UNDERSTANDING THE RESPONSE PROCESS OF RESIDENTS EVALUATING CLINICAL TEACHERS - INFLUENCES OF INSTRUMENT AND NATIONAL CULTURE

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Background and Aims

A review of the literature showed that evidence about content and internal structure is well represented among published evaluation instruments of clinical teaching. However, we still have little insight in the actual response process residents go through while filling in the instruments.

Methods

This study aims to explore the response processes of residents filling out the first reported teaching evaluation instrument developed in Japan, an East Asian setting. The participants were theoretically sampled residents from 10 teaching hospitals. Using constructivist grounded theory methodology, we conducted in-depth semi-structured individual interviews. Codes were established in an iterative fashion. Interviews and data analysis were conducted until the point of thematic saturation was achieved. 30 residents in total participated to the interviews.

Results

While filling out an evaluation instrument to evaluate a clinical teacher, residents would engage in a process which we named the 'rationalisation process' in which they tried to find a consistent rationale for their evaluation based on three factors; 1) seeking evidence, 2) settings standards, and 3) characteristics of the instrument. These three factors influenced each other. Besides that residents were influenced by the conditions under which the evaluating took place like timing of evaluation. However, most saliently, residents were aware of the relationship with their clinical teachers, especially associated with hierarchy and collectivity, they had with their clinical teachers which considerably affected their rationalisation of the process and their ratings.

Conclusion

Hofstede's cultural investigation has shown that Japanese culture is a high-power distance and collectivism society. Our findings suggest that the sense of relationship is related to this cultural dimension. We assume that the structure of response process on teacher evaluation may not be universal, influenced by cultural values because observers who have their cultural perspectives and backgrounds interpret items and make a decision. Therefore, evaluating clinical teachers may involve culturally dependent activity. As such the typical evaluation instrument using observations to provide a score may be challenging, especially in high power distance and collectivism society. In conclusion, medical educators should be aware of their cultural aspects in evaluating clinical teachers.

COMPARISON BETWEEN THE TEACHING PERFORMANCE INDICATOR DATA AND TEACHING HOSPITAL ACCREDITATION RESULTS

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Background and Aims

The teaching hospitals performed "2-year medical staffs training program" should report teaching performance indicator data through information system every years, and Joint Commission of Taiwan assigned surveyors to review mentioned data and scored with standards online. Teaching hospitals were also been on-site checked by accreditation once every four years.

Methods

The present study selected part of teaching performance indicator which could be on-site checked by teaching hospital accreditation. We used t-test to analyse the same year's data from 2011-2014 that collected via teaching performance indicator and accreditation results to compare the difference of grades between online reviewed and on-site checked.

Results

We chose the five indicators to evaluate the teaching performance of hospitals, including the system of faculty development, the reward regulations for teaching, the sufficiency of teaching device, multiple models of inter-professional practice and education, and cooperation with other hospitals. We used the grade scale "A, B, C, D" as the result of indicator review. The percentages above "C" of selected teaching performance indicator were 99.22%, 94.53%, 99.22%, 95.31% and 83.59%. The achieved rate of accreditation standards of teaching hospital relative to teaching performance indicator were 94.12%, 97.06%, 95.20%, 94.85%, and 94.85%. There were no statistically significant difference ($t=-0.29$, $p=0.78$) between two mentioned data.

Conclusion

The results showed that achieved rate of standards checked by surveyors between online reviewed via teaching performance indicator and on-site checked via teaching hospital accreditation was no difference. However, the teaching performance indicator still couldn't replace the teaching hospital accreditation which has a comprehensive on-site checked process with completely standards. The previous data of teaching performance indicator reported by teaching hospital could assist on-site accreditation surveyors to understand its development situation of partially standards rapidly and usefulness.

QUALITY OF CLINICAL LEARNING ENVIRONMENT AND ITS ASSOCIATION WITH TAIWANESE NATIONAL CULTURAL VALUES BETWEEN MEDICAL TRAINEES AND CLINICAL TEACHERS

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Background and Aims

Clinical learning environment (CLE) encompasses the key elements of teaching, team relationships, sociocultural factors and organisational support. Quality of CLE is crucial to ensure the learning outcomes and well-beings of medical trainees. This study aims to investigate the quality of CLE through the domains of Content, Atmosphere, and Organisation and its association with national cultural values of Hofstede's framework between Taiwanese medical trainees and clinical teachers.

Methods

Research instruments include (1) Scan of Postgraduate Educational Environment Domains (SPEED) (SchÖnrock-Adema, 2015) questionnaire with 15 items and a 4-point Likert scale (completely disagree 0 to completely agree 3); (2) Six national cultural dimensions by Values Survey Module (Hofstede, 2013). Two surveys were conducted by the ratings of 400 medical trainees (including clinical medical students and residents) and self-ratings of 124 clinical teachers. Student t-test and correlation analysis were used for statistical analysis.

Results

Survey of CLE quality showed the significantly higher ratings in medical trainees than clinical teachers in Atmosphere (no negative impact on the educational climate and supervisor's support in difficult situations), lower in Organisation (emphasis on teaching and learning by department, available good clinical supervision, clear goals about duties and responsibilities, and relevant tasks to learning). Lower ratings by medical trainees in Organisation domain raise the concerns of clinical teachers' supervisory styles, goal orientation and systemic regulation of department's educational role. Survey of national cultural values in medical trainees, compared to clinical teachers, demonstrated the lower values in Power Distance and Long-term Orientation, but higher values in Individualism (IDV) and Indulgence. IDV had a negative correlation with Content and Organisation of CLE.

Conclusion

Medical trainees demonstrate the better perceptions of CLE quality than clinical teachers in teaching content, atmosphere, and support. Organisational regulation and proper supervision are main areas for quality improvement of CLE. The gaps of CLE quality between medical trainees and clinical teachers may be associated with their different working values and expectation. The diversities of national cultural values between medical trainees and clinical teachers might be explained by inherent differences of generation gap, role identity, and responsibilities and these may affect their perceptions of CLE. Understanding interrelationship between CLE quality and national cultural values may help creating better mutual engagement between medical trainees and clinical teachers and effective organisational operation of CLE.

TOWARDS A CONSISTENT APPROACH TO THE MENTORING OF NOVICES BY SENIOR PHYSICIANS IN PALLIATIVE MEDICINE

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Background and Aims

Mentoring is an effective means of providing holistic support for trainees. Yet, the mentoring process is poorly understood and thus difficult to replicate and monitor particularly in Palliative Medicine which sees trainees mentored by Palliativists from nursing, medical, social work and surgical backgrounds.

At the heart of these concerns has been a failure to acknowledge mentoring's mentee-, mentor- and organisational-dependent, goal-specific, context-sensitive nature which limits simple comparisons between various mentoring approaches. Furthermore, there has been a failure to differentiate mentoring from supervision, advising, preceptorship and role models and prevent conflation of the various forms of mentoring adopted in prevailing clinical practice

This thematic review circumnavigates prevailing limitations through acknowledgment of mentoring's nature and focus upon a specific form of mentoring that will form the basis for a clinically-sensitive, evidence-based theory of mentoring.

Methods

A thematic review of systematic reviews of novice mentoring by Palliativists to identify common themes in prevailing mentoring approaches in nursing, medical, social work and surgery was carried out involving PubMed, ERIC, Cochrane Database of Systematic Reviews, OVID and ScienceDirect databases with the search terms: "mentor", "mentoring", "mentorship" "mentoring relationships" AND one of the following: "medicine", "surgery", "nursing" and "social work" or their combinations. Only reviews between 1st January 2000 and 31st December 2015 were included in recognition of a general lack clear delineation of mentoring practice prior to 2000.

Results

20 reviews were identified including 1 review of mentoring in medicine and nursing, 10 in medicine, 4 in surgery and 5 in nursing. There were no reviews of mentoring in social work. The 2 themes identified include nature and elements of mentoring.

The data confirms mentoring's context-sensitive, goal-specific, evolving, mentor-, mentor-, organisational-dependent nature and highlights the central importance of mentoring relationships.

Conclusion

The data allows the forwarding of Krishna's Mentoring Pyramid that highlights the key considerations to nurturing effective mentoring relationships. Krishna's Mentoring Pyramid highlights the importance of due consideration mentor-, mentor-, organisational-dependent factors in the mentor -mentee matching process and in the creation of effective mentoring environments.

FREE COMMUNICATIONS 6 – CURRICULUM

Improving Awareness of Quality Improvement Concept Among Paediatric Residents in Hamad Hospital, Qatar: Successful Story

Magda Youssef, Qatar

Randomised Prospective Study Comparing the Effectiveness of Spaced Learning to Mass Learning in Microsurgical Procedures

Wendy Teo, Singapore

Positive Outcomes of Simulation-Based Learning in Critical Care Physiotherapy

Geetha Kayambu, Singapore

Effects on Student Results and Course Evaluations of Reduction in Teaching Hours in an Undergraduate Medical Course

Richard Hays, Australia

Workplace Based Assessment – Learner and Assessor Perspective Lessons from a 7 Year Project

Balakrishnan R (Kichu) Nair AM, Australia

Development of Values-Based Practice Workshop to Improve Patient-Centred Interprofessional Collaboration

Hirota Onishi, Japan

IMPROVING AWARENESS OF QUALITY IMPROVEMENT CONCEPT AMONG PAEDIATRIC RESIDENTS IN HAMAD HOSPITAL, QATAR : SUCCESSFUL STORY

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Background and Aims

Improving health workers' performance and productivity is vital for improving health care delivery. Formal training on quality improvement methodology is relatively new but essential. To improve the care within our paediatric department, we need to ensure that our health professionals, allied teams and managers have the knowledge and skills to improve and develop healthcare services. To achieve this aim, there have been several efforts made in the Paediatric Department at HMC to motivate physicians and inspire them to excel in providing safe and effective care of the highest quality and value. In 2016-2017, a Quality training program for paediatric residents have been developed and implemented to teach paediatric residents formal quality improvement methods.

Our aim was:

- 1 To spread and establish the concept of Quality Improvement (QI) among Paediatric Physicians.
- 2 To increase the percentage of paediatric physicians participation in quality improvement projects.
- 3 To increase the percentage of paediatric physicians receiving training in quality improvement to 100%.
- 4 To increase the number of quality improvement initiatives within paediatric department.
- 5 To enable paediatric physicians to identify the different ways and levels in which users can be involved in quality improvement in health care.

Methods

Following the quality improvement approach of PDSA model, baseline data was collected through survey assessing the knowledge and awareness of paediatric physicians about quality improvement concept.

After working on the baseline data, the most contributing factor selected as an indicator was:

- 1 Lack of training on Quality Improvement Process.
- 2 Deficit in participation in quality improvement projects within department.

There was an intervention in form of:

- i. Encouraged paediatric physicians to complete IHI open school online educational modules.
- ii. Residents were encouraged to participate in CCITP quality projects.
- iii. Initiation and implementation of a Quality Improvement Training program for paediatric residents in collaboration with CCITP coaches, to educate the maximum number of paediatric residents.
- iv. Mentoring of groups of resident to lead and conduct a quality project within paediatric department.

Results

Post interventions Survey was used to understand and show the improvement in the target process. The result among resident was:

1. There is an increase in the percentage of Physicians received training in quality improvement from 60% to 90%.
2. The percentage of paediatric physicians participating in a quality improvement projects in paediatric department increased from 32% to 70%.
3. There is a notable increase in the number of quality improvement projects initiated in the paediatric department specially in the year 2016 after the educational sessions by Paediatric QPS Committee

Conclusion

Educating health professionals on how to improve quality and safety is the key to the future of healthcare. While most newly qualified residents are well prepared in the science of medicine and in the skills that enable them to look after individual patients, still they are lacking knowledge about quality improvement and its relation with care improvement and patient safety. We in paediatric department realised this, and therefore we initiated the quality improvement training and education program specially for the new residents. Currently we are looking to achieve the next step which is, establishing this training program in requirements of the residency curriculum.

RANDOMISED PROSPECTIVE STUDY COMPARING THE EFFECTIVENESS OF SPACED LEARNING TO MASS LEARNING IN MICROSURGICAL PROCEDURES

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Background and Aims

Spacing phenomenon occurs when learning outcomes are greater with the teaching process spread out over time (spaced learning), as opposed to having the same total duration of teaching carried out over a single session (mass learning). Spaced learning has been shown to improve explicit memory tasks including free recall, recognition, cued-recall and frequency estimation. It has been used in various medical specialties with promising results and has been shown to be at least as good as mass training in learning clinical skills such as cardio-pulmonary resuscitation and laparoscopy skills. We aim to test the concept of spaced learning in learning delicate and complex skilled procedures like microsurgery. Our hypothesis is that spaced learning is better than mass learning in acquiring microsurgical suturing skills.

Methods

Medical students with no prior exposure to microsurgical training were randomised into control (mass-learning) and treatment (spaced learning) groups. The students were all taught to handle microsurgical instruments and to suture a prefabricated 4mm wide elastic strip under the microscope using Digital Surgicals MicroTrainer. The control group was taught continuously over 8hrs while the treatment group was taught in 2-hour sessions held each week over a span of 4 weeks. The learning outcomes that were measured included duration taken as well as the placement of the sutures in relation to each other, with the latter being objectively assessed with the use of a computer program from Digital Surgicals. In addition to being assessed at the beginning of the sessions, all participants completed another test 1 month after the completion of the sessions.

Results

39 medical students (mean age= 22.5 years old) participated in the study, with 24 (n=57.1%) being randomised to the mass-learning group and 18 (n= 42.9%) in the spaced group. 3 students in the spaced group were later excluded from the study as they were unable to complete all 4 sessions. Both groups had comparable baseline suturing skills and improved after microsurgical training, although the groups differed in ways of improvement. The mass-learning group took a shorter duration (54.63min vs 45.71min, $p=0.025$) while the spaced learning group improved on total score (25.13 vs 31.60, $p=0.008$), which took into account spacing and deviation of knots. Satisfaction with the teaching sessions in both groups was statistically similar (8.00 vs 8.47, $p=0.229$).

Conclusion

Microsurgical courses are currently conducted in a mass learning method where participants undergo up to 5 days of continuous training. As practicing clinicians with hectic work schedules, it is often logistically challenging to arrange for prolonged leave to attend such courses. Spaced learning offers a flexible alternative of learning that allows the weaving of learning sessions into the busy schedule of daily work. The results of the study can help pave the way to efficient restructuring of training programs without compromising on learning outcomes. However, it is imperative to take into account the higher likelihood of reduced attendance rate with an increased number of sessions, as reflected by the higher dropout rate for the spaced learning group in this study.

POSITIVE OUTCOMES OF SIMULATION-BASED LEARNING IN CRITICAL CARE PHYSIOTHERAPY

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Background and Aims

Over the past decade, research has focused on enhancing our knowledge and understanding of the role of simulation-based learning in clinical education in Physiotherapy. The High Fidelity Simulation (HFS) with realistic scenarios followed by case discussion sessions is a promising educational tool to prepare students for an acute care clinical experience and can further enhance clinical experience and develop therapeutic practice. Intensive Care Units (ICU) sometimes comprise of junior staff of insufficient experience and clinical exposure to manage critically ill patients. The Physiotherapy Clinical and Crisis Management Simulation Program (PCCMSP) aimed to establish the impact of HFS at improving technical and non-technical competencies for patient management, amongst junior physiotherapists exposed to critically ill patients in Intensive Care.

Methods

Physiotherapists in an acute quaternary hospital in Singapore with 1-2 years of clinical exposure participated in the PCCMSP. Four clinical scenarios were recreated using HFS in the Simulation Training Laboratory from March 2015 to March 2016. Sim-Man 3G and accompanying software (Laerdal Medical, Norway) were used. The HFS mannequin was programmed to exhibit common ICU clinical scenarios and crises situations operated by trained senior physiotherapists. A case discussion was conducted before two volunteer Physiotherapists entered the Clinical Simulation Scenario. Scenarios tested included Cardiopulmonary Bypass Surgery (CABG), Non-Invasive Ventilation (NIV), Respiratory Failure (RF) and Neurosurgery with Extra-Ventricular Drainage (EVD). Pre-post simulation evaluation survey questionnaires, piloted, reviewed and approved using an expert panel of senior ICU physiotherapists, were collected and evaluated using SPSS v23.

Results

A total of 71 questionnaires were received and evaluated for impact on specific technical and non-technical competency domains. Overall, across the 4 scenarios, 97% of the junior physiotherapists reported that the training met their objectives and expectations (98%) for the management of a patient in intensive care. Significant improvements were found for impact on clinical knowledge and assessment skills (CABG: 18% to 82%, $p=0.001$; RF: 22% to 95% $p<0.001$, EVD: 41% to 94% $p<0.001$, NIV: 24% to 94% $p<0.001$) and confidence (CABG: 30% to 65%, $p=0.045$; RF: 37% to 69% $p=0.002$, EVD: 24% to 61% $p<0.001$, NIV: 30% to 47% $p=0.002$). A significant drop in impact on technical skills was reported in 3 of the 4 clinical scenarios (RF: 100% to 84%, 0.041, EVD: 100% to 78%, 0.029, NIV: 94% to 71%, 0.003) with the lowest reported in the NIV clinical scenario. A 100% impact on improvement in analysis and decision skills in all 4 scenarios and no significant changes were reported for chest physiotherapy skills. Participants reported impact on improved communication (90%) and teamwork skills (90%) and believed training would impact on the reduction of clinical errors (94%) in future management.

Conclusion

Using simulation training for critical care physiotherapy such as the PCCMSP can significantly impact toward improvements in clinical knowledge and assessment skills, analysis and decision making skills and provide confidence for the management of an ICU patient in early clinical career. This can further impact on improved communication and teamwork skills and on the reduction of clinical errors amongst junior physiotherapists training in advanced critical care.

EFFECTS ON STUDENT RESULTS AND COURSE EVALUATIONS OF REDUCTION IN TEACHING HOURS IN AN UNDERGRADUATE MEDICAL COURSE

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Background and Aims

The Bachelor of Medicine Bachelor of Surgery (MBBS) course at the University of Tasmania (UTAS) is a 5-year undergraduate degree, with approximately 100 domestic and 20 international students enrolled per year. Years 1-3 feature subject-based basic and clinical sciences teaching organised by organ systems, clinical practice skills, public health, and professionalism, with integration achieved through case-based learning tutorials. To alleviate a perceived overcrowded curriculum, to achieve operating efficiencies, and to provide greater time for students' self-directed learning, staff was directed to reduce teaching hours by 20%.

Methods

In this case study, we evaluated the effects of reduced teaching hours on students' learning outcomes and course evaluations in Years 1-3, comparing the two academic years prior to reductions in teaching hours (2013 and 2014) to two years after (2015 and 2016). Learning outcomes were measured by overall academic results (summative examinations and assignments). Students' opinions were obtained through biannual anonymous Likert-scale (1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree) course-experience questionnaires (eVALUate) administered by the central UTAS Survey Team. This study was approved by the UTAS Social Sciences Human Research Ethics Committee (H0016408).

Results

Teaching hours were reduced by 15%, 13%, and 17% in Years 1, 2, and 3, respectively. There were no statistically significant changes (t-tests, Bonferroni-adjusted significance level of $P < 0.017$) in overall summative assessment scores after the cuts in Year 1 (0.4% increase), Year 2 (1.5% decrease, $P = 0.029$), or Year 3 (1.7% increase, $P = 0.027$). The proportion of students successfully completing the academic year did not significantly change (Chi-square tests) in Year 1 (93.2% before cuts vs. 93.4% after), Year 2 (93.7% vs. 90.2%, $P = 0.173$), or Year 3 (96.3% vs. 96.2%). Average survey response rates were 40%. There was significantly increased agreement ($P \leq 0.001$, Mann-Whitney U tests) on the item, 'The workload in this unit is appropriate to the achievement of the learning outcomes': average Likert scores increased from 2.75 before to 3.07 after the cuts (66% to 87% agreement), 2.70 to 3.04 (68% to 90% agreement), and 2.72 to 3.05 (73% to 91% agreement) in Year 1 Semester 2 (Y1S2), Y2S1, and Y2S2, respectively. There were no significant changes in the other ten survey items, including 'The learning experiences in this unit help me to achieve the learning outcomes', 3.12 to 3.14 (92% to 93% general agreement).

Conclusion

Reduction in teaching hours of 13% to 17% had no statistically significant effect on student learning outcomes, successful completion rates, and student satisfaction with the course, except for improved perception of reasonableness of the workload in three of six units. The transferability of these findings to other contexts and course designs remains to be explored.

Acknowledgements

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WORKPLACE BASED ASSESSMENT - LEARNER AND ASSESSOR PERSPECTIVE LESSONS FROM A 7 YEAR PROJECT

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Background and Aims

Australian Medical Council (AMC) had been conducting "fitness to practice" examination for International Medical Graduates (IMGs) for over 3 decades. The traditional clinical assessments are done by multiple OSCE stations. However performance issues have been raised at the workplace for the IMGs WBA program was implemented in Newcastle to test the feasibility of performance base assessment of IMGs instead of the competency assessment with the OSCE. Subsequently over 400 IMGs have gone through the WBA stream in 7 centres. Assessment is undertaken with a combination of CBD, Mini-CEX, 360 MSF, DOP and ITAs in varying combination in different sites lasting 6 to 12 months.

Our aim is to do a qualitative study on the learner and assessor perspectives on the program, in a longitudinal follow up of the 400 candidates who have completed the program following our first qualitative study.

Methods

A grounded theory-based qualitative analysis of the experiences of 17 candidates and eleven assessors using focus groups, interviews, and surveys were done in Newcastle.

The second part of the study is a national study to evaluate the long-term outcomes of 400 candidates and the feedback from the assessors on the quality of assessments and from the hospitals on the impact of the program on quality of patient care. This survey will be mailed out to the candidates and supervisors by an independent research team based at the University of Newcastle. This second phase of the study is done now built on the experience from the initial qualitative study.

Results

The first study showed a high level of acceptability of the Newcastle WBA program among candidates and assessors. The second study is being conducted now and the results will be available later this year.

Conclusion

The WBA is proven as an effective method of assessment while also providing assessment for learning. The main feedback from the learners were the educational value of the immediate constructive feedback and the integration of IMGs into the health care system. They could work in interprofessional teams and the feedback received from the MSF was valuable in this respect the second study will build upon previous qualitative and financial studies to improve the current programs. The lessons learnt can be generalizable to other assessment programs.

DEVELOPMENT OF VALUES-BASED PRACTICE WORKSHOP TO IMPROVE PATIENT-CENTRED INTERPROFESSIONAL COLLABORATION**¹Onishi H, ²Nomura O***¹International Research Centre for Medical Education, Graduate School of Medicine, The University of Tokyo, Japan, ²Centre for Medical Education, McGill University, Canada***Background and Aims**

Japan is heading toward a super aging society, the main setting of healthcare slowly changes from hospital to home, and interprofessional work among health professionals, care workers and public services becomes more important than ever. In the health care of the new era values-based practice (VBP) focuses not only on the patient's values but also on the values of medical and welfare workers, and shared decision making with patients and their families is the key framework. The aim of this study is to describe the development process of VBP workshop.

Methods

By the procedure of action research, we describe the implementation details and reflection on the evaluation, and review the revised contents after further reflection.

Results

We determined VBP workshop as a three-hour program and set objectives to explain 10 stages of VBP based on the textbook of Fulford et al. and to appreciate the awareness of their own value in interprofessional collaboration. However, it turned out that all of these were hard to reach in 3 hours. After three times of revisions, we revealed points of VBP workshop as follows. The goal should be simply awareness of the values of both the patient side and the health care side. The case should be complicated enough to need interprofessional collaboration. Different professional roles are set up to have different opinions between different professionals. Simulated patients should be prepared to experience dissensus between patient and professional sides.

Conclusion

The expected goal and points of VBP workshop were made clear.

FREE COMMUNICATIONS 7 – GENERAL EDUCATION II

Walking the Footsteps and Feeling the Pain: Patientisation

Jamie Lim, Singapore

The Main Considerations of Faculty and Residents When They Evaluate the Appropriateness of Facebook Posts and Their Negotiation of Conflicting Considerations

May Eng Loo, Singapore

Improving Clinician Compliance with a National Healthcare System Using Peer Review

Julie Quinlivan, Australia

The Challenges of Developing Informal Mentorships in the Medical Field

Heba Mohtady, Saudi Arabia

Improving Preclinical Students' Cultural Competence by Cross-Cultural Service Learning, Critical Reflection and Narrative Interview

Po Wei Chen, Taiwan

WALKING THE FOOTSTEPS AND FEELING THE PAIN: PATIENTISATION

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Background and Aims

In September 2013, the first cohort of students from Lee Kong Chian School of Medicine (LKCMedicine) arrived in Tan Tock Seng Hospital for their Hospital Week (HW) in Orientation: a move to immerse students in their second month in the "real world". The objective is to allow students through experiential learning, walk the patients' footsteps and feel the pain and anxiety that are typical in that journey.

Methods

Each team of 6 students was assigned to one of 5 disciplines: Cardiology, Endocrinology, General Medicine, General Surgery and Rehabilitation Medicine. From each discipline a physician and a non-physician (nurse or therapist) were co-supervisors, moving away from the traditional all-physician-orientation. Within guidelines of patient and student safety, supervisors planned a 5-day program that allowed students to experience the typical patient's journey in their discipline. Supervisors were reminded not to teach doctoring and clerkship clinical skills.

Supervisors were encouraged to debrief students at the end of every day. Students were reminded to approach supervisors if they felt uncomfortable about any aspect/activity. The outcomes: (1) all teams would put up a 5-minute performance on the theme "My Patient's Journey" on Day 5 and (2) every student would complete a 500-word reflection that supervisors would review.

Results

Led by a Cardiologist and an Advanced Practice Nurse (APN), the Cardiology students started at the Emergency Department (ED) triage area. On Day 1, one student was "patientised" i.e. immersed into patient's role: dropped off at triage, diagnosed with a heart attack, whizzed into the resuscitation area, had a 12-lead ECG performed, monitors attached, spoken to by the cardiologist about consent for treatment, and rushed to the Invasive Cardiac Lab (ICL) accompanied by 5 teammates, for a coronary angiogram. For the rest of the week, the other students volunteered to be "patientised": wore patient's hospital attire, hooked to multiple cables and devices in Coronary Care Unit, assisted for personal hygiene needs e.g. bathing, had cardiac echocardiogram performed, physically restrained for being "uncooperative", ate special cardiac diet and received counselling from Pharmacist, Dietician and Physiotherapist.

The supervisors debriefed the students at the end of each day. The students were asked to write daily reflections and shared their "Ah-Ha" moments. Quoting Student Z, "... I think there is something precious in being able to experience what your patients feel so you will empathize with them and understand their pain." Team performances on Day 5 reflected the students' understanding of their patient's experiences: positive and negative. Overall, HW received overwhelming positive feedback from students, supervisors and faculty and is now a signature program in LKCMedicine.

Conclusion

Active learning in almost-real situations shifted students away from passive observation to committed participation. "Patientisation" during HW created a potentially transformational experience for students as they received multi-disciplinary but often fragmented care amidst complex hospital processes, and information from a multitude of healthcare professionals in language that was not layperson friendly. A qualitative study of student reflections will be undertaken later to determine if the HW learning objective is achieved.

THE MAIN CONSIDERATIONS OF FACULTY AND RESIDENTS WHEN THEY EVALUATE THE APPROPRIATENESS OF FACEBOOK POSTS AND THEIR NEGOTIATION OF CONFLICTING CONSIDERATIONS

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Background and Aims

Studies on physicians' and the public's perceptions of hypothetical online postings found that instances of patient privacy violation and negative comments about colleagues in healthcare were considered unprofessional. However, the reasoning and considerations behind the perceptions have not been explored in depth. This study aimed to examine the main considerations and possible conflicting considerations of faculty and residents when they evaluate the appropriateness of Facebook posts, and how they might negotiate any conflicts.

Methods

A hundred and eighty two faculty and residents (36.8% response rate) from the NHG-AHPL Residency were randomly presented 3 out of 6 Facebooks posts, rated their appropriateness, and provided explanations for their ratings. The Facebook posts were existing inappropriate posts identified from online searches. Responses were coded for main considerations. Each response containing conflicting considerations was further analysed to describe the conflict as well as the way it was negotiated.

Results

All posts were rated as either 'Very inappropriate' or 'Inappropriate' by 55% to 89% of respondents. Post 5 had the most number of respondents with conflicting considerations (n=15), followed by Post 4 (n=13). The number of respondents with conflicting considerations for the other posts ranged from 1 to 6. We examined in detail the conflicting considerations for these two posts: Post 4 which contains harsh language on a controversial topic posted by a medical student and Post 5 which contains an educational message with insensitive language posted by a junior doctor.

The main consideration for Post 4 was 'freedom' (n=33, 30%) and for Post 5 was 'confidentiality' (n=38, 26%). For Post 4, twelve respondents considered that the poster should have the freedom to express his personal opinion versus a variety of other considerations. For Post 5, fourteen respondents considered that the poster has an educational purpose versus other considerations. To negotiate the conflicting considerations for Post 4, five respondents prioritized professionalism over freedom of expression. However, two respondents prioritized the consideration that the poster was not posting within a medical context or in the capacity of a medical student over considerations of professionalism. To negotiate the conflicting considerations for Post 5, fourteen respondents reasoned that the educational message of the post and the poster's good intentions need to be subjected to (or at least seen in the light of) considerations of confidentiality, language, professionalism and respect.

Conclusion

Despite similar evaluation of inappropriateness, faculty and residents take into account a wide range of considerations. These considerations tend to conflict with one another when the respondents considered freedom of expression of the poster and the educational purpose of a post. Understanding physicians' negotiation of conflicting considerations provides insight into their outworking of professionalism in the social media context. This understanding provides a platform for further discussion on social media guidelines for physicians. Future studies could explore and compare the public's considerations.

IMPROVING CLINICIAN COMPLIANCE WITH A NATIONAL HEALTHCARE SYSTEM USING PEER REVIEW

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Background and Aims

Australia's Medical Benefits Scheme (MBS) and Pharmaceutical Benefits Scheme (PBS) provide access to a range of medical services, lower cost prescriptions and free care for public patients in public hospitals. The MBS provides free or subsidised treatment by health professionals such as doctors, specialists, optometrists, and in specific circumstances, dentists, and other allied health practitioners. Practitioners bill MBS for their services. The Professional Services Review (PSR) was established by the Australian government to monitor compliance and appropriate practice in relation to the MBS and PBS. The PSR relies on a postgraduate educative process involving peer review.

The aim of this study was to report outcomes of the postgraduate educative process to educate clinicians referred to the PSR about inappropriate practice.

Methods

An audit was undertaken of outcomes of the PSR in the 2016/2017 financial year. For each referred clinician, a random sample of medical records relating to any items of concern were obtained from the MBS and PBS database. Clinicians were asked to provide the medical records of patients who were seen on the randomly selected dates. Notes were reviewed by a peer practitioner who provided feedback. Clinicians were offered a practice visit by the Director of the PSR where examples of inappropriate practice were discussed and educational opportunities to improve their care outlined. A report was subsequently written to each practitioner outlining the areas of concern identified in their practice. Clinicians were then provided with an opportunity to reflect upon their practice, make changes and provide a written response a month later. At this time, the Director made a decision that a finding of inappropriate practice was unlikely to be made, in which case the matter was dismissed. Alternatively the Director made a decision that clinical peers might make a finding of inappropriate practice and the matter was either settled by negotiation or by referral to a Committee of peers. Sanctions for clinicians found to have engaged in inappropriate practice included repayment of MBS funds and disqualification from all or part of the MBS or PBS system for between 3 to 5 years. Outcome data in terms of changes in clinician behaviour, review findings and recoveries are presented as numerical data.

Results

In 2016/2017 financial year, 81 clinicians were referred for review. Of these, 72% were general practitioners and the remaining 28% were specialists, other medical practitioners, midwifery and allied health clinicians. As part of the peer review process, 80 clinicians made submissions. Of these, 75 (92%) electively enrolled in courses or sought help to improve their record keeping. Additionally, 63 (78%) voluntarily made changes to their hours of practice or practice policies and procedures. As a consequence of the peer review process, funds of \$10,407,569 were recovered by the Australian government. Of note, 12 (15%) clinicians were referred to the Australian Health Practitioners Regulation Agency and 6 (7%) were referred for major non-compliance (fraud) investigation.

Conclusion

A postgraduate peer review process can encourage voluntary changes in behaviour and assist clinicians to remain compliant with appropriate billing and prescribing practices.

THE CHALLENGES OF DEVELOPING INFORMAL MENTORSHIPS IN THE MEDICAL FIELD

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Background and Aims

Background:

In the medical field, mentoring is reported to be beneficial to students and doctors at all career stages. Informal mentorships are established based on free will and mutual interests between both mentors and protégées. They eventually lead to significant personal and professional development. Given that informal mentorships are the only form of mentoring available in several traditional medical schools, they could provide a viable alternative to formally assigned mentorships. However, informal mentoring relationships are not always smooth processes and they might be hindered by obstacles and barriers. Exploring such factors is crucial to improving and optimizing informal mentoring.

Aims:

To identify barriers which hinder the development of informal mentoring relationship within the medical field.

Methods

We conducted a literature search within the search engine Thomson Reuters Web of Knowledge / Web of Science Core Collection. It included studies reporting on factors contributing to informal mentorship relationships that were conducted in a medical education or medical work context. From these studies, barriers to establishing effective informal mentorship relations were the main focus.

Results

According to our review, barriers can be found on either side of the partnership. Barriers on the part of protégées include over-dependency, intense work, conflicts of interest, and having multiple mentors. Studies suggested that protégées might develop over-dependence on their mentors, extending it to extraprofessional concerns. A heavy workload is a potential impediment to the development and preservation of informal mentoring relationships. Junior doctors may feel a conflict of interest between their own expectations with regard to career advancement and research output on the one hand, and clinical work expected from them on the other hand. In cases where protégées have more than one informal mentor, there might be conflicting opinions and schools that protégées have to navigate and choose from. An important barrier on the part of mentors includes uneasy ties between mentoring and assessment, for example when they have to combine their role of being a mentor with their role of being a formal supervisor.

Conclusion

To overcome the above mentioned barriers, protégées must be reminded that they themselves are eventually accountable for their own development. This helps mitigate the potential risk of over-dependency. Workload, responsibilities, and conflicts of interest have to be considered to establish proper informal mentorships. Similarly, mentoring and assessment tasks of the mentors should be finely demarcated. Finally, having only one informal mentor is recommended, and might more beneficial. In informal mentorships, there are certain barriers to the process that relevant parties should be aware of. Avoidance and overcoming these barriers is required to develop effective informal mentorships.

IMPROVING PRECLINICAL STUDENTS' CULTURAL COMPETENCE BY CROSS-CULTURAL SERVICE LEARNING, CRITICAL REFLECTION AND NARRATIVE INTERVIEW

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Background and Aims

To achieve the goal of holistic care, cultural competence is a crucial skill, which helps us cross the barriers of ethnic, regional, health beliefs and environmental differences and communicates successfully with patients. However, current curriculums in Taiwan are compulsory and take place before the clerkship; so most students are not aware of the importance and thus lack motivation. Therefore, we developed a service-learning program to enhance students' cultural competency. The initial impact of students' engagement will be examined in this article.

Methods

The main elements of the programs were (1) cross-cultural health education, (2) narrative interview which emphasizes listening skills, and (3) critical reflection to reinforce participants' learning experiences. In the 3-day didactic lecture, there were nine related education sessions and all of them designed in either workshop or role play simulation exercises. Then during the 4-day immersion at a remote tribe in Eastern Taiwan, there were two 2-hour health educations, two 3-hour narrative interviews with the local residents, and everyday group discussions.

A qualitative research design was used to examine the impact of the program. Participants were asked to write daily critical reflections (which would be replied by author), an overall review, and a self-evaluation sheet. Reflections and reviews were analysed using thematic analysis while the reflective ability was scored using a previously validated rubric to entrust the results. Self-evaluation sheets were used to examine their overall satisfaction and attitude toward each element in this program.

Results

In a total of eleven participants, nine were preclinical; seven were nursing students; two were medical students; one was absent in the didactic lecture. All daily reflections, overall reviews and self-evaluation sheets were returned.

Self-evaluation sheet based on a five-point scale showed very high satisfaction score (4.72). The scores of knowledge, skill and attitude toward cultural competence were 4.27, 4.13, and 4.77 respectively. The scores in the aspect toward critical reflection were 4.30, 4.43, and 5.00 relatively. The average reflective ability score was 4.18 (3.79-4.56, on a six-point scale).

The main learning perspectives extracted from critical reflections and reviews are as follows: a realisation of the importance of cultural competence in health promotion and daily life, awareness of stereotype, and knowing how to critically reflect while in need.

Conclusion

Regarding the high satisfaction level and increasing concern of cultural competence within participants, the cross-cultural service learning program with critical reflection and narrative interview is worth a try at other medical schools.

FREE COMMUNICATIONS 8 – TECHNOLOGY ENHANCED LEARNING II

Using New Technologies and Best Evidence to Unburden Medical Schools' Admissions and Student Affairs Offices, Without Sacrificing Diversity or Predictive Validity

Christopher Zou, Canada

An Ethnographic Study of Health Information Technology Use in Three Intensive Care Units

Elise Paradis, Canada

Culminating Projects - Academic Innovation to Improve Pedagogic Competence

Anbarasi K, India

Three Dimensional (3D) Printed Knee Joint Simulator for Medical Education

Bohong Cai, Singapore

'It's on my iPad': Mobile Devices to Support and Augment and Transform the Learning Experience of Medical Students in the Clinical Workspace

Jagrati Chopra, United Kingdom

Technology in Medical Education: Facets of Using Google Classroom in Pharmacology

Carolynn Pia Bagain, Philippines

USING NEW TECHNOLOGIES AND BEST EVIDENCE TO UNBURDEN MEDICAL SCHOOLS' ADMISSIONS AND STUDENT AFFAIRS OFFICES, WITHOUT SACRIFICING DIVERSITY OR PREDICTIVE VALIDITY

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Background and Aims

Admissions offices are tasked with selecting those applicants who, for healthcare system needs and institutional reputation, will best perform in the future; for societal demands and political validity, best meet demands of diversity; for faculty and student sanity, will not be the "problem children" in student affairs. Admissions offices therefore gather a plethora of information, using grade point average (GPA), standardised test scores, interviews, reference letters, personal statements, and holistic file review. Even methods partially or wholly debunked as predictors remain commonplace, with demands so great that admissions personnel stagger under the burden, often believing the doctrine of "no pain, no gain". With technological advancements re-shaping assessment, and with diligent adherence to data, is it possible that demands upon admissions offices may be better served by applying fewer, rather than more, resources?

Methods

The mission of New York Medical College - School of Medicine (NYMC-SOM) is committed to the underserved and disadvantaged. NYMC-SOM applicant numbers represent approximately 20% of all U.S. medical school applicants (9,096 completed applications in 2015); under-represented in medicine (URM) status of applicants is defined by the NYMC-SOM admissions committee, and comprise approximately 20% of all admitted students. Using NYMC-SOM 2015 cohort, a series of simulations examined the impact of different selection formulas on predictor variable mean scores - GPA, Medical College Admissions Test (MCAT), multiple mini-interview (MMI), CASPer - and 12 indices reflecting diversity (race, ethnicity, sex, SES) on applicants invited to interview. We simulated two hybridised mechanistic-holistic approaches, with formulae generating the top 6,500 files for review: weighted approaches, using three different weighted formulae of the three screening tests (GPA, MCAT, CASPer), and threshold-optimisation approaches, where thresholds were set for two of the three screening tests, and "threshold survivors" were rank-optimised by the remaining, third screen. Simulations were repeated with top-ranked file reviews reduced 20% to 5,200. All simulated results were compared to the benchmarks of the actual invited interviewees.

Results

For NYMC 2015, the best fit solution for predictive validity and diversity indices were weighted formula 25% GPA - 25% MCAT - 50% CASPer, and two threshold-optimisation approaches optimising either GPA or CASPer, when reviewing 6,500 files; and the threshold-optimisation of CASPer, when reviewing 5,200 files. For the latter, predictor variables of GPA/MCAT held steady with benchmarks (3.64 to 3.65, 510.6 to 511.0 respectively), predictor variables of CASPer/MMI were markedly higher than benchmarks ($z=0.72$ to $z=0.31$, 7.17 to 7.09 respectively), and of the 12 diversity indices, the overall mean change was negligible, being 1% better than benchmarks. For the threshold-optimising CASPer approach, moving from 6,500 to 5,200 files reviewed resulted in less gains for diversity (only 1% gain over benchmarks) and stronger gains to predictive validity.

Conclusion

New assessment tools of personal competencies promote diversity better than traditional measures; when implemented and applied in an evidence-driven fashion, it is possible, as demonstrated with the applicant cohort at NYMC-SOM using GPA, MCAT and CASPer, to maintain or exceed benchmarks in diversity and validity while reducing the burden on admissions offices and committee members - less pain, more gain.

AN ETHNOGRAPHIC STUDY OF HEALTH INFORMATION TECHNOLOGY USE IN THREE INTENSIVE CARE UNITS

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Background and Aims

To identify the impact of a full suite of health information technology (HIT) on the relationships that support safety and quality among intensive care unit (ICU) clinicians.

Methods

A year-long comparative ethnographic study of three academic ICUs was carried out. A total of 446 hours of observational data was collected in the form of field notes. A subset of these observations-134 hours-was devoted to job-shadowing individual clinicians and conducting a time study of their HIT usage.

Results

Significant variation in HIT implementation rates and usage was noted. Average HIT use on the two "high-use" ICUs was 49 percent. On the "low-use" ICU, it was 10 percent. Clinicians on the high-use ICUs experienced "silo" effects with potential safety and quality implications. HIT work was associated with spatial, data, and social silos that separated ICU clinicians from one another and their patients. Situational awareness, communication, and patient satisfaction were negatively affected by this siloing.

Conclusion

HIT has the potential to accentuate social and professional divisions as clinical communications shift from being in-person to electronically mediated. Socio-technically informed usability testing is recommended for those hospitals that have yet to implement HIT. For those hospitals already implementing HIT, we suggest rapid, locally driven qualitative assessments focused on developing solutions to identified gaps between HIT usage patterns and organisational quality goals.

CULMINATING PROJECTS - ACADEMIC INNOVATION TO IMPROVE PEDAGOGIC COMPETENCE

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Background and Aims

A culminating project is designed to be completed by students at or near the course end to demonstrate their learning and understandings in an experiential way.

Principle research questions

1. Do culminating projects inculcate pedagogic skills and enhance academic success?
2. How to develop teaching-learning resources and assessment tools using a team approach that goes with students' interest?

Aim

To apply Student driven, Realistic, Metacognitive, and Collaborative [SRMC] framework for developing the culminating project and explore how this plan inculcates pedagogic skill and academic achievement in undergraduate climate.

Methods

An experimental research was designed to implement culminating projects (CPs) for undergraduate dental students. By using total population sampling method, students in the internship phase (n=68) were clubbed into eight teams, comprising members with mixed abilities/skill. The team members carefully designed the action plan by framing an educational concept or questions related to instruction/assessment process and translated the concept into a project that can be carried out collaboratively using the complementary skills of each member. The project outcome was set at the high-performance level, and duration for completion was fixed as six months. The teams were asked to submit portrayal (project goal, background info, product info) of their project for qualitative analysis. "Key performance indicators (KPIs)" was developed for assessment purpose (Critical appraisal of the project title, Competences demonstrated, Implantation process, and End project analysis).The internal validity is checked with three risk factors (external forces, attrition, and monthly review report). Three subject experts involved in the assessment.

Results

From the qualitative analysis of seven final projects, we recognised three dynamic concepts.

1. Students generated new ideas in teaching-learning, assessment resources like:

Gamification in assessment using simple software technique, four pictures = one disease/drug - an assessment template, Cloze test model, Prototype of instruments to facilitate experiential learning, Animated video songs (creative media for learning and motivation), a 2D representation of complex theoretical concept for simple understanding, Storyboards.

2. Students invested their natural interests in finding a solution for real world problems like bookish learning and traditional assessments. The outcome was measured by testing how these themes and resources were utilised by junior students to support their academic achievements.

3. The result is capitalised on teamwork; Students challenged the conflicts rather than persons. Internal validity test report.

Pre-planned daily schedule (time management) and non-academic priorities were the outside events that affected students' commitment.

There were no dropouts in the groups. Lack of team cohesiveness, intolerance to failure, uncertainty, and ambiguity in planning step were the few threats shared by team members in the early phase but sorted out by their efforts.

Conclusion

Culminating projects proved to be an effective pedagogic practice for students to demonstrate their meta-cognition and resolve the pitfalls in teacher-centered instructional resources. As we can see from our results, CPs symbolises a valuable approach for introducing teamwork, innovation and academic achievement in health profession education.

THREE DIMENSIONAL (3D) PRINTED KNEE JOINT SIMULATOR FOR MEDICAL EDUCATION

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Background and Aims

A sound foundation in human anatomy is essential for the training of medical professionals whereby knowledge of normal human structure and function can form a basis for the understanding of pathology and the management of clinical problems. Over the past 30 years, there has been a worldwide trend towards significant reduction of time allocated to the learning of anatomy. As a consequence medical educators, clinicians and medical undergraduates are facing an increasing challenge to grasp and comprehend adequate anatomical knowledge to serve the needs of the profession. As a way of circumventing this dilemma, innovative technology as an aid to improve the effectiveness of teaching anatomy is becoming increasingly important. The aim of the present study is to apply emerging technologies in the teaching of a complex anatomical subject, namely the knee joint, by designing and manufacturing (3D printing) a functioning knee joint simulator to facilitate learning. The effectiveness of the simulator on education has been evaluated by randomised control study.

Methods

For the purpose of this study, using medical imaging software, computed tomography (CT) data of the knee joint was converted to a 3D digital model. The CAD file was then printed with the EOS 3D printer using nylon powder. 'Ligaments' were added to this model to create a functional knee joint simulator that is able to replicate the flexion-extension and locking-unlocking movements seen in a normal joint. In order to evaluate the effect of the simulator on medical education, two groups of medical students were enrolled in an anatomy class to learn the relevant knowledge about the bone-ligament relationships of knee joint to function. The 3D printed knee joint simulator was used as learning aids for one group while the other group learned the same content through the conventional didactic presentation. After the class, all the students were subjected to an assessment to evaluate their understanding of the course materials. The outcome of the questionnaire was subjected to statistical analysis.

Results

The 3D printed functional knee joint simulator was able to demonstrate the normal movements including flexion-extension as well as locking-unlocking, as expected in a normal knee joint. In the randomised control study, the participants using 3D printed simulator as the learning aids achieved better learning outcomes than the participants who were learning without the tangible models. Moreover, there appeared to be gender-related differences in the use of the 3D printed knee joint simulator to facilitate learning.

Conclusion

The use of medical imaging data and 3D printing is a useful method to design and manufacture a physical simulator for effective education of complex anatomical concepts in a significant way.

'IT'S ON MY IPAD': MOBILE DEVICES TO SUPPORT AND AUGMENT AND TRANSFORM THE LEARNING EXPERIENCE OF MEDICAL STUDENTS IN THE CLINICAL WORKSPACE

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Background and Aims

Integration of mobile technology in the delivery of medical care is key for improving quality and efficiency. Mobile devices are prevalent in the clinical environment and the digital workspace is becoming an integral part of medical education and learning experiences of medical students. The success of mobile technology as an adjunct to medical education has been well documented. Embracing digitalisation of our healthcare system requires a significant cultural change, headed by the doctors of tomorrow. The aim of this study was to explore how mobile devices support the teaching and learning experiences of medical students during clinical placements.

Methods

The methodology involves students acting as co-researchers in investigating their own mobile and digital media practices. Students from the Bristol MBChB programme commencing their first year of clinical medicine at two NHS hospital trusts were invited to take part in the study. 28 students participated in the study, using a device of their choosing or an iPad mini provided by the medical school. Data was collected over a period of 10 months from diary entries (150+ mix of written, verbal and video), semi-structured interviews (16) and focus groups (3). All data was transcribed verbatim and inductive quantitative analysis was used to identify emerging key themes. All co-researchers analysed a sub-set of data to generate a coding framework. The remaining data was analysed by 3 groups comprising a member of staff and students using the coding framework. One author coded all of the data.

Results

Emerging themes and subthemes included immediacy and efficiency to augment real time learning, availability of new opportunities and changes in learning strategies over time. We recognised constraints of mobile learning in the clinical workplace as well as general acceptability by health practitioners, patients and peers. Mobile technology augmented real time learning in the clinical workspace and increased efficiency. Mobile devices allowed personalised learning and provided flexibility of learning space and students stressed the importance of syncing resources between devices. Participants who engaged with the project steered towards using technology as the basis for their learning and benefited from this change in learning strategy. Collaboration, both formal and informal, between peers was also noted. Use of devices heavily depended on the perception and acceptability within the clinical environment, both by patients and healthcare professionals.

Conclusion

Mobile devices have the potential to enrich learning experiences for students that adopted devices as they may stay in their learning. As the healthcare service moves towards a digital era, doctors will need to be prepared for a digital work space where mobile learning is becoming a core skill. Offering medical students the opportunity to explore mobile learning early prepares the doctors of tomorrow to succeed. All parts of medicine and medical education need to embrace change. Faculty support of staff and students in mobile learning practices is vital for the successful integrating mobile learning within medical curricula. Further research is required to understand the potential of mobile learning in medical education.

TECHNOLOGY IN MEDICAL EDUCATION: FACETS OF USING GOOGLE CLASSROOM IN PHARMACOLOGY

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Background and Aims

The use of technology in education is the manner of using technical processes, methods, or knowledge in implementing different teaching-learning strategies. The challenge of teaching Generation Z students drives professors to adopt technology-driven teaching platforms to provide better learning experiences. The Pharmacology Department of the UERMMMCI College of Medicine is incorporating digital technology in its activities to provide more effective and efficient ways of teaching. In previous years, e-mail based instructions, portal uploads and the creation of a Facebook page, were adopted. But because of limitations of these mediums in carrying certain types of information, uploading videos, and posting trigger questions for interactive learning, the Google Classroom was recently applied as a platform to facilitate digital production and streamline educational workflow. Furthermore, it facilitated paperless communication between teachers and students. The Google Classroom allowed teachers to create classes, post assignments, organise folders, and view work in real-time. That this application is downloadable for free by end-users is another advantage.

The aim of this qualitative study is to understand the different perspectives of the end-users of the Google Classroom, the teachers and the students, on how the application is affecting the learning experience in Pharmacology.

Methods

Ethics Review Committee approval for the study was obtained. Six participants: three faculty members of the department and three second year Medical students of Pharmacology, were invited to participate in the study and informed consent was obtained. A set of four questions was used during the face-to-face semi-structured interview, scheduled at the convenience of both parties. Exploratory and probing questions were asked to facilitate the elaboration of experiences. The perspectives of both the teachers and the students were explored. The phenomenological approach was applied to provide a rich textured description of the experiences of the participants. Data analysis was based on the review of interviewer field notes and the transcript of the interview to reveal over-riding themes. Data triangulation was also done.

Results

By thematic analysis, the narratives of the participants were categorised into three: Means of Communication, Facilitation of Learning, and Tool for Storage and Organising Data. While there were some negative points extracted such as: physical barriers of non-availability of internet connection and proper gadgets to access the application, overall, participants narratives revealed perspectives that described the applicability of the Google Classroom in Pharmacology in the three categories mentioned.

Conclusion

In conclusion, teachers and students perspectives are similar in describing the Google Classroom as an acceptable and useful platform in sharing information e.g. short lectures, video clips, and audio clips; in posting comments, feedbacks, and announcements; in updating the students about the lessons and the teachers about the students' progress. Its continued adoption in the teaching of Pharmacology in our setting is recommended. Further qualitative and even quantitative studies are recommended to determine its applicability in other Medical subjects and measure its effectiveness in enhancing learning experiences.

E-POSTER PRESENTATION SESSION 1

- D1001** **Impact of a Novel Learning Tool on Educational Outcomes in Orthopaedics Residents: A Prospective Pilot Study**
Jing Yuan, Singapore
- D1002** **Impact of Library Usage on Academic Learning Process by Medical Students at Ras Al Khaimah Medical and Health Sciences University- A Comparative Questionnaire Study**
Aruna Chanu Oinam, India
- D1003** **The UERMMCI Pharmacology Students' Perception of the Objective Structured Examination (OSEP) as an Assessment Tool**
Chiara Marie Dimla, Philippines
- D1004** **Are General Surgical Residents Happy with Their Training Program?**
Ee Ling Serene Tang, Singapore
- D1005** **Factors Related to Medication Errors Among Registered Nurses in an Acute Hospital, Singapore**
Fang Qi Koh, Singapore
- D1006** **Teaching Medical Error Disclosure Using Simulation**
Jun-Bean Park, South Korea

D 1001

IMPACT OF A NOVEL LEARNING TOOL ON EDUCATIONAL OUTCOMES IN ORTHOPAEDICS RESIDENTS: A PROSPECTIVE PILOT STUDY

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Background and Aims

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.

Methods

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=15) 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 on their spine knowledge, OT skills, levels of confidence and stress during the spine posting.

Results

There is a significant improvement in knowledge scores pre- and post-application of the educational primer tool. There is also a significant improvement in level of confidence in performing during the spine rotation. However, there is no difference in stress levels experienced by the residents. Most residents are not able to carry out simple operations under supervision or independently. Residents also reported low levels of familiarity with spine procedures (mean 3.00±0.71), poor spine knowledge (mean 5.00±0.50), poor skills (mean 3.50±1.66), a low level of confidence in ability to perform in spine rotation (mean 3.75±1.79), and a high level of stress (mean 6.75±1.48).

Conclusion

This pilot study shows promising results in improving learning outcomes for residents during the spine rotation, in terms of knowledge scores and levels of confidence.

D 1002

IMPACT OF LIBRARY USAGE ON ACADEMIC LEARNING PROCESS BY MEDICAL STUDENTS AT RAS AL KHAIMAH MEDICAL AND HEALTH SCIENCES UNIVERSITY- A COMPARATIVE QUESTIONNAIRE STUDY

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Background and Aims

The undergraduate medical curriculum is oriented towards training the students to undertake the responsibilities of a physician. During the training period, adequate emphasis is placed on inculcating logical and scientific habits of thought; clarity of expression and independence of judgment; and ability to collect and analyse information and to correlate them.

At Ras Al Khaimah Medical and Health Sciences University (RAKMHSU), Biochemistry a basic medical science subject is taught in the 1st year of 5 years medical course with vertical interdisciplinary interaction with all subjects which needs to be taught and learned adequately by the students to be related to clinical case or clinical problem in medicine and future diagnostics so that they can practice confidently and skilfully in the community.

Methods

Based on these facts study was done to know the extent of usage of library resources by the students and the impact of study materials on their preparation for examination. It was a comparative cross sectional study included 100 and 80 1st and 2nd year students who had successfully completed Biochemistry course. The purpose of the study was explained to all students [participants]. Information was collected on a pre-designed, pre-tested and self-administered questionnaire. The questionnaire was validated by the senior faculties and pre tested on students who were not involved in the study.

Results

The study results showed that 80.30% and 93.15% of 1st and 2nd year students have the clear idea of course outline given in course handout or study guide. We also found a statistically significant number of students agreed that they were benefited from the practical session and writing notes in the class hour.

A high percentage of students [50% and 62.02%] disagreed that that reading only the handouts is enough for their examination as compared to other students. The study also showed that only 35% and 41% of students visited the library on daily basis for the learning process, around 65% of students were using lecture notes and text books as an tool for learning and to understand the subject and 45% and 53% of students used the library resources [Recommended text books] compared to online sources before the examinations. The results presented here show that students perceived that e-learning resources like power point presentations along with text book reading using SQ4R technique had made a positive impact on various aspects of their learning in Biochemistry.

Conclusion

Various studies have shown the use of library by students has overall positive impact on learning process. A study has shown that, in medical field use library enhances the outcome and medical students are better equipped to treat the patient. But it's also true that use of library use has been in decline which will impact the knowledge aspects and outcome. In conclusion, a student has to be taught how to use the library as learning tool apart from lecture handouts.

D 1003

THE UERMMCI PHARMACOLOGY STUDENTS' PERCEPTION OF THE OBJECTIVE STRUCTURED EXAMINATION (OSEP) AS AN ASSESSMENT TOOL

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Background and Aims

The teaching of Pharmacology to Medical school sophomores is designed to prepare the students in prescribing drugs on a rational basis. Teaching methods are multiple such as lectures and small group discussions (SGD). Student evaluation includes written examinations, laboratory grades and the preceptorial grades from the SGDs.

During SGDs, the process of rational use of medicines as provided by the "WHO Guide to Good Prescribing" is applied. A hypothetical case is given and the small group comes up with a diagnosis, therapeutic goals, non-pharmacologic and pharmacologic interventions. Based on the efficacy, safety, suitability and cost of drugs, the group decides on the right agent and writes the prescription for the case. The preceptorial grade of each student is then based on the student's performance during SGDs following a rubric. Because the evaluation of individual performance poses a challenge in SGDs, the OSEP was initiated to provide an additional and objective means of assessment. This study aims to determine the students' perceptions on the OSEP, as an additional assessment tool: 1) its effectiveness in evaluating individual performance in Pharmacology, 2) its content, and 3) how it is conducted.

Methods

Ethics Review Committee approval for the study was obtained.

During the OSEP, the student underwent an oral, one-on-one examination. The trained examiner administered the structured set of questions and graded the student based on a standard rubric similar to what is done in OSCE (Objective Structured Clinical Examination).

The students' perceptions of the OSEP were collected through a survey tool that was previously pilot tested and refined. The students were asked to ascertain their level of agreement to sixteen statements using a Likert Scale from one to four: "strongly disagree", "disagree", "agree" and "strongly agree". The median score for each statement and the proportion of respondents with "positive perception" were computed. Only the responses of the participants who gave informed consent were included in the study.

Results

In general, our study shows that close to 100% of the students perceive the OSEP, including its content and conduct, as an effective assessment tool. The median score for fourteen statements is either "4" = "strongly agree" or "3" = "agree" which corresponds to a positive perception and the median score for the other two statements also describes a positive perception with the median score at "2" = "disagree".

Conclusion

In conclusion, the students perceive the OSEP as an effective assessment tool in Pharmacology. Furthermore, the perceptions on its content and conduct are 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.

D 1004

ARE GENERAL SURGICAL RESIDENTS HAPPY WITH THEIR TRAINING PROGRAM?

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Background and Aims

Singapore introduced the residency system in 2010, and has 3 general surgical (GS) residency programs. General surgery is a stressful occupation. The training years during residency are even more so, as residents juggle lack of sleep, arduous training programs, long working hours, on top of their personal lives.

Methods

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

Results

There were 36 responders to the survey (92.3% of all residents). 30 of 36 residents (83.3%) were satisfied with the residency program. Camaraderie was the prime reason why residents were satisfied. 23 of 36 residents (63.9%) wanted to improve the residency in various ways, most significantly in terms of operative load.

Despite GS residency being a demanding training, strong relationships resulted in high satisfaction (83.3%). Suggestions for improvement were highly variable with a small dominant 11.1% mentioning operative load. It is highly probable that residents have come to accept these variables as painful but necessary. We have since set operative goals for residents in subspecialty teams.

Conclusion

The general surgical residents in our training program are generally satisfied with our residency program. Maintaining camaraderie among the residents is key in keeping residents satisfied.

Fostering and reinforcing camaraderie is important in helping to build up a sense of belonging to the general surgical residency program. No residency is perfect and continual feedback and change to improve the residency is important to keep it relevant to the needs of the residents.

D 1005

FACTORS RELATED TO MEDICATION ERRORS AMONG REGISTERED NURSES IN AN ACUTE HOSPITAL, SINGAPORE

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Background and Aims

Medication errors remain a major concern in the healthcare setting. As nurses spend a sizable proportion of their time serving medication, it would be essential for them to adhere to standards and protocol to minimise medication errors. Literature has identified adverse outcomes associated with medication errors, including increased mortality and morbidity; increased duration of hospitalization, hence increased hospital fees and increased episodes of emotional turmoil experienced by the involved

parties. Nurses typically undergo rigorous training in safe medication administration based on guidelines derived from evidence-based practices, standards and policies set by hospitals and relevant health authorities. Despite efforts aimed at minimising medication errors, the trend of medication errors incidences has not improved and continues to be problematic. There are limited nursing studies investigating in-depth the contributing factors that lead to medication errors among nurses (Salmasi, et al., 2015). This study aims to explore the perceptions of nurses on medication errors and possible contributing factors that affect safe medication administration. Additionally, the study aims to gain feedback from nurses to identify their learning needs related to medication administration.

Methods

To identify the extent of the problem, data was extracted from incident reports of medication administration errors involving nurses over a 12 month period from Jan-Dec 2016. Subsequently, a total of 585 registered nurses working in in-patient settings within Khoo Teck Puat Hospital will be invited to complete self-administered questionnaires which have been modified from the tool developed by Gladstone (Gladstone, 1995). This questionnaire includes 4 main components: (1) nurses' perceptions of when medication errors occur; (2) nurses' perceptions of medication errors under different clinical scenarios (3) nurses' perceptions of medication error reporting and, (4) nurses' perceptions of the adequacy training received on medication administration safely.

Results

According to retrospective findings from the incident reports, out of 136 actual medication errors reported under general wards, 118 errors were made by nurses. Most common errors reported shown: omission error (27), wrong dose (18), wrong rate (13), and wrong drug (11). Collection of questionnaires and analysis of results are still ongoing, but is expected to provide significant results to present studies.

Conclusion

Medication administration is a complex issue that requires staff to be equipped with cognitive, affective and psychomotor skills to ensure the delivery of safe and competent care. It is anticipated that findings from this study will aid hospitals to make changes to physical environments, system & process workflows, and training to support nurses in reducing medication errors. Safety culture concepts should be instilled and all staff encouraged to report errors without fear to safe guard patients' outcome. This study will provide strategies and ideas for nursing curriculum developers in preparing nurses adequately. Further research is needed to address psychosocial aspects of the staff involved in medication errors.

D 1006

TEACHING MEDICAL ERROR DISCLOSURE USING SIMULATION

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Background and Aims

Disclosure of medical errors to patients and their family is essential to maintaining trust and is an important part of patient-centred 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.

Methods

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 analysed 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%)

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.

E-POSTER PRESENTATION SESSION 2

- D1007** **Experience of our Journey Through the Inaugural Medical Grand Challenge 2017**
Wenqi Chiew, Singapore
- D1008** **Evaluation of Education Strategies for Occupational Centred Practice**
Julia Chong, Singapore
- D1009** **Cricothyroidectomy Training Model**
Feifan Wang, Singapore
- D1010** **Student Perception of Teaching Their Peer**
Sulistiawati Sudarso, Indonesia
- D1011** **Integrated Cross-Specialty Medical Education Beginning with First-Year Case-Based Medical Interview OSCE: Importance of a Continuous Graded Performance Evaluation**
Naoko Hasunuma, Japan
- D1012** **How Do Electives Influence Career Choices of Undergraduate Medical Students at NUMed?**
Dineth Umanda Wijesiriwardena, Malaysia

D 1007

EXPERIENCE OF OUR JOURNEY THROUGH THE INAUGURAL MEDICAL GRAND CHALLENGE 2017

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Background and Aims

The Medical Grand Challenge (MGC) 2017 was the inaugural student-led medical innovation program started by the Yong Loo Lin School of Medicine (NUS Medicine). It required medical students to collaborate with students from other NUS faculties to adopt a multidisciplinary approach in identifying and tackling healthcare problems. The competition provided a platform for the students to brainstorm on business strategy, creativity, design quality and healthcare impact. We share our experience as participants and shortlisted finalists in the Medical Grand Challenge (MGC).

Methods

MGC was a year long competition which began with an interaction event amongst students from different faculties. Following that, 2 bootcamps were held to equip participants with knowledge regarding medical innovation, business and engineering, with eminent guest speakers from University of Utah and National University Hospital.

To help participants prepare for the finale, multiple lectures regarding strategy, financial projections, intellectual property, ethical considerations, pitching and presentation and visits to healthcare firms such as Jaga-Me, SGIInnovate and Medtronic were organised.

The finale was held on 18 August 2017 which included a poster exhibition, followed by a 4 minutes oral presentation by the top 6 teams. The judging panel included medical and business academics, start-up founders and venture capitalists.

Results

There were more than 20 teams who submitted their ideas for MGC. 17 teams were shortlisted for the finals. Submissions ranged from mobile app innovations, to devices and gadgets. Our group developed a prototype of a mobile application "MissiQ", with the aim to improve patients' outpatient clinic experiences. It allows users to:

1. View all their upcoming and past appointments
2. Register online without physically being at the clinic
3. Check waiting time till their turn
4. Get notification from an automated chatbot regarding changes in waiting time
5. Notify clinic that they will be late or will be on time via the chatbot
6. Access map of hospital and how to get to clinic
7. Make payment online to skip the queue
8. Check all prescribed medication information
9. Set reminder to take medications and follow-up appointment

Our group was interviewed by The New Paper as part of the article "NUS students develop apps to help patients" published on 21 August 2017.

While it is difficult to quantify the results of the grand challenge, many fruitful interactions between the students of different faculties were formed. All groups were faced with the challenge of designing effective solutions with budgetary, manpower and technical constraints. Yet, the numerous medical innovations created are evidence of the potential of such a competition.

Conclusion

MGC is a competition that encourages us medical students to think creatively, using a multidisciplinary approach to solve real healthcare problems. We hope our experience will serve as an inspiration for other medical schools 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.

D 1008

EVALUATION OF EDUCATION STRATEGIES FOR OCCUPATIONAL CENTRED PRACTICE

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Background and Aims

Background: Occupational Therapy is a profession that focuses on facilitating the clients' ability to engage in their preferred and essential occupations through occupation-centred practice. However therapists who work in acute hospitals often find themselves conforming to a more biomedical approach in intervention, deviating from the true essence of the profession. In 2016, Occupational Therapy Department in Singapore General Hospital has decided to implement a series of educational strategies to facilitate therapists' behaviour change towards a more occupation centred practice.

Aim: The aim of this paper is to evaluate these strategies using the Integrated Behaviour Model (IBM).

Methods

The educational strategies implemented by the department within the year of 2016 were listed and analysed based on the seven factors of IBM.

Results

A total of six educational strategies were implemented in the department. They are 1. Motivational and inspirational talk by Head of Department at the Occupational Day ceremony in January. 2. Occupational Therapy day celebration with a thematic focus on "Occupations". 3. Fortnightly sharing sessions by therapists from different units on their success in incorporating occupation-centred practice in their daily clinical work. 4. The development of evidence-based clinical guidelines with an emphasis on occupation centred practice by therapists in each clinical unit. 5. The weekly department in-services and evaluation forms for these presentations were adjusted to incorporate occupation as a mandatory component. 6. The development of 'Activities of Daily Living (ADL) Toolkits' by each clinical unit to facilitate occupation centred assessment and intervention specific to their client population. The result analysis found that all seven factors of IBM (attitude, perceived norms, personal agency, knowledge and skills, salience of behaviours, environmental constraints and habits) were addressed by these strategies. The most frequently addressed factors were attitude and perceived norm which directly affect a person's intention to change. The least frequent addressed factors were personal agency and habituation.

Conclusion

Future educational strategies should focus on facilitating therapists' sense of personal agency and habituation.

D 1009

CRICOTHYROIDECTOMY TRAINING MODEL

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Background and Aims

Cricothyroidectomy is an emergency life-saving surgical procedure performed on the airway. Every second saved in executing the procedure equates to vast improvement in patient outcome. Cricothyroidectomy training is crucial to ensure the competency of our doctors. This entails thorough knowledge of the procedure, steps, airway anatomy, and ability to detect subtle surface anatomy to perform the procedure with confidence.

Current available model in cricothyroidectomy simulation teaching is not anatomically accurate, and is unable to replicate the tactile sensation, factors important for accurate identification of surface landmarks. Hence, current simulation training does not confer trainees sufficient confidence and/or competence in performing procedure.

Methods

We utilised an amalgamation of 3D printing resources and produced a prototype model of the laryngeal framework to replicate the surgical field over the neck. Our 3D reconstructed prototype model of the laryngeal framework is anatomically accurate. The skin substitute made from an admixture of silicon materials bears close resemblance to skin thickness and feel, allowing for accurate tactile simulation.

We have tested the model. Performing the cricothyroidectomy procedure on the prototype model closely replicates the actual surgical procedure.

With the prototype, we plan to conduct training sessions for our junior medical officers. We will evaluate their confidence in performing the procedure with a survey with both qualitative and quantitative elements before and after the training session. We will evaluate their competence with a score by the senior facilitating the session, and by timing the time they take to secure the airway with the procedure.

Results

Prototype model is currently anatomically accurate and silicon replica as skin substitute accords reasonable real-life simulation. We will obtain the results of improved confidence and competence in the next phase of the project.

Conclusion

An anatomically accurate 3D simulation model for cricothyroidectomy is an advancement in the training of this critical but rare procedure. Trainees are expected to have improved confidence and competence after training with this more realistic simulation model. We will obtain the results of improved confidence and competence by the August 2017, and we will present the data during the conference in January 2018.

D 1010

STUDENT PERCEPTION OF TEACHING THEIR PEER

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Background and Aims

Student as peer teacher has been widely used for creating comfortable learning environment. It promotes a comfortable atmosphere for exchanges ideas. Peer teacher can be more supportive and encouraging. It reduces learner anxiety too. This research aimed to explore students perception about the benefits and challenges of teaching their peer.

Methods

The research was conducted at Faculty of Medicine, Mulawarman University. This was a descriptive study with qualitative approach. Data was obtained through focus group discussion (FGD) of students with experience in teaching their peer. Every sessions of FGD were videotaped, and the result was transcribed verbatim. Transcripts were analysed thematically.

Results

15 students, 6 males and 9 females, were contributed in this research. They were distributed into 3 groups of FGD. Peer teaching can enhance learning motivation, including reviewing last lecture, asking information about topic and reviewing literature. It can also promote deeper content comprehension, opportunity to practice presentation skill and building interpersonal relationship. Nevertheless, the challenges of teaching their peer are time management related to their tight schedule as medical student, self-efficacy including psychological readiness, presentation skill, and content mastery related to how to deal with question.

Conclusion

Evidence shows that peer teaching in medical student has benefits and challenges as well. This is a concern for medical institution to applying peer teaching.

D 1011

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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Background and Aims

It is essential to make certain that medical students master the basic required cases and develop the necessary communication skills which they will need to practice medicine across all fields in the future, without becoming too focused on any one particular subfield.

Methods

At Akita University's medical department, we began conducting medical interviews and clinical reasoning studies for major symptoms (chest pain and abdominal pain) integrated with the basic and clinical medicine program(s) for all medical course freshmen in 2011. Since then, we have been requiring students to perform medical interview OSCE biannually (in July and December-two stations each), with the cooperation of Japanese and English-speaking non-Japanese simulated patients (SPs) for performance evaluation. We conducted questionnaire surveys about the effects of this regimen on changes in student motivation immediately following OSCE practice (in the first grade).

Results

We found that the ratio of students who indicated that the experience had increased their motivation to study medical English went up by 88% among the first year students. From the students' responses in the open comment section of the questionnaire forms we learned that the SP feedback (given in English for English OSCE) following each clinical examination was very popular among them. In addition, the SPs noted remarkable communicative improvement, in general, among the students from July to December. In my presentation, I will report on the development and results of our endeavours and speculate on future prospects.

Conclusion

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

Our findings show the importance of a continuous graded performance evaluation. Using this technique (OSCE Oriented Approach), we are now aiming to reform medical education in ways that will raise it to levels high enough to meet the loftiest of social expectations.

D 1012

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

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Background and Aims

A person'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.

There are multiple factors around the elective that ultimately influences a person's career choice such as duration, discipline, setting and choice are key determinants of how a medical student will perceive their elective experience.

Aims

1. To quantify the number of students across a range of elective experiences based on discipline, setting, choice and elective length.
2. To explore the reasoning behind choosing that particular type of elective experience.
3. To assess if elective choice is a good predictor of future career choice.
4. To assess which factors play key roles in helping an elective experience determine career choice.

Methods

A quantitative cross-sectional study was carried out using anonymous, voluntary questionnaires for data collection. Distribution was done amongst the current stage 5 MBBS students at NUMed (n=93) following informed consent. Each questionnaire 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. Statistical analysis was carried out in R.

Results

Data from 54 students was collected from the Stage 5 batch (Participation = 58%). Out of 54, 46 students chose to do 2 elective (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 electives were distributed evenly between Malaysia and a foreign country.

The main reasons behind choosing the elective were:

- Interest in the specialty as a future career (n=54).
- To experience a different healthcare setting (n=52).
- To consolidate knowledge and improve clinical skills for final year (n=49).

When comparing how well expectations of the elective were met against the likelihood of choosing the elective specialty as a future career choice, the following trends were noticed:

- Elective specialties were more likely to be chosen as a future career choice if the expectations were strongly met. For example, from 21 people who were most likely to choose the elective specialty as a future 4 agreed that their expectations had been met while 17 strongly agreed. Furthermore the p value following a chi squared test using results of the 2 Likert questions was 0.001 making the relationship significant.

With regards to factors surrounding the elective having the biggest positive and negative impacts, it was noted:

- Supervisor's influence - 77 electives reported a positive impact while 13 reported a negative impact.
- Interest in elective after elective- 50 electives reported greater interest after the elective while 15 reported reduced interest.

Conclusion

The study further asserts that experiences in medical school have an impact on future careers and that electives are a good predictor of future career choice.

Saturday 13 January 2018

Virgo 1, Level 1, Resorts World Convention Centre

8.15am – 9.00am

E-POSTER PRESENTATION SESSION 3

- D1013** **A Pilot Study Investigating the Efficacy of Near Peer Led Teaching for Breaking Bad News**
Angela Pang, Singapore
- D1014** **Through the Lens of Complexity: What Are the Implications for How We Develop Faculty in the Health Professions?**
Koshila Kumar, Australia
- D1015** **An Interactive Journey Through the Nephron: How an Animated Medical Courseware Package Helps to Deliver Complicated Physiological Mechanisms to a Large Medical Class**
Isabel Hwang, Hong Kong S.A.R.
- D1016** **The Role of Coaching in Enhancing Staff Compliance with Quality Requirements in a Private Medical Science College in Saudi Arabia**
Heba Mohtady, Saudi Arabia
- D1017** **Exploring Local Nursing Students' Perceptions on Receiving Feedback on Clinical Performance: A Pilot Study**
Jonathan Lim, Singapore
- D1018** **Reflection as a Learning Tool Amongst Inter-Professional Frontline Leaders**
Lawrence, Eng Huat Lim, Singapore

D 1013

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 in communication. However, there are no formal compulsory teaching for residents and senior residents in the art of breaking bad news.

Peer teaching, the passage of knowledge between persons at the same or similar stage of academic training, is a long established method of learning. A close variant of this is the near peer tutor, who is typically 2-5 years ahead of the tutee in learning. Since NPTs have usually taken the same courses and/ or studied the same material, their comparable insights and experience allow for a greater cognitive and social congruence with other learners. We postulate that near peer teachers (NPTs) 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 more traditional teachers (e.g. palliative consultants) to explore their acceptability, effectiveness, and years of 'distance' between tutors and tutees. We aim to evaluate the specific efficacy of this novel near peer led teaching for breaking of bad news.

Methods

A Likert Scale questionnaire with 15 questions was administered to the 10 participants of our pilot study after the tutorials by TTs and NPTs respectively.

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 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.

D 1014

THROUGH THE LENS OF COMPLEXITY: WHAT ARE THE IMPLICATIONS FOR HOW WE DEVELOP FACULTY IN THE HEALTH PROFESSIONS?

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Background and Aims

Complexity thinking has challenged us to re-examine fundamental assumptions about learning and established educational practices and pedagogies in the health professions. The implications of complexity thinking for how we develop faculty including via formal continuing education/professional development activities in the health professions is less well articulated.

Methods

A narrative synthesis of the literature on complexity perspectives of health professions education has been undertaken with the specific focus of identifying specific implications for faculty and faculty development incorporating technology enhanced education.

Results

In phase one of the analysis we have coalesced the themes from the literature into a conceptual model informed by complexity theory in which the clinical educator is situated at the centre, and which spans multiple spheres and illustrates the multiple and sometimes competing demands, tensions and opportunities present within the nested systems in which clinical educators work. The next phase of this analysis will discern the implications for faculty development with a specific focus on the role of educational technology. Phase 1 and 2 findings will be presented at the conference.

Conclusion

Formal continuing education/professional development activities in the health professions (including university postgraduate courses) need to adequately respond to the opportunities and challenges that complexity presents for education. Such activities need to be designed to help educators work within complex, adaptive systems and help improve the link between health professions education and healthcare delivery. In this sense, the focus needs to shift from outcome to process, and support double-loop learning, emergence and creativity. Using a complexity science lens can help us think more critically about the role and function of faculty development in the health professions, and how technology can help achieve this vision.

D 1015

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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Background and 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. 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.

Results

An evaluation of the medical courseware was conducted by the end of the course. 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.

Conclusion

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. In future, a new animated courseware covering another difficult area on renal handling of acid and base will be created.

D 1016**THE ROLE OF COACHING IN ENHANCING STAFF COMPLIANCE WITH QUALITY REQUIREMENTS IN A PRIVATE MEDICAL SCIENCE COLLEGE IN SAUDI ARABIA****¹Mohtady H, ²Daffa N***¹Fakeeh College for Medical Sciences, Saudi Arabia & Faculty of Medicine, Zagazig University, Egypt, ²Microbiology, Fakeeh College for Medical Sciences- King Abdulaziz University, Saudi Arabia***Background and Aims**

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. Consequently, closer considerations and efforts have been dedicated to these processes. 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. Accordingly, difficulties that hinder the teaching process should be identified and tackled through annual action plans; as part of a process of continuing improvement. This research focuses on coaching and its impact on quality processes related to teaching courses in a private medical sciences college in Kingdom of Saudi Arabia (KSA).

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.

Methods

A five-stage model of coaching as a developmental intervention was delivered over a period of 24 weeks. The main priority of the coaching program was to aid staff in developing self-awareness of their strengths and weaknesses, as well as developing the capacity to create action plans. The 5 stages conceptualised in the model were: a) Preliminary data analysis b) Individual coaching c) General team-wide open discussion d) Application e) Analysis re-iteration and results review.

Results

During the 24 weeks period, numerous improvements have been reported. Several minor changes were implemented directly (e.g. correction of simple typing errors and wrong template versions). The percentage of timely submitted reports increased from 46 % to 93%. The quality of submitted reports has been increased as indicated by decreasing the error rate from 88 % to 27%. Further, the number of written action plans for improvement among staff increased from 40.5 % to 97%. Within these action plans large modifications were described (e.g. implementation of interactive teaching strategies that involve more student participation, using assessment methods that are more objective and consistent, maximising the benefit of available learning resources, enhancing the use of technology in teaching).

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 standardised 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.

D 1017**EXPLORING LOCAL NURSING STUDENTS' PERCEPTIONS ON RECEIVING FEEDBACK ON CLINICAL PERFORMANCE: A PILOT STUDY****¹Lim J, ²Lim HA, ³Hong PQ, ³Chew PK***Departments of ¹Inpatient Nursing, ²Accident and Emergency, and ³Nursing Administration (Education), Khoo Teck Puat Hospital, Singapore***Background and Aims**

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). Currently, it is unclear how local nursing students perceive feedback during clinical placements. Students were given a structured evaluation form at the end of their clinical placement in Khoo Teck Puat Hospital (KTPH). Data was collated and results indicated that majority were pleased with their training environment and the guidance provided by nurses. However, anecdotal data from nursing students have revealed gaps in receiving quality feedback. Authors will conduct a pilot study focusing on final year nursing students' perceptions on feedback received during their clinical placements in KTPH.

Methods

Final year diploma nursing students undergoing clinical placements in an acute hospital in Singapore will be invited to participate in the study. Data collection will be conducted using semi- structured face to face interviews over a one month period. Questions will be posted to students to understand their views on feedback provided to them during their clinical placement. The interviews sessions will be recorded with permission. Interview transcripts will be transcribed verbatim and thematically analysed.

Results

As the abstract submission for 15th APMEC predates our data collection, no results will be presented at this moment. However, by January 2018, we will be able to present the findings of our study.

Conclusion

Nurses have a professional obligation to guide nursing students in meeting the complex needs required to work safely in this current healthcare system. We anticipate that findings from this study will provide educators valuable knowledge to support nursing students more effectively when providing feedback to them. Educators can then design quality and effective feedback training sessions in preparing nurses to coach and support the growth and development of nursing students. This pilot study will also shed light on barriers inhibiting quality feedback given to students in the clinical setting.

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D 1018

REFLECTION AS A LEARNING TOOL AMONGST INTER-PROFESSIONAL FRONTLINE LEADERS

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Background and Aims

Reflective practice plays a pivotal role in healthcare leadership development. Leaders are encouraged to pause, filter and integrate experiences with new learning (Densten & Gray, 2001). They gain insight and better understanding, which enable better judgment in ambiguous and complex situations. Few studies assess reflective practice amongst inter-professional frontline leaders. This study aims to examine the perceptions of inter-professional frontline healthcare leaders on reflective practice, and to assess the quality of their reflective portfolios.

Methods

We conducted a mixed methods study of 32 inter-professional frontline leaders, comprising 22(69%) clinical (medical, nursing and allied health), and 10(31%) non-clinical staff. They participated in the five-day Inter-Professional Leadership Program (IPLP), a training program designed for inter-professional frontline leaders to learn leadership through Community of practice, Stories-based sharing, Tools-centred, Active experiential learning and Reflection (C-STAR). After the program, participants submitted reflective portfolios of their experiences using leadership tools learnt from IPLP to identify and address work-based challenges. A 5-point Likert online survey was conducted to understand their perceptions of reflective practice as a learning tool. We conducted descriptive statistics to summarise group profile and Independent-sample t-tests to compare responses between clinical and non-clinical participants. The quality of individual reflective portfolios was analysed and rated by 2 independent raters using the Hatton and Smith (1995) framework, corresponding to descriptive writing (level-1), descriptive reflection (level-2), dialogic reflection (level-3) and critical reflection (level-4).

Results

Thirty (93.8%) participants completed the online survey. Overall, participants agreed that reflective portfolios stimulated them to reflect about workplace application of tools (M = 3.77, SD = .68); writing down reflections is effective in promoting reflective learning (M = 3.73, SD = .64); in-class learning journey wall mural effectively promotes reflective learning (M = 3.70, SD = .6), and it can be too time consuming to complete the reflective portfolios (M = 3.20, SD = .96). Inferential statistics indicated that clinical participants (M = 3.95, SD = .39, N = 20), t (10.5) = -1.73, p = .11, and those who led a team (M = 3.91, SD = .53, N = 22), t (8.74) = -1.56, p = .16 experienced greater satisfaction from the reflection exercises. The majority (80%) strongly recommended reflection; these participants endorsed reflective portfolio as effective learning tools (M = 4.04, SD = .36, N = 24), t(6.26) = -6.16, p < .001 and did not find it too time consuming (M = 2.92, SD = .78, N = 24), t(28) = 3.96, p < .0001.

For reflective portfolio analysis, 16(50%) and 11(34%) were rated at levels 3 and 4 respectively. Deep reflection while applying leadership tools at workplace demonstrated that participants effectively harnessed reflection as an enabler of learning.

Conclusion

Inter-professional frontline leaders generally appreciated and effectively applied reflective practice as leadership learning tool despite the demand on their time. Our study corroborates the potential of introducing reflective practice to frontline leaders to complement their learning journey as leaders. Various reflection methods could be explored to enhance readiness amongst non-clinicians and frontline leaders who did not lead teams to consider reflective practice as leadership learning tool.

E-POSTER PRESENTATION SESSION 4

- D1019** **Patients and Accompanying Persons Opinions About the Quality Services of Medical Students During Clerkship**
Siska Nia Irasanti, Indonesia
- D1020** **OSCE Simulation as a Tool to Enhance Learning in Musculoskeletal Undergraduate Teaching**
Yuhan Chee, Singapore
- D1021** **CTSP: An Internal Medicine Survival Guidebook for Residents by Residents**
Vanessa Cui-Lian Chong, Singapore
- D1022** **Using a Holistic Approach to Engage Clinical Faculty and Adjunct Clinician Educators on Initiatives Launched and Gather Feedback on Improvements**
Michelle Lim, Singapore
- D1023** **The Role of Chief Medical Residents in Japanese Internal Medicine Programs: A Pilot Survey In Japan**
Shunsuke Kosugi, Japan
- D1024** **The Perception of Medical Students at Newcastle University Medicine Malaysia (NUMed) Towards Medical Research as a Career in Malaysia**
Rucchira Wickramasinghe, Malaysia

D 1019

PATIENTS AND ACCOMPANYING PERSONS OPINIONS ABOUT THE QUALITY SERVICES OF MEDICAL STUDENTS DURING CLERKSHIP

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Background and Aims

The increased intensity of hospital competition, demanding company to always incorporate the needs and desires of consumers and try to fulfil what is expected of consumers by producing quality satisfactory services.

During clerkship, students are required to rotate through different medical specialties and treat patients under the supervision of physicians.

This research aims is to know patients and accompanying persons opinions about the quality services of School of Medicine Unisba medical students during clerkship.

Methods

This research method used cross sectional-descriptive explanatory survey with a questionnaire. 160 patients was participated with accidental sampling method. Statistical analysis use spearman correlation test analysis.

Results

The results showed the services quality of School of Medicine Unisba medical students during clerkship in a unit of outpatient Paediatric Department Al Ihsan Hospital, Bandung Indonesia rated good based on responsiveness component of 78.53%, the assurance component of 78.21%, 77.31% of empathy component and component reliability of 76.09%.

Significant correlation and moderate relationship between the services quality of School of Medicine Unisba medical students during clerkship and the important level of services were revealed with $p < 0.001$ (p value ≤ 0.05) and correlation coefficient ($r_s = 0.39$).

A gap between reality of these medical doctor service qualities during clerkship and the important level of the services can be used in drafting a strategy to improve the quality of services, increase patient satisfaction and loyalty.

Conclusion

The conclusion is the increasing of the medical students service qualities during clerkship are follow by the increasing of the important level of the services. The take home message is the quality of services of medical students during clerkship can be used to predict the important level of the services and improve patient satisfaction.

D 1020

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

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Background and Aims

Mock objective structured clinical examination (OSCE) or simulation in musculoskeletal teaching has not been widely practiced. Running a simulation where signs and symptoms are required is difficult. Teachings using video and PowerPoint 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.

Methods

A comparative retrospective study over 2 years involving 600 students was carried out. A new method of simulation training was incorporated into the musculoskeletal teaching block. This involved two separate 2 hours sessions of role-play simulation for each student carried out in groups of 12 students followed by a 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.

Conclusion

The result of this study shows that role-playing or simulation practices can benefit the students in many aspects such as interprofessional development, clinical and consultation skills experience in addition to an objective improvement in examination scores and pass rates. We also emphasize on the value of effective debriefing at the end of each simulation session.

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

D 1021

CTSP: AN INTERNAL MEDICINE SURVIVAL GUIDEBOOK FOR RESIDENTS BY RESIDENTS

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Background and Aims

Newly minted house officers are challenged daily to put into practice the knowledge they accrued from medical school. This process is undoubtedly difficult especially during night calls where they are often the first physicians to attend to new admissions or unwell patients. The National Healthcare Group (NHG) Internal Medicine (IM) residency programme has its own survival guidebook aptly named CTSP or "Called to see patient". While many handbooks are theory intensive, ours focuses more on the practical aspect of medicine, taking into consideration the unique clinical approaches needed for different systems. CTSP is written by our own residents and we believe that by imparting knowledge, residents themselves would be able to consolidate their learning and make their foray into teaching.

Methods

CTSP comprises of 17 chapters: Dermatology, Endocrinology, Gastroenterology, General Medicine in Khoo Teck Puat Hospital, General Medicine in Tan Tock Seng Hospital, Geriatric Medicine, Haematology, Infectious Diseases, Medical Oncology, Neurology, Palliative Medicine, Rehabilitation Medicine, Renal Medicine, Respiratory Medicine, Critical Care Medicine and Rheumatology, Allergy and Immunology. Each chapter is assigned to a year one and a year two resident who are mentored by a member of the faculty from the relevant subspecialty who vets the chapter for accuracy. The guidebook is revised and printed each academic year.

Results

The CTSP guidebook is a resident driven initiative with its first edition being published in 2011. CTSP is revised yearly to account for the ever changing face of medicine. Each incoming house officer receives the guidebook in hardcopy and/or softcopy which they can readily access on their smart phones. Qualitative feedback from residents have been positive, with most finding this handbook invaluable to their learning and daily work. Furthermore, the handbook includes survival tips, important contact numbers and a hospital directory which help to orientate new doctors. CTSP has been so well received that even non-resident house officers

have requested for access to the book. The IM programme promotes the sharing of knowledge and paying forward the benefits reaped from this book, hence we make this guidebook available to all postgraduate year one doctors in our hospital. We have also uploaded a softcopy of CTSP on our elearning portal. Authors of the book get to amalgamate their knowledge and reflect upon their clinical management. Being guided by specialists enables residents to fill in any knowledge gaps and refine their treatment algorithms. This enables junior doctors to proceed onto their next stage of residency with more confidence and aptitude. Taking on this mentorship role also helps foster an environment of learning and support among residents across all levels.

Conclusion

Having a guidebook for residents written by residents yields positive outcomes for both the readers and the writers. New doctors are able to quickly gain critical practical knowledge which may not be highlighted in medical school. Residents who serve as authors of the book get to crystallise knowledge honed from their junior years and also develop into clinical mentors. The guidebook encourages both systems-based practice and practice-based learning and improvement.

D 1022

USING A HOLISTIC APPROACH TO ENGAGE CLINICAL FACULTY AND ADJUNCT CLINICIAN EDUCATORS ON INITIATIVES LAUNCHED AND GATHER FEEDBACK ON IMPROVEMENTS

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Background and Aims

The NUS Yong Loo Lin School of Medicine (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. 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.

Methods

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

Results

Satisfaction with the School to engage the CEs - 44% and 56% in 2015 and 2016 respectively answered "good"/"excellent". More than 50% answered "good"/"excellent" for initiatives on the Dean's Thank You Letters, E-journal access, Annual sharing of students' feedback and Dean's appreciation for CEs in both years.

Initiatives that had "I am not aware" as responses in 2015 and 2016 were 43% and 48% respectively for Online Marking Tool for Clinical examiners, 52% and 49% for Online Student Feedback Portal, 59% and 55% Educator Concierge Service and 57%** (2016) for Educator e-Service.

Resources offered to attend medical education workshops/conference/seminars was rated "most important"/"highest importance" in 2016. 84% "agree"/"strongly agree" on resources offered to attend workshops as important in 2015.

67% of the respondents in both years "agree"/"strongly agree" that Special Interest Groups for Medical Education was potentially helpful.

Qualitative feedback:

Communication and Engagement: explore common physical space/platform for educators' interaction, engagement at specialty level and across institutions, communications on courses and more direct engagements between the School and educators. Faculty development: more workshops and funding. Promotion and Recognition: to be based on long service in teaching/CEs hospital grade/publications. 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. Meetings were held with different levels of stakeholders (senior management, CEs and administrators) to boost communications and collaborations.

Reference:

* Poh, P., Heng, L., Yeo, S., Hooi, S., Lau, T., Tay, S. and Samarasekera, D. (2017). Holistic Approach in Managing a Clinical Learning Environment: 3Cs Approach. Mededpublish.org <http://www.mededpublish.org/manuscripts/577/v1>.

Footnote:

** Question was not ask in 2015.

D 1023

THE ROLE OF CHIEF MEDICAL RESIDENTS IN JAPANESE INTERNAL MEDICINE PROGRAMS: A PILOT SURVEY IN JAPAN

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Background and Aims

In Japan, junior residency and internal medicine senior residency programs are emerging. As they increase, several programs made their own Chief Medical Resident systems. Because these systems were original, there were no standards and no networks of Chief Medical Residents like APDIM (Association of Program Directors in Internal Medicine) in the United States. There were no preceding surveys reported that focused on Chief Medical Residents 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

Methods

To clarify the actual role of Chief Medical Residents in Japan, we created a questionnaire consisting of 11 questions. Since we do not know the actual number of hospital who have chief medical residents in Japan, we use the snowball sampling. We sent to 10 survey respondents who took a role of a Chief Medical Resident within the past three years. Likert scale (1, strongly disagree; 5, strongly agree) was utilised for the questions regarding their perception of the role. The participants were selected based on personal networking, and the response rate was 100%. This was not a comprehensive nationwide survey.

Results

The mean number of Chief Medical Resident per program was 1.6 per year. 80% were post graduate year (PGY)-5, which is the final grade of their residency programs, and 20% took the role when they were PGY-4. The method of choosing Chief Medical Residents were different between programs, with recommendation among peers being the most common method (60%). The representing party of "Chief Medical Resident" was also different between programs, with 50% being the representative of both junior and senior residents, and 40% being the representative of senior residents of their department. In addition to their duties as a resident, 30% had management jobs like trafficking patient flow and participation in conferences held among the directors. As a non-clinical job, all of my survey respondents had the duty of managing their residents, and 50% had the duty of educating their residents. They reported honourable status (70%) as the largest benefit, but they also felt the disadvantage of increased work load and duty hours. 50% had no formal reading as a preparation for the role of Chief Medical Resident.

The overall perception that the role contributed to their own growth was mean score of 4.89.

Conclusion

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

D 1024

THE PERCEPTION OF MEDICAL STUDENTS AT NEWCASTLE UNIVERSITY MEDICINE MALAYSIA (NUMed) TOWARDS MEDICAL RESEARCH AS A CAREER IN MALAYSIA

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Background and Aims

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 medical students choosing to do research has declined over the past few years.

In order to reverse this, many universities have attempted to create an interest about research among medical students by introducing research early in their curriculum and this has shown promising results of piqued interest among students.

As Malaysia is also going to face similar challenges, it is vital 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.

Aims

1. To assess the awareness and perception about medical research among undergraduate medical students at NUMed.
2. To assess the interest of pursuing a career in medical research and recognise any barriers preventing the same.
3. To identify possible solutions to increase the interest of medical students towards medical research

Methods

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 R.

Results

Data from 294 students was collected spanning all five stages of the MBBS course. (Females - 65%) It was seen that 93% of the sample were aware that medical research is a possible career post MBBS. However, only 30% believe that carrying out medical research will help their career prospects in Malaysia.

Only 40% want to pursue a career in medical research. There was no significant difference seen among stages ($p=0.72$) or between genders ($p=0.26$) in the interest levels of pursuing a career in medical research. Further, interest towards research showed a downward trend through the five years.

The most significant barriers noted were the lack of interest, financial constraints and longer working hours.

The most agreed upon solution was to receive training in medical research while the least agreed upon solution was to make medical research a compulsory part of the MBBS curriculum.

Conclusion

A low 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 increase the interest and open new career options for the students of NUMed.

E-POSTER PRESENTATION SESSION 5

- D1025** **Enhancing E-Learning by Curriculum Design**
Caroline Choo Phaik Ong, Singapore
- D1026** **Evaluating the Effectiveness of Near-Peer Simulation-Based Teaching Among Junior Residents in a Residency Program**
Benjamin Yong-Qiang Tan, Singapore
- D1027** **Residents' Expectations and Perceptions of Clinical Teaching Activities in National Dental Centre Singapore (NDCS)**
Marianne Ong, Singapore
- D1028** **Enhancing Integration in the First Phase of the MBBS Curriculum, Faculty of Medicine, University of Colombo through an Innovative Model**
Dikshaladevi Pathmanathan, Sri Lanka
- D1029** **It's Not Too Early to Start Simulation Training in Premedical Basic Science Education**
Chikako Kawahara, Japan
- D1030** **Promoting Student Engagement in Large Group Teaching: A Practitioner Inquiry**
Ma. Brenda Pancho, Malaysia

D 1025

ENHANCING E-LEARNING BY CURRICULUM DESIGN

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Background and Aims

E-Learning is popularly used in medical education because of easy learner access and scalability. The potential disadvantages include impersonal learning without opportunity for feedback. 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. We aimed to evaluate the effectiveness of our interactive online Paediatric Surgery Orientation Program by comparing the learner response to this new program with a previous orientation program that comprised voice-annotated PowerPoint (VAP) lectures and traditional faculty-delivered lectures.

Methods

All new junior doctors are required to complete the departmental online orientation program. Post program learner feedback was collected from January 2014 to February 2017. The program was converted from VAP and faculty-delivered lectures to interactive in July 2016. Respondents were asked to rate their confidence level in managing the conditions taught before and after the module, using a 5-point Likert scale. The mean difference in confidence-improvement after the modules (old versus interactive) were analysed using Mann-Whitney test.

Results

For the general Paediatric surgery topics, there were 49 responses: 35 (71.4%) VAP and 14 (28.6%) interactive. For the external topics, there were 21 responses: 7 traditional lectures and 14 interactive. All types of teaching increased the doctor's confidence to manage conditions taught in the lecture but the difference was greater 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 1.36 (1.25 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.

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 improve online lectures.

D 1026**EVALUATING THE EFFECTIVENESS OF NEAR-PEER SIMULATION-BASED TEACHING AMONG JUNIOR RESIDENTS IN A RESIDENCY PROGRAM***¹Tan BY, ¹Shen X, ¹Tay BW, ¹Mok SF, ²Yap ES, ¹Khoo SM**¹Department of Medicine, National University Hospital, National University Health System (NUHS), Singapore, ²Department of Haematology-Oncology, National University Cancer Institute (NCIS), National University Health System (NUHS), Singapore***Background and Aims**

Near peer teaching has been gaining popularity as it has been shown to improve learner's understanding, targeted at an appropriate level and promotes familiarisation. 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.

Methods

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.

Results

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

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 organise subsequent sessions. Our experience shows that it may be beneficial and likely sustainable for residency programs to conduct a near peer simulation-based medical education program for first-year residents, specifically to aid residents in preparing to face real-life emergency scenarios.

D 1027**RESIDENTS' EXPECTATIONS AND PERCEPTIONS OF CLINICAL TEACHING ACTIVITIES IN NATIONAL DENTAL CENTRE SINGAPORE (NDCS)***Ong M**Department of Restorative Dentistry, National Dental Centre Singapore, Singapore***Background and Aims**

With the establishment of the SingHealth Duke-NUS Oral Health Academic Clinical Programme in 2014, in-house faculty development workshops in the one minute preceptor (OMP) in microskills were conducted, in collaboration with the Academic Medicine Education Institute, for NDCS faculty. This descriptive study aims to report on Year 1 residents' expectations and perceptions of clinical teaching activities performed by NDCS faculty and the residents' satisfaction with their first year residency experience.

Methods

During the AY2015 orientation session, prior to the start of their residency programmes, residents in the 5 dental specialties (Endodontics, Periodontics, Prosthodontics, Orthodontics and Oral & Maxillofacial Surgery) were invited to participate in a 14-item survey. They were asked to indicate the importance they placed on NDCS clinical supervisors engaging in various teaching activities based on the one-minute preceptor in microskills (ETA) on a 4-point Likert scale (1= not important to 4= very important). At the end of their first year of residency, i.e., beginning of AY2016, the residents were again invited to participate in a 13-item survey that asked them to rate their NDCS clinical supervisors in performing the microskills (RFF) on a 4-point Likert scale (1= inadequate to 4= excellent). They were also required to fill out an 8-item annual programme evaluation where one of the items asked them to indicate their level of agreement with the statement "My overall Residency experience with NDCS is satisfactory" on a 5-point Likert scale (1=strongly disagree to 5= strongly agree).

Results

Sixteen Year 1 residents completed the ETA with overall mean ratings ranging from 3.15 (obtaining a commitment), 3.40 (probing for supporting evidence), 3.44 (providing positive feedback), 3.46 (teaching general rules) to 3.78 (correcting mistakes with feedback) for the 5 microskills. Fifteen residents completed the RFF (1 resident dropped out of a residency programme before the end of Year 1) with overall mean ratings ranging from 3.17 (providing positive feedback), 3.23 (correcting mistakes with feedback), 3.23 (teaching general rules), and 3.49 (probing for supporting evidence) to 3.63 (obtaining a commitment). The overall mean rating for satisfaction with Residency experience with NDCS was 4.46.

Conclusion

Based on this small cohort of Year 1 residents, their expectations and perceptions of clinical teaching activities performed by faculty may contribute to their satisfaction with Residency experience. It is interesting to note that this cohort of residents appeared to place more importance on faculty correcting mistakes with feedback while the perceived teaching activity that was done well by faculty was obtaining a commitment from the residents which was of the least importance to them. Faculty will continue to be encouraged to employ the 5 microskills in clinical teaching to maximise their teaching moments with residents managing patients in busy outpatient clinics in NDCS.

D 1028

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

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Background and Aims

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. Despite innovations brought in to the curriculum two decades ago, the first phase of the MBBS curriculum remains largely subject based. The main subjects are Anatomy, Physiology and Biochemistry organised under the stream 'basic sciences'. In addition, Community Medicine and Behavioural Sciences are organised in two parallel streams. 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 contextualised knowledge base relevant for future practice. The objective of this study was to develop a model that would enhance integration within the first phase of the curriculum.

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 reorganised 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 organised along five cross cutting levels of organisation, 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 organisational 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 finalised.

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 synchronisation 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.

D 1029

IT'S NOT TOO EARLY TO START SIMULATION TRAINING IN PREMEDICAL BASIC SCIENCE EDUCATION

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Background and Aims

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

Methods

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 organised classes (6 anatomy and 5 cell biology staff members).

Results

Initially only few of the 11 faculty members were convinced that introducing the simulation exercises would be beneficial, regardless of the type of simulation used. After the implementation, however, they recognised definite learning gains. 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; 3) The incidence of injury at dissection decreased significantly; and 4) Groups became more collaborative and thus students were more able to achieve the course objectives. 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 learners as well as teachers. It also helped integrate the sciences basic to medicine and clinical practice.

D 1030

PROMOTING STUDENT ENGAGEMENT IN LARGE GROUP TEACHING: A PRACTITIONER INQUIRY

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Background and Aims

Large group teaching is the most efficient method of teaching in undergraduate medical education as it allows the delivery of curriculum content to large groups using the least number of staff. However, its many drawbacks include passivity and lesser engagement of students in the learning process. 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 during large group teaching? and 3) What strategies should be used to maximise student engagement during large group teaching?

Methods

A lecture on the topic of learning disabilities under the Patients, Doctors and Society module in Year 1 of the MBBS Program of Newcastle University Medicine Malaysia was delivered by the author. 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

Based on the model of student engagement with learning, student engagement can be categorised as superficial or deep, with superficial engagement consisting of participation and attention, and deep engagement consisting of captivation, passion, affiliation and incorporation (Whitton & Moseley, 2014). Students showed superficial engagement through responding to questions and giving focused attention, and deep engagement through enjoying the lecture, having positive feelings, feeling included in the classroom activity and having a changed perception of self or others. Factors that influenced student engagement were categorised as content-related (e.g. relevance), student-related (e.g. interest), teacher-related (e.g. communication skills), process-related (e.g. student-teacher interaction) and context-related (e.g. classroom environment). Strategies that increase motivation and promote active learning through the use of holistic principles that integrate cognitive, affective and psychomotor domains enhance student engagement (Barkley, 2010). Addressing both the cognitive domain, for example by linking topics with previous learning, and the affective domain, through the use of narratives to elicit positive emotional responses, promoted student engagement. According to the self-determination theory, intrinsic motivation is stimulated if students find the topic interesting or relevant, and is supported by addressing the psychological needs of autonomy, competence and relatedness (Ryan & Deci, 2000). Students were motivated to engage when topic relevance was communicated through explanation and giving examples from patient narratives. Providing students with opportunities for self-directed study, questioning to enable them to demonstrate their knowledge and establishing connection through good communication skills are examples of strategies that addressed students' need for autonomy, competence and relatedness, respectively.

Conclusion

Student engagement occurs at superficial and deep 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.

E-POSTER PRESENTATION SESSION 6

- D1031** **Standardisation of Minor Surgical Procedure Teaching in Yishun Polyclinic**
Fung Yee (Jeremy) Foo, Singapore
- D1032** **Are We Teaching High Value, Cost-Conscious Care in Our Curriculum? – A Singapore Medical School's Perspective**
Desmond Boon Seng Teo, Singapore
- D1033** **Relevance of Learning Surface Anatomy for Clinical Examination of Patients: A Pilot Study involving Standardised Patients (SPs) to Teach Surface Anatomy to Year-1 Medical Students**
Satish R.L, Singapore
- D1034** **Bond University Medical Program - Introducing an Online Assessment Platform**
Kirsty Forrest, Australia
- D1035** **Essential Procedural Skills Required for a Basic Doctor Working in Remote Locations**
Solomon Sathishkumar, India
- D1036** **Factors Associated with Dropout Thoughts Among Students at a Government Medical School**
Khulood AlEnezi, Saudi Arabia

D 1031

STANDARDISATION OF MINOR SURGICAL PROCEDURE TEACHING IN YISHUN POLYCLINIC

Foo FY

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Background and Aims

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.

Methods

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.

D 1032**ARE WE TEACHING HIGH VALUE, COST-CONSCIOUS CARE IN OUR CURRICULUM? - A SINGAPORE MEDICAL SCHOOL'S PERSPECTIVE***Teo DBS, Chua JW, Reshma Aziz M**Department of Medicine, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

Increasing healthcare expenditure is a cause of concern for patients, medical professionals, economists and governments worldwide. Research has shown that healthcare intensity and spending patterns are associated with training experience which has lasting effect. This has created an urgent need to incorporate teaching on cost and value in healthcare in the undergraduate medical education.

The aims of the study are to determine 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), Singapore, and also to assess the attitudes, barriers and consequences of HV-CC amongst its medical students.

Methods

A self-administered survey was distributed to preclinical Phase III (P3) and clinical Phase V (P5) undergraduate medical students in NUS Yong Loo Lin School of Medicine to evaluate the perception and attitude towards HV-CC. 162 (54%) P3 and 122 (40%) P5 students participated in this survey.

Results

54% P3 and P5 students had not heard about HV-CC. 58% P3 and 54% P5 claimed that there was no such teaching. Majority believed physicians' clinical practice are key drivers of high healthcare cost (P3 - 79%, P5 - 84%), hence they should play a prominent role in limiting unnecessary tests (P3 - 100%, P5 - 99%) and contain cost (P3 - 95%, P5 - 94%). Many also believed that eliminating unnecessary tests will improve patient safety (P3 - 87%, P5 - 84%).

Whilst only 46% claimed they had been taught on HV-CC, majority of them recognised that patient safety is compromised with excessive testing (P3 - 87%, P5 - 84%) and increased healthcare expenses do not equate to better outcomes (P3 - 71%, P5 - 74%), thereby providing less value.

Conclusion

This is the first known study of Asian medical students' perspectives toward HV-CC. Regardless of actual patient exposure in clinical years, medical students have significant insight into HV-CC. Medical education curriculum should be improved to address the gaps, knowledge and attitudes towards of HV-CC. With rising healthcare cost and increase in patients with multimorbidity, all medical schools need to make a conscious effort to teach HV-CC and positive physician role-modelling behaviour can further reinforce its importance. Practicing physicians play an important role in undergraduate medical education to prepare the next generation of physicians to control cost and provide value in healthcare.

D 1033**RELEVANCE OF LEARNING SURFACE ANATOMY FOR CLINICAL EXAMINATION OF PATIENTS: A PILOT STUDY INVOLVING STANDARDISED PATIENTS (SPS) TO TEACH SURFACE ANATOMY TO YEAR-1 MEDICAL STUDENTS***¹R.L Satish, ²Kripesh A**¹Department of Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ²School of Medicine, University College of Cork, Ireland***Background and Aims**

Understanding surface anatomy is one of the cornerstones of Pre-Clinical medical education. Surface anatomy is essential in enabling medical students to locate and identify anatomical structures while studying gross anatomy. A clear understanding of surface anatomy helps in appreciating abnormal clinical signs (example: tracheal deviation) and in treating patients (example: inserting a chest tube). SPS provide an authentic learning environment; allowing for experiential learning, which enable medical students to better understand and retain anatomical knowledge as well as emulating patients that they will encounter which emphasises the underlying clinical relevance of anatomy in the future medical practice. We studied the effect of SPS in medical students' experience of better understanding anatomy and appreciating clinical relevance of anatomical structures of the Cardiovascular, Respiratory and Gastrointestinal systems.

Methods

Survey results from students who were in their preclinical years (1st year of medical school) undergoing human anatomy education was collected. Twenty-three (23) Year-1 medical students participated in this study. The students attended seven anatomy tutorials; each teaching session lasted 2 hours. Two of the anatomy tutorials were followed by hands-on sessions with SPS & a visit to the Anatomy Museum. We used student volunteers as SPS in our study. After these sessions, students were administered with survey questionnaires. Anatomy knowledge prior and post introduction of SPS were evaluated for improvements made in clinical examination skills. Medical Students rely mainly on four techniques during their hands on session: (1) Inspection: Observe structures & markings of surface features; Example: Observing Jugular Venous Pressure. (2) Palpation: Feel with a

firm pressure or perceived by their sense of touch to precisely locate & identify anatomical features under the skin; Example: Locating Apex Beat. (3) Percussion: Firmly tap specific body sites to detect resonating vibrations; Example: Percuss for Liver Dullness. (4) Auscultation: Example: listen to normal and abnormal heart sounds.

Results

Medical Students attending Tutorials were asked to take a survey. The survey was voluntary & anonymous. Traditional anatomy tutorials combined with SP teaching sessions & Anatomy museum sessions were useful to year-1 students in learning clinically relevant Gross and surface Anatomy. Eighty percent (80%) students agreed that SPs facilitated knowledge Application & Retention. Fifteen percent (15%) students requested additional hands-on session with SPs or a session with real patient. Eighty-Five percent (85%) students agreed learning Gross and Surface Anatomy was useful and relevant for clinical practice. Fifteen percent students preferred Collaborative Learning style sessions with higher order thinking questions and allowing groups to come up with solutions on their own. This is an ongoing study, Phase-2 of this study will be completed by Nov 2017, and the combined results of Phase-1 and Phase-2 studies will be presented at APMEC2018. Using SPs has greater impact on cognitive, affective, and psychomotor learning among medical students.

Conclusion

Results from Phase-1 of the study show that Knowledge of Surface Anatomy is valuable in (1) Clinical examination of patients, for (2) Diagnosis, (3) while performing bedside procedures and during Surgery. Surface anatomy is best practised on a living person using either professional SPs or Student volunteers.

D 1034

BOND UNIVERSITY MEDICAL PROGRAM - INTRODUCING AN ONLINE ASSESSMENT PLATFORM

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Background and Aims

Intro [The need]

To ensure the safety of patients in the Australian Hospital system, it is essential for medical schools to ensure that their graduates have attained sufficient standards in core skills and activities. However, clear and validated documentation of proficiency is often challenging to obtain across the breadth of skill domains required of a "work-ready" intern.

Across the Bond University Faculty of Health Sciences and Medicine, clinical placements are undertaken in approximately 150 locations including hospitals, general practice and other health care organisations. Approximately 800 clinical supervisors observe, assess and provide feedback on performance, and critical to the development of our students.

Current manual, paper based processes are inefficient, time consuming, wasteful and prone to error. They leave little opportunity for timely monitoring of or feedback to students. Inefficient processes and difficulty aggregating information result in delayed intervention when students require assistance.

Bond University has partnered with Osler Technology to develop an electronic platform to record and archive these necessary clinical records, with the aim of improving reliability of the assessment and attendance monitoring process, and delivering improved efficiencies to the faculty.

Methods

[What was introduced and how - OSLER]

The Osler platform has been implemented to improve administration of In-Placement clinical assessments and monitor attendance. The business requirement specification requested a fully mobile enabled, secure, digital platform available on any device from any location without any need for additional hardware that would allow a range of clinically relevant assessments, available "at the bedside" or office based, on any mobile or desktop device.

The clinical assessment and clinical attendance components have streamlined current paper-based processes by converting these to an electronic platform for medical students. From August 2017, all 4th year medical students and supervisors will be able to review assessment and attendance over a nominated timeframe for easy reference and reporting. This allows the Faculty's clinical supervisors to easily track their students' progress and identify anybody that may require additional support, helping to provide the best education experience possible.

Results

[Evaluation - what it will be and to be presented]

Delivering the project across so many sites and supervisors has involved a considerable implementation and change management process. However, we anticipate that the process will not be free of challenges. We are using an iterative quality improvement methodology so that we learn from early experiences, specifically looking for early indicators of improved efficiency and educational experience. We will present the evaluation of this implementation from the student and the faculty perspective.

Conclusion

[Addresses need - Caveat of the challenges]

Digitising current faculty processes for delivering in-placement assessment and feedback, and for monitoring attendance at sites of clinical exposure, is likely to create significant efficiencies in the delivery of our program. We anticipate this will also lead to improved feedback and assessment that helps our students to develop more rapidly and effectively.

D 1035**ESSENTIAL PROCEDURAL SKILLS REQUIRED FOR A BASIC DOCTOR WORKING IN REMOTE LOCATIONS**

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Background and Aims

MBBS graduates of Christian Medical College (CMC), Vellore India, are required to work independently or with some supervision in rural hospitals. This requires competency in essential procedural skills, in addition to several other competencies.

Objectives:

1. To identify essential procedural skills that medical graduates require for working in rural hospitals.
2. To identify the areas of procedural training that needs to be further strengthened.

Methods

Participants: 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 different departments in the CMC. Teachers in the medical college and in rural hospital were administered a questionnaire to identify essential procedural skills required for MBBS graduates to work in rural hospitals. Graduates were administered questionnaires to identify confidence in procedural skills and areas needing strengthening of skills training. This was followed by focus group discussion in the individual groups.

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

There was consistency of essential procedural skills identified by medical college and rural hospital teachers with the latter identifying additional skills.

The number of essential procedural skills specialty-wise required by MBBS graduates for working in rural hospitals, identified by rural hospital teachers are as follows:

Medicine 17, Surgery 17, Paediatrics 8, Obstetrics and Gynaecology 9, Orthopaedics 4, Anaesthesia 7, ENT 6, Ophthalmology 1.

There was consistency in the procedures that graduates felt confident about performing among those who had completed internship and those who had completed 1 year of rural service with the latter group identifying additional areas for skills strengthening.

The procedural skills that graduates who had completed 1 year of rural service identified as requiring strengthening of training were:

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

Paediatric: neonatal assessment and resuscitation, paediatric lumbar puncture, paediatric basic life support, intraosseous cannulation for infusion

Obstetrics and Gynaecology: Pap smear, Intra-Uterine Contraceptive Device insertion, tubectomy, forceps and vacuum delivery, dilatation and 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 study has identified essential procedural skills required for a basic doctor working in rural hospitals and also skills requiring strengthening. This needs-assessment will be used to develop a skills curriculum to prepare doctors who can work in rural hospitals. The skills list is relevant to all medical colleges in India and is useful in determining the requirements for MBBS training.

D 1036

FACTORS ASSOCIATED WITH DROPOUT THOUGHTS AMONG STUDENTS AT A GOVERNMENT MEDICAL SCHOOL

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Background and Aims

College of Medicine at King Saud University (KSU) in Saudi Arabia (KSA) is one of the oldest medical schools in the Middle East and has very restricted and high quality students' selection criteria. However, some students still think of dropping out from the college. There are no published local studies looking deeply into this phenomenon. Therefore, this study was conducted to investigate the factors associated significantly with the potential thoughts of dropping out among medical students.

Methods

A cross-sectional study was conducted to measure the prevalence of thoughts of dropping out among medical students at KSU, in KSA, in 2016-2017. After extensive literature review, a questionnaire was constructed containing fifty-five questions, about the student's personal, financial, academic-before and after entering into the College of Medicine-, as well as family status. The questionnaire was self-administered and was distributed electronically via e-mail through the database of the Students Council at KSU first, and then handed manually, when the response rate from the students was found to be low to all medical students from all academic levels in order to increase the response rate.

Results

A total number of 587(39.13%) medical students out of 1500 filled the questionnaire among them, 302(51.4%) reported having thought of dropping out of medical school at least once. However, only 17(5.6%) have thought of dropping out very seriously. The majority of the students (67.5%) have thought of withdrawal on stressful days only. First year of medical school was the most common year students (49.3%) thought of dropping out from the college at. Facing academic problems was the most common reason behind thinking of dropout (37.8%). The personal factors significantly associated with thinking of the dropout were: experiencing a negative life event in the last year ($p=.000$), decreased sense of personal accomplishment ($p=.000$), feeling socially isolated because of studying medicine ($p=.025$) and facing accommodation problems ($p=.032$). Academically, students whose decisions to enter medical school were influenced by the surroundings/relatives were at higher risk to dropout than their peers who decided that on their own ($OR=1.912, 95\%CI 1.33-2.75$). On the other hand, having graduated from a governmental high school decreases the risk of thinking of dropping out ($OR=0.66, 95\%CI .476-.913$), than from private schools. Interestingly, the skills of studying according to a plan and prioritizing tasks and time management appeared to be common features of students who haven't had thoughts of the dropout.

Conclusion

Some academic problems, personal and social factors appeared to be important motives for the students to think of dropping out. These factors could be tackled by implementing good academic guidance programs to detect symptomatic students before actually dropping out, and to support these students getting over the factors precipitating dropout thoughts. Study skills and time management could be essential parts of the academic guidance, as acquiring these soft skills appeared to be protective against thinking of dropping out of medical school.

Saturday 13 January 2018

Pisces 1, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 7

- D1037** **Five Year Development of the First Pharmacy Residency Post-Graduate Year One (PGY1) Programme, at an Academic Medical Centre- University Hospital, in Singapore**
Siew Woon Lim, Singapore
- D1038** **Skill Day: Enhance the Accuracy of Operating Medical Instrument of the ICU Nurse by Authorised Mechanism**
Pei-hui Tsai, Taiwan
- D1039** **Multiple Mini Interviews for Undergraduate Allied Health Programmes in Singapore**
Meredith Yeung, Singapore
- D1040** **Use of the Quizup Trivia Game App for Provision of Quizzes**
Gavin Dawe, Singapore
- D1041** **Improved Reliability of Summative Portfolio Assessment for Family Medicine Certification by Japan Primary Care Association**
Hirotaka Onishi, Japan
- D1042** **Morning Rounds: A Simulation Experience for Second Year Medical Students to Promote Clinical Reasoning**
Grzegorz Plochocki, Netherlands Antilles

E-POSTER PRESENTATION SESSION 8

- D1043** **The Teacher's Perspectives on Their Roles as a Medical Educator and Blended Learning**
Inthrani Raja Indran, Singapore
- D1044** **The Learning Environment and Its Application to Mentoring**
Zheng Xuan Ong, Singapore
- D1045** **A Narrative Review of Mentoring Programs in Family Medicine**
Charmaine Qiao Ting Low, Singapore
- D1046** **A Successful Introduction of a Wide Variety of Technologies Purposefully Prepares Faculty to Teach Good Patient Care**
Helen Batty, Canada
- D1047** **An Innovative Micro-Module Platform for Flipped Classrooms in Medical Education: The Elearning Clinical Skills (EC Skills) Channel**
Florence Tang, Hong Kong S.A.R.
- D1048** **Preparing Senior Residents to Be Faculty**
Evangeline Lim, Singapore

D 1037

FIVE YEAR DEVELOPMENT OF THE FIRST PHARMACY RESIDENCY POST-GRADUATE YEAR ONE (PGY1) PROGRAMME, AT AN ACADEMIC MEDICAL CENTRE- UNIVERSITY HOSPITAL, IN SINGAPORE

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Background and Aims

National University Hospital (NUH) Pharmacy Residency 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.

Methods

This residency launched in April 2012 was first developed using American Society of Health-System Pharmacists (ASHP) 2005 residency standards. Annual curriculum meetings are held to make improvements in the existing programme and to review feedback from residents. Selection and recruitment of eligible preceptors is 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 fulfil the purpose of the residency.

Results

Five cohorts, comprising a total of 12 residents would have graduated from the training by September 2017, over the 5 years

Learning experiences (LE) and activities grew from 15 in the initial years to 20 in its fifth year. Durations of various LE were adjusted to accommodate more elective LE during the 12-month training. Renal medicine and solid organ transplantation were added as electives. Pharmacy residency teaching seminar, held in collaboration with National University of Singapore (NUS), Faculty of Science, Pharmacy Department, was introduced as a learning activity. This provides opportunity for residents to practice and demonstrate skills required in teaching, dissemination of knowledge and assessing effectiveness of education. A major curriculum revision was undertaken in 2015 with the revision of ASHP standards in 2014. The evaluation frequencies of competency areas 1 (Patient Care) and 2 (Advancing Practice and Improving Patient Care) were increased to allow more opportunities for preceptors to check residents' clinical skills.

The number of preceptors closed to double in strength to-date. A new role, preceptor-in-training, was introduced to allow enthusiastic pharmacists who have yet met the full preceptor qualifications participate in precepting residents. Preceptors are encouraged to include a minimum of 2 hours of continuing pharmacy education that pertains to faculty development yearly

Graduate tracking is performed annually as part of the residency's quality improvement process. Seventy-eight percent and forty-four percent of graduate residents pursue a post-graduate degree in clinical pharmacy and achieve U.S. Board Certification in pharmacotherapy respectively. All are involved in varying degree of teaching and/or precepting of pharmacists, pharmacy residents, pre-registration pharmacists and pharmacy undergraduates. More than half assume leadership roles in their hospital work.

Conclusion

NUH Pharmacy Residency PGY1 programme meets its purpose of providing applicable and quality pharmacy training to its residents. It continues to seek out ways to improve its curriculum with the introduction of work-based assessments and faculty development plans to ensure its relevance in providing valuable pharmacy post-graduate training to our pharmacists.

D 1038

SKILL DAY: ENHANCE THE ACCURACY OF OPERATING MEDICAL INSTRUMENT OF THE ICU NURSE BY AUTHORISED MECHANISM

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Background and Aims

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.

The aim of this project was to achieve standardisation and consistency of the medical instrument operation process at first. Then we have to clarify the concept of the ICU nurse, and finally enhance the accuracy of operating medical instrument by authorised mechanism.

Methods

There were seven common medical equipment in our ICU, including DC shock, external ventricular drain, intra-abdominal pressure measurement, Swan-Ganz, continuous venous hemofiltration, intra-aortic balloon pump and extracorporeal membrane oxygenation. According to the characteristics of the patient from different units, the ability of operating medical instrument were divided into compulsory and elective course. The compulsory course mean that the staff should have necessary skills, and must be completed the certification. On the other hand, the elective course would be followed personal volition to participate

The senior seed teachers from different units were in charge of development of operation videos and checking lists for common medical devices, and submitted to the education evaluation committee. The teaching materials were passed the censorship, we uploaded items to e-learning platform. Seed members from each units accomplished e-learning classes and received certification in skill day. Members will go back and certificate their staff after certification.

Results

We have established an authenticating mechanism to achieve consistency, standardisation, and high-quality nursing care. 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. We could provide cross-unit assistance between the different units with consult nursing. 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. Therefore, the staffs were not restricted by the traditional classroom teaching, they could learn and review the program of operating medical instrument everywhere all the time. The e-learning platform has the function of "interactive discussion". However, the question could not be solved immediately due to low utilisation rate. We will promote the function and ask senior seed staff to be the moderator.

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. We have applied the experience of Skill day to new-staff education program and arranged the basic nursing-skill certification.

D 1039

MULTIPLE MINI INTERVIEWS FOR UNDERGRADUATE ALLIED HEALTH PROGRAMMES IN SINGAPORE

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Background and Aims

Admission selection in healthcare professions should follow the same quality assurance processes as assessment. However, the admission 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 genuinely represent themselves to their best potential. To address the situation, 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 mindset and sound ability for ethical reasoning. Aims: The development of MMI format into admission process.

Methods

Candidates applying to the undergraduate allied health programs (physiotherapy, occupational therapy, and diagnostic radiography and radiation therapy) at Singapore Institute of Technology since 2015 underwent a multi-station MMI. Stations were designed to select applicants whose qualities aligned with the desired attributes of a healthcare professional. For the 2017 admission cycle, feedback was solicited from the assessors (comprising of academics, Heads of clinical departments, senior clinicians, practice educators and private practitioners). A 7-point Likert scale was used to rate different aspects of the MMI in addition to qualitative comments. Descriptive statistics were used to analyse the quantitative portion of the survey, while content analysis and thematic description were applied to the qualitative data.

Results

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

- "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, provided a good gauge of ability to analyse and can prevent rehearsed responses."

There are a few challenges noted. With more than 80 interviewers and interviews running over a 4-weeks period, maintaining interviewers' consistency and ensuring questions are designed in a similar manner required attention. MMI is time- and labour-intensive. Some feedbacks about candidates may be challenged by the scenarios, depending on their age, background and life experiences.

Conclusion

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

D 1040

USE OF THE QUIZUP TRIVIA GAME APP FOR PROVISION OF QUIZZES

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Background and Aims

The aim was to investigate use of the QuizUp (<https://www.quizup.com/en>) mobile trivia game and social networking app for educational quizzes.

Methods

Pharmacology revision quizzes were provided 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 on QuizUp (<http://blog.nus.edu.sg/phcdgs/quizup/>). 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 of students. Qualitative comments in anonymous end-of-semester student feedback were collated.

Results

Estimated participation rates were medical: 55%, dental: 92%, first-year pharmacy: 90%, second-year pharmacy: 71%, first-year nursing: 40% and Master's nursing: 100%. Qualitative feedback was positive and suggested that QuizUp helped learning, consolidation of understanding and application of knowledge, for example: "very helpful in learning and applying the concept[s]", "promotes further learning", "allowed me to learn and revise", "love the quizzes to help us understand better", "allows us to consolidate our learning" and "very helpful in cementing concepts". Additionally, it was observed that QuizUp enabled interprofessional interaction between students from different classes playing the app with each other.

Conclusion

QuizUp is the world's biggest trivia game with an estimated 33 million users. Benefits of QuizUp include that: (1) It is free is for both quiz players and quiz setters. (2) Many students already play QuizUp recreationally, and the interface is intuitive being based on the widely known Trivial Pursuit game. (3) It runs robustly across touchscreen iOS and Android mobile devices. (4) The question format can accommodate not only text but also images. (5) A minimum of only seven questions are required per quiz topic and so educators can build up quiz banks incrementally over time. Like many educational quiz platforms, QuizUp provides feedback on the correct response, but a potential limitation is that there is no option for providing formative feedback on why answers are either correct or incorrect. Differences between QuizUp and the majority of other quiz platforms developed for educational purposes include: (1) It is a multiplayer app, which can increase student engagement by allowing students to play against each other. Students can choose to play anonymously by registering under pseudonyms. (2) Each match consists of just seven questions randomly selected from the question bank. This concise quiz format enables students to adjust usage of the app to their schedule. (3) The score the player receives depends not only on whether their answer is correct but also on how fast they respond. Further research is required to understand how this impacts learning. (4) The quiz setter cannot gather data on the players' responses. While this may be a disadvantage for educators interested in monitoring student progress, it may encourage greater student usage.

D 1041**IMPROVED RELIABILITY OF SUMMATIVE PORTFOLIO ASSESSMENT FOR FAMILY MEDICINE CERTIFICATION BY JAPAN PRIMARY CARE ASSOCIATION****¹Onishi H, ²Takayanagi R, ³Fujinuma Y**

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Background and Aims

Japan Primary Care Association (JPCA) has been using three components of assessment for certification for family medicine specialists, consisting of multiple choice questions, clinical skill assessment, and portfolio assessment. Portfolio assessment is a newer component than two others. Currently all the candidates for certified specialists must submit 18 reports in pre-selected areas after three years of training. Until 2015 only five areas of rubric were disclosed but since 2016 all 18 areas became open. The aim of this study is to evaluate the effect of disclosed rubric on reliability of portfolio assessment.

Methods

In Augusts of 2014, 2015, and 2016 each portfolio component was marked by two independent JPCA examiners. All examiners reflected on the points of marking to improve the system for the next year. Generalisability coefficient for each year was calculated using universes of (1) examinees, (2) examiners nested in components, and (3) components.

Results

Generalisability coefficients of 2014, 2015, and 2016 were 0.842, 0.872, and 0.889 respectively. Variance component for examiners was small but interactions between (1) and (2) and between (1) and (3) occupied large percentages.

Conclusion

Reliability of portfolio assessment was improved from 2014 to 2016. It is thought that newly disclosed rubric made examiners easier to reliably mark the reports.

D 1042**MORNING ROUNDS: A SIMULATION EXPERIENCE FOR SECOND YEAR MEDICAL STUDENTS TO PROMOTE CLINICAL REASONING****¹Plochocki G, ²Boese T**

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Background and Aims

Second year medical students, working in small groups, participate in two sequential simulation experiences involving diagnosis and treatment of patients. The primary objective is forming a differential diagnosis for acute presentations of two common symptoms: dyspnoea or chest pain. Secondly, teamwork, communication, and resuscitation skills are assessed.

Methods

Sequentially students encounter three simulated patients in the hospital presenting with the same symptom. On each patient, they take a focused history, perform a physical exam, and review diagnostic tests. Students huddle to obtain a shared mental model, then begin a treatment plan. Post simulation debriefing enhances reflection and metacognition.

Results

Faculty report improved clinical reasoning, teamwork, and communication, from the student's first to the second Morning Rounds simulation. Students find this activity highly satisfying and report their desire for this format more often. They also report that this simulation helps them to become aware of their knowledge and performance gaps.

Conclusion

The two Morning Rounds experiences improve students' clinical reasoning skills, teamwork, and communication skills in a simulated clinical setting in which they can safely practice skills and receive feedback and guidance related to their performance. The sequential presentation of patients with the same symptom is an effective strategy to enhance acquisition of critical thinking skills in second year medical students.

D 1043

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

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Background and Aims

Blended learning (BL) is fast becoming a distinctive feature of a transformative paradigm in medical education. Though BL is extensively supported by research in cognitive sciences and pedagogy, implementation can be impeded by a lack of effective plans and understanding of the stakeholders' needs. At the NUS YLL School of Medicine (NUSMed), there are plans to progressively incorporate BL as a primary teaching method in the upcoming years. These changes could significantly alter the roles and teaching methods of the medical educators.

Specific aims of this study:

1. Analyse the medical educators' perspectives on their roles as an information provider, facilitator, and resource developer
2. Assess the teaching and learning strategies, which the educators identify to be relevant and effective in medical education
3. Understand the educators' level of knowledge, acceptance, and concerns on BL
4. Identify organisational support that could alleviate the concerns

Methods

The study is conducted via a web-based anonymous survey containing closed ended questions primarily in a multiple choice or 5-point Likert style format, and minimal open ended questions. The survey was disseminated to teachers teaching Phase I and II students at NUSMed (n= 202). As this is an ongoing study, an interim analysis was performed (n = 20).

Results

On a Likert scale of 1-5, the participants rated the role of a facilitator as the most important as compared to being an information provider or resource developer with a mean score of 4.4. Creating more opportunities for faculty to gain clinically relevant knowledge in fields they teach (n =15) and students to engage in self-directed learning and application of concepts (n=15) were key measures identified by teachers to be effective and vital for the future of undergraduate medical education. 65% of the teachers reported that they have used BL in their classroom. Opportunities for educators to utilise the face-to-face time to tackle misconceptions (n=12), and promote deep learning via the use of case scenarios (n=12) were cited as the main advantages of BL. The teachers however noted that ensuring availability of resources to develop suitable materials (n=11) and students coming prepared for classes (n=11) would constitute the biggest challenges in implementing BL.)

The teachers' primary concerns on NUSMed making a collective shift towards BL included a need to better understand how they are expected to contribute (n=10), and how their contributions towards material development be acknowledged if contact hours with students are reduced(n=9). Recognition of the contributions made, a shift in focus from contact hours (n=11), and sufficient time to achieve objectives (n=11) were viewed as important forms of organisational support in moving towards BL.

Conclusion

The interim analysis notes that our medical teachers value the educator's role as a facilitator, which would be vital for a faculty wide adoption of BL. 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 to develop learning resources, and measurement of involvement and outcomes of BL to acknowledge early adopters.

D 1044**THE LEARNING ENVIRONMENT AND ITS APPLICATION TO MENTORING****¹Ong ZX, ¹Hee J, ¹Quek S, ²Toh YP, ³Krishna LKR**

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Background and Aims

A conducive learning environment facilitates effective growth and progress on the part of the learner. Elements contributing to a good learning environment have been described in the literature whilst there has been a dearth of data on the mentoring environment.

Through a study of elements contributing to a good learning environment and the consideration of mentoring as a mode of learning, we aim to characterise the mentoring environment and provide a basis for structure and definition of the mentoring environment.

Methods

A literature search of PubMed, Scopus, ERIC and the Cochrane Library Databases were done for publications regarding clinical learning in medicine, based on keywords such as "clinical learning", "clinical training" and "medical training" from 2000 to 2015. English articles regarding learning environment in internal medical training (excluding surgical subspecialties, interprofessional education etc.) from a senior to junior were selected. Perspective papers, quality improvement papers and education simulation papers were excluded as well. Open coding and thematic analysis was carried out on the data available, and themes were identified and discussed by 3 authors.

Results

The initial search returned 5503 titles and abstracts. After reviewing the suitable articles based on several inclusion and exclusion criteria, 215 articles were retrieved and 58 articles were selected.

Several themes characterised the learning environment. (a) relationship between teacher and student (b) the organisational structure (curriculum objectives, learning methodology) (c) organisational culture (identified by the hidden curriculum) and (d) characteristics of teacher and student. A good learning environment was able to improve the learner's clinical skills and confidence, shape their professional identity while the contrary stifled the learner's motivation, resilience and sense of ability and competence for clinical work.

Conclusion

Like mentoring, learning is a complex relationship between teacher and student, existing within influences and considerations that must be undertaken to maximise the outcome of the clinical learning. Of note, well-defined objectives set by the curriculum is key to education and this must be effectively adopted by educators. However, organisational culture and may impart a hidden curriculum of values, beliefs and behaviours to students and influence their professional development. By understanding the learning environment, and its relative similarity with mentoring's contexts we draw parallels and implement an approach to inform the employ of mentoring paying attention to the unique culture of each institution and adapting as necessary.

D 1045

A NARRATIVE REVIEW OF MENTORING PROGRAMS IN FAMILY MEDICINE

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Background and Aims

Mentoring in Family Medicine nurtures personal and professional development amongst mentees and mentors and enhances organisational productivity. Yet, failure to define it leads to variations in understanding and practice and conflation with other educational approaches. This is compounded by a failure to recognise mentoring's context-specific, goal-sensitive, mentee-, mentor-, organisational- and relational-dependent nature that threatens its employ in formal training programs in Family Medicine. This review seeks to identify elements amongst successful mentoring relationships that can inform the design of local mentoring programs.

Methods

The narrative review thematically analyses reports of undergraduate and postgraduate mentoring programs in Family Medicine. A literature search of mentoring of a junior postgraduate or undergraduate by a more experienced mentor in Family Medicine between 1 January 2000 and 31st December 2015 was carried out using PubMed, ERIC, ScienceDirect, Cochrane Database of Systematic Reviews and OVID.

Results

1973 abstracts were retrieved and 20 full-text articles were analysed. Thematic analysis of the nine included articles identified five themes including characteristics of mentoring relationships, the mentoring process, mentors, mentees and organisations/stakeholders.

Conclusion

Successful mentoring programs pivot upon effective mentoring relationships. Successful programs provide effective matching and create nurturing mentoring environments to nurture mentoring relationships. Replicating these successes is key to local mentoring programs but further context-specific study is needed to ensure a sustainable and effective mentoring program.

D 1046

A SUCCESSFUL INTRODUCTION OF A WIDE VARIETY OF TECHNOLOGIES PURPOSEFULLY PREPARES FACULTY TO TEACH GOOD PATIENT CARE

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Background and Aims

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). The course uses many different instructional strategies and educational technologies to achieve the program's objectives.

Methods

As part of a research study our program participants described many impactful characteristics of our INTAPT faculty development program in a reflective exercise. Critical elements identified included collaborative group work, building new skills and confidence, and sharing critical analyses.

We mapped the instructional strategies and technologies purposefully used in our program and made explicit links between the technologies and strategies used and the outcomes described by students

Results

Technologies that supported these activities included: Skype; WordPress; Twitter; Dropbox; information databases-PubMed, Eric etc.; PowerPoint; Socrative; e-mail and What's App; LMS learning management systems; Facebook; iClickers and more. Instructional strategies included facilitated group work, practical applications of theory in real world settings, feedback communication and use of a reflective E-portfolio.

Many faculty had never used these technologies in a professional health professions education setting. Strengthening teamwork and interdisciplinary collaboration possibilities through many of the above facilitated communication and efficient project completion. This improved the clinical teachers' technological fluency and confidence for creating both patient centred healthcare innovations and student centred learning interactivity.

Conclusion

Our curriculum design map (blue print) demonstrates how specific technologies and educational strategies lead to outcomes of importance for students. These outcomes include the clinical teachers' increased technological fluency and confidence for creating both digitally enhanced interactive student centred learning and patient centred healthcare.

D 1047**AN INNOVATIVE MICRO-MODULE PLATFORM FOR FLIPPED CLASSROOMS IN MEDICAL EDUCATION: THE ELEARNING CLINICAL SKILLS (EC SKILLS) CHANNEL****¹Mak T, ²Tang F, ³Chung D, ¹Ng S, ⁴Lee R, ⁵Ngan O***¹Department of Surgery, ²School of Biomedical Sciences, ³Clinical Skill Learning Centre, ⁴Information Technology Services Centre, and ⁵School of Jockey Club Public Health, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong S.A.R***Background and Aims**

Starting from Year 4 of the 6-year medical programme, students receive training in clinical skills through their clinical attachment to hospitals after completing their 3-year fundamental and preclinical studies. The students first attend a bridging course, which is part of the Faculty of Medicine curriculum, to strengthen their preclinical skills and gain the essential pathological knowledge. The flipped e-learning approach helps bridge the transition between the preclinical and clinical phases by using methods ranging from repetitive memorisation of facts to the application of comprehensive learning.

Methods

In this project, our team developed an innovative e-learning platform, named the eC Skills Channel, which provides novel teaching courseware. Hernias and hemorrhoids were chosen as the topics for the pilot study. The objective of the eC Skills channel is to assist students in learning clinical anatomy and other clinical skills during the bridging courses. The platform comprises illustrations with explanations, animations, and videos and is compatible with all types of smartphone and tablet devices. The platform is available through the web server and Blackboard eLearn. Medical students in all years are encouraged to access the platform because it will enable them to read and learn more effectively by reinforcing the different concepts they have learnt at university while studying at home.

Results

We conducted an anonymous, self-administered survey to understand the attitudes of the courseware users towards the eC Skills Channel. Eighteen students completed and returned the e-questionnaire, and most agreed that the new courseware helped them to see the material in a new way and reinforced what they had learned in the classroom and enhanced their confidence in preparation for clinical examination.

Conclusion

Overall, our findings show that the eC Skills Channel provides effective courseware that can motivate and facilitate students to quickly acquire the skills and knowledge related to clinical anatomy and the surgical procedures to handle basic clinical problems. Indeed, the eC Skills Channel provides a new pedagogical approach for introducing flipped classroom learning in medical education to support the learning requirements of students.

D 1048**PREPARING SENIOR RESIDENTS TO BE FACULTY****¹Lim E, ²Goy WLR***Departments of ¹Anaesthesiology and ²Women's Anaesthesia, KK Women's & Children's Hospital, Singapore***Background and Aims**

A faculty has multiple roles within the job scope: medical teacher, administrator and medical specialist. The medical teacher entails being a facilitator, role model, information provider, resource developer, planner and assessor. These roles require a different skill set and mind-set that residency training in generally does not incorporate. While the residency program is committed to producing competent doctors, ensuring that residents transit seamlessly into well-developed faculty is not guaranteed. Ensuring faculty participate in faculty development is also challenging due to time constraints and the lack of interest in medical education amongst faculty in general. With these in mind, we embarked on a structured education program within the SingHealth Anaesthesiology Residency Program (SHARP) for senior residents to aid them in preparing to be faculty and specialist anaesthetists.

Methods

A needs assessment survey amongst senior residents and first year associate consultants was done. Using these results, a structured teaching program encompassing 15 topics organised into 3 modules (specialists in training, medical teachers in training and patient advocates/ quality managers in training) was designed. Buy-in from the program director and the faculty was obtained. The duration of senior residency in anaesthesiology is 2 years and rotations are organised as 4 month blocks at 3 hospital sites. Faculty at 3 sites were tasked to develop the modules and conduct the teaching sessions opportunistically when the senior residents are rotated to a particular hospital. In developing the modules, faculty are asked to state the learning objectives and outcomes, provide pre-reading material and describe the format of the teaching session (e.g. small group teaching, workshop etc.).

The majority are conducted opportunistically as hour-long small group teaching sessions and embedded in the department's teaching program. 5 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. After each teaching session, an evaluation form is filled by senior residents who attended the session.

Results

94.1% of senior residents responded to the needs assessment survey. All senior residents strongly agreed or agreed that the content was appropriate for their level of understanding, the scope covered was adequate, new knowledge had been gained and they could see the relevance of the teaching sessions to their future work. They all agreed or strongly agreed that the learning objectives were clear and they were engaged in learning during the sessions.

Conclusion

Faculty development can start in senior residency and be built into existing education platforms. A needs assessment survey aids with obtaining buy-in from end users. A program- specific faculty development program for senior residents, as opposed to a generic program, enables discussion and awareness of program specific issues that faculty face, and allows the transmission of information on available resources within the program or institution that faculty can tap upon. It can promote a sense of inclusion into the anaesthesia fraternity amongst senior residents as they are recognised as future faculty.

Saturday 13 January 2018

Pisces 2, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 9

- D1049** **Perceptions and Attitudes of Undergraduates (in Clinical Years of Medical School) vs Postgraduates on Effectiveness of Role Play in Teaching Haematology-Oncology Emergencies**
Hon Lyn Tan, Singapore
- D1050** **From Clinician to Educator: Perceptions of How Occupational Therapists Learn to Become Clinical Educators in a Public Hospital**
Yi Jin Eileen Lim, Singapore
- D1051** **Using Eye Tracking to Evaluate a New Curriculum Mapping Resource**
Claire Ann Canning, Singapore
- D1052** **Correlation Between Fresno Test and Berlin Questionnaire on the Assessment of Appraisal Skills in Evidence-Based Medicine**
Chee Siong Lee, Taiwan
- D1053** **Correlation Between Academic Performance and Stress Level Among Preclinical Medical Students of Thammasat University, Thailand**
Thuchanun Junprung, Thailand
- D1054** **A Questionnaire Survey of Awareness of Physical Activity Among the Faculties of Medical College**
B K Manjunatha Goud, United Arab Emirates

E-POSTER PRESENTATION SESSION 10

- D1055** **How Medical Students Begin to Do Clinical Problem Solving**
Adrian Kee, Singapore
- D1056** **ReCollections: Increasing Reflections and Learning on Call**
John Hsu, Singapore
- D1057** **Working Hour Reduction Program of Junior Doctors in Kaohsiung Medical University Hospital**
Hui-Hua Hsiao, Taiwan
- D1058** **Pilot Study: Acceptance of Smart Home Monitoring Technology Among Older Adults in Singapore**
Cecilia Chen, Singapore
- D1059** **Teaching Opioid Risk Mitigation Strategies and the Steps of Opioid Overdose Resuscitation**
Martin Klapheke, United States of America
- D1060** **Development of a Clinical Decision Support System for Diabetes Care: A Pilot Study in Final Year Medical Students**
Kenneth Ban, Singapore

D 1049

PERCEPTIONS AND ATTITUDES OF UNDERGRADUATES (IN CLINICAL YEARS OF MEDICAL SCHOOL) VS POSTGRADUATES ON EFFECTIVENESS OF ROLE PLAY IN TEACHING HAEMATOLOGY-ONCOLOGY EMERGENCIES

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Background and Aims

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

Methods

This study aims to evaluate the perceptions and attitudes amongst undergraduates (in their clinical years of medical school) and postgraduates on the effectiveness of role play in teaching haematology-oncology emergencies. 16 undergraduates and 7 postgraduates participated in this study. Participants from both cohorts were assigned the roles of doctor, patient/family, or observers for the scenarios. A questionnaire designed to examine their perceptions and attitudes towards the teaching method was administered. The questionnaire was kept anonymous.

Results

Postgraduates perceived role play to be better than conventional didactic teaching methods ($p=0.045$) when compared with undergraduates. 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 ($p=0.047$).

Conclusion

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

D 1050

FROM CLINICIAN TO EDUCATOR: PERCEPTIONS OF HOW OCCUPATIONAL THERAPISTS LEARN TO BECOME CLINICAL EDUCATORS IN A PUBLIC HOSPITAL

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Background and Aims

There is widespread acceptance that faculty development activities for healthcare professionals should take on both formal and informal approaches. Most of these activities consist of short courses and many clinicians become educators by learning "on-the-job". Little is known about clinicians' perceptions on how these activities contribute to their learning journey as educators within our healthcare system.

In our earlier quantitative study on 56 Occupational Therapists (OTs), we found that confidence in teaching competencies were significantly associated with years of OT work experience ($p=0.000-0.0369$). This qualitative study aims to explore further on how OTs learn to become educators at the workplace based on current approaches, so as to inform future development and sustainment of faculty development programmes.

Methods

20 out of the 56 OTs from our quantitative study consented to participate in the focus groups. They were split into 2 categories based on their experiences as educators:

- (I) Junior educator: supervised students only (N=8)
- (II) Senior educator: supervised students and mentored staff (N=12).

We conducted six 60-90 minute focus group sessions between October and November 2016. Each group consisted only of either junior or senior educators. The sessions were tape-recorded, transcribed and coded. Cross checking of codes, reflexivity and thematic analysis were carried out.

Results

The 20 OT participants described various workplace activities that contributed to their development as educators. Learning on the job through exposure to different students, self-reflection of personal experience as learner, and role modelling were identified as the important contributors. Other workplace learning activities included educating non-OTs, attending courses and referring to guidelines initiated by the hospital, school and professional regulatory body.

OTs shared that they started learning to become educators when they were occupational therapy students. Their experiences of being supervised by different educators during various clinical placements form their beginning impressions of educator role models. Subsequently, when they become clinicians, opportunities to practise both clinical and educator skills familiarised them to the context of practice, settings and professional practices. This in turn helped them develop confidence in performing their role as an educator.

In terms of formal courses, junior educators find courses which involved direct clinical teaching beneficial, while senior educators are able to appreciate the relevance of attending non-education specific courses that can equip them with transferable soft skills as educators.

Conclusion

Results from this qualitative study suggest that situated learning, where clinicians are actively learning on the job, have a significant influence on developing clinicians into educators. Different formal courses may benefit clinicians at different stages of their development as an educator.

Traditionally, healthcare organisations have placed greater emphasis on development of formal courses for faculty development. With situated learning identified as a predominant approach for clinicians to develop as educators, it is recommended for healthcare organisations to be cognisant of this workplace learning opportunity and explicitly incorporate this into the design and sustainment of faculty development programmes. Specific recommendations include creating a structure of scaffold and support for new clinical educators, encouraging reflection and facilitating the growth of communities of practice amongst clinical educators.

D 1051

USING EYE TRACKING TO EVALUATE A NEW CURRICULUM MAPPING RESOURCE

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Background and Aims

A dynamic curriculum mapping visualisation tool enables educators to make connections across a curriculum, and to maintain alignment of intended curriculum outcomes with programme aims, standards and assessment. A new curriculum mapping resource was developed with the following stakeholders in mind; faculty, senior management and external reviewers. One of the many purposes of a curriculum mapping tool is to enable and enhance programme evaluation and curriculum review. The aim of this project was to evaluate, with an Eye Tracking approach, the functionality and ease of use of this resource for faculty to interrogate a 5 year undergraduate MBBS programme.

Methods

Curriculum mapping research has traditionally applied qualitative and quantitative methods via questionnaires, focus group discussions, surveys etc. We are using Eye Tracking as a novel approach to explore faculty perception of the curriculum. Such a resource will facilitate the development of a needs assessment proposal and evaluation strategy as all material pertaining to learning outcomes, curriculum content and assessment for the entire programme is deployed in one platform. Specific instructions were given to all faculty to address how they searched for specific facets of the curriculum. Using eye tracking enabled us to evaluate usability and functionality of this new curriculum mapping resource. Gaze plots were also used for qualitative analysis which focuses on how an individual scanned a display in order to detect and explain usability issues.

Results

Faculty were purposely engaged in using the curriculum map, and as a result felt empowered by the ability to interrogate their curriculum. By tracking faculty novice to this curriculum map we were able to address how functional and useable this resource was. By investigating the faculty navigational process we were also able improve the visualisation tool and address curriculum alignment and quality assurance metrics across the MBBS programme. Students were also invited to participate in this evaluation to address how their curriculum concerns were aligned with faculty. In many cases these results overlapped.

Conclusion

In developing a curriculum mapping resource, it is imperative that continued quality improvement be addressed. The use of Eye Tracking is a novel data collection method that allows us to monitor how faculty navigate the curriculum, improve functionality of the resource and ultimately enhance faculty development and student learning. These approaches are also central to programmes strategies. Eye Tracking is therefore a novel method to investigate faculty use of a curriculum mapping tool that also lends itself to evaluation of curricula and entire programmes. Faculty are often isolated in their specialty, but in navigating this resource, faculty were able to appreciate how their teaching is integrated into the curriculum as a whole. Faculty therefore improve their knowledge of the curriculum and educational practice, by awareness of how they and their subject material fit into the bigger picture. Explicit knowledge of curriculum content, outcomes and aims is essential to programme evaluation.

D 1052

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

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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 EBM competence.

Methods

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 categorised the items in both tools into 5 domains: 1. Asking question 2. Databases and evidence searching 3. Study design and internal validity 4. Magnitude of treatment effect 5. Diagnostic accuracy. Domain 3, 4 and 5 were pooled together as a competence of appraisal skill. Pearson's correlation were tested on domains 3, 4 and 5 between the 2 assessment tools. $P < 0.05$ was considered as significantly correlated. Domains 1 and 2 were not compared because items in Fresno test 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.

There was no correlation (Pearson's coefficient 0.65, $p > 0.05$) between the Fresno test and Berlin Questionnaire in the aspect of appraisal skills (pooled domains 3, 4, and 5). The Pearson's correlation coefficients for domains 3, 4, and 5 between the 2 assessment tools were 0.174 ($p < 0.05$), 0.135 ($p > 0.05$), and 0.264 ($p < 0.05$) respectively, if one of a general questions about magnitude and significance in Fresno test was removed. The correlation became significant (Pearson's coefficient 0.241, $p < 0.05$) if domain 3 and 4 were combined together.

Conclusion

We evaluated the correlation between the two objective tools in EBM. Although the Fresno test and Berlin Questionnaire cover some common domains of EBM, they differ not only in formats but also in the way they address EBM domain. We were not able to compare the tools performance in assessing skills of asking questions and evidence searching. The overall correlation in assessing appraisal skills was not significant. However, there were still some good correlation between the 2 tools at the aspect of diagnostic accuracy and treatment effect assessment.

D 1053

CORRELATION BETWEEN ACADEMIC PERFORMANCE AND STRESS LEVEL AMONG PRECLINICAL MEDICAL STUDENTS OF THAMMASAT UNIVERSITY, THAILAND

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ackground and Aims

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 in medical students. Many pieces of research about academic performance and stress level showed that they affect each other in the negative correlation. On the other hand, some pieces showed in the opposite way. However, there has been no researches on stress level and academic performance in preclinical medical students. Therefore, this study aims to illustrate the correlation between academic performance and stress level.

Methods

Cross-sectional study was conducted among Thammasat University's preclinical medical students (2nd - 3rd year) in 2016. The participants were asked to complete the questionnaire that consisted of two parts. The first part, the participants had to inform their Cumulative Grade Point Average (CGPA) referring their academic performance. The second part, the participants had to take Suanprung stress test-20 (SPST-20), which is a Thai standard stress test from the Ministry of Public Health to evaluate their stress level. The collected data was analysed 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 the certificate number 205/2559.

Results

Response rate was 75.59% ($n = 257$), where 58.37% was female. Mean of CGPA in the respondents was 3.29 ± 0.41 . The average stress level score in the respondents was 38.14 ± 16.05 from 100, which was interpreted as moderate stress. The percentage of respondents with mild, moderate, high, and severe stress were 24.90%, 36.96%, 31.30% 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 explained that higher level of stress was slightly associated with poor academic performance. 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 was not strong.

D 1054**A QUESTIONNAIRE SURVEY OF AWARENESS OF PHYSICAL ACTIVITY AMONG THE FACULTIES OF MEDICAL COLLEGE**

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Background and Aims

The physical activity in teaching faculties is an important aspect to maintain good health. This not only prevents the various non-communicable diseases but also has role in secondary prevention of diseases. It is also proven that the growing epidemic of obesity mostly in children is linked to recent decline in physical activity levels both in home, school and working places. Social class is thought to have a bearing on physical activity. On basis of this, the survey was done to assess the physical activity levels in higher social class population i.e. on teaching faculty of Melaka Manipal Medical College, Manipal, Karnataka, India.

Methods

Questionnaire study was implemented in 2010 as the design of this research without any manual intervention. No experiment was conducted in the research. Questions were specific and related to the physical activities in home and also in working environment.

Results

The study found that in medical college the lifestyle is restricted mostly to sedentary and moderate work. Most of faculties were using bike and cars to reach their working place and also we found the physical activities in the form of exercise and sports activity were lacking.

Conclusion

In addition to the importance of a physical activity professional's potential influence on others as a model, engaging in a physically active lifestyle is very important for personal reasons. 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.

Conclusion: Infrastructure improvements such as sports activity in colleges among faculties, combined with regular exercise provide additional physical activity that would help reduce obesity and non-communicable diseases.

D 1055

HOW MEDICAL STUDENTS BEGIN TO DO CLINICAL PROBLEM SOLVING

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Background and Aims

To evaluate how medical students begin to learn and practice diagnostic reasoning.

Methods

As an introduction to structured, deliberate clinical problem solving practice, in their first clerkship year, third-year medical students were given a short lecture on the principles of diagnostic reasoning. Each was given a one-page handout detailing a structured approach to clinical diagnosis and was encouraged to apply this framework 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. They were also provided with a free-text section to describe the strategy they were using.

Results

Three hundred students were sampled. Seventy-seven out of 94 (81.4%) students who responded indicated that they have learnt of or been practising with a well-defined clinical reasoning method for diagnosis. Students were introduced to these strategies via Adult Medicine rotation (46.2%), self-reading (20.0%), Surgical rotations (15.4%), Paediatric Medicine (9.2%), via a classmate (6.2%) and Family Medicine (3.1%). The types of clinical reasoning method used were diagnostic schema (52.3%), case-based exemplars (18.5%), SRP (16.9%), checklists (12.3%). None used decision support systems. Half of the students reported that they practised these methods "often", 33.8% "occasionally" and 7.2% "all cases" whilst 6.2% rarely and 3.1% never practised. When asked about Bayes' Theorem, nearly half (45.7%) of respondents were able to select the most appropriate setting for its application.

Conclusion

This study revealed several insights into how medical students begin to learn and develop their diagnostic reasoning skills. It is of note that 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.

D 1056

RECOLLECTIONS: INCREASING REFLECTIONS AND LEARNING ON CALL

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Background and Aims

All training programs recognise that clinical experience is essential for learning, but very often, resources are concentrated on structured teaching sessions and rich clinical material from activities such as night calls are not fully utilised.

Residents gave feedback that they see interesting and undifferentiated patients on call, and manage many emergencies at night. However, due to the patient load, need for expedient reviews and the fact that the night coverage differs from day time coverage, residents may not get a chance to discuss or follow up on these cases and valuable learning points for these patients may be lost.

Methods

A resident workgroup was tasked to look into in-service education to maximise the educational value of calls. This cumulated in a resident-led initiative of sharing on call experiences, named ReCollections. The primary objective is to provide a platform for residents to reflect, and share their on call experiences which have influenced their personal growth as a physician. This is particularly so for difficult clinical scenarios. The secondary objectives are to foster a culture of reflection, as well as provide an opportunity for clinical quality improvement by highlighting important patient care issues via peer-review learning.

Residents were invited as presenters to share their clinical encounters during recent calls. These need not be limited to encounters with patients, but may also include that with the family members, other doctors, or allied health staff. It may also be a clinical scenario, wherein there were medical dilemmas or difficult management decisions to be made.

Each session was facilitated by senior resident with faculty. The teachings were conducted monthly, with each session lasting about 1.5 hours long, and covering 2-3 clinical encounters. The presenters and target audience would alternate monthly between 1st year residents working as house-officers, and all other residents working as medical-officers. The intention is to tailor the teaching material according to training level, and keep the groups small to facilitate discussion.

Results

ReCollections was started in February 2017. The content not only covered medical knowledge and patient care issues, but also delved into systems based practice, healthcare processes, communications skills, ethical principles, practice based learning and improvement. For instance, the importance of a clear handover process on patient care was discussed, and moral dilemmas in discussing extent of care for critically ill patients were also explored.

Qualitative feedback from the residents has been positive, who felt that the teaching helped to refine ethical and communication skills in the management of patients, and improve the administrative process of handover. Guidance by seniors has allowed residents to identify and rectify misconceptions, and fill in any knowledge deficiencies. Being a peer-driven process, ReCollections has also helped to develop the learning culture, and promotes a habit of reflective learning.

Conclusion

ReCollections is a way to reflect and learn from calls, and more attempts should be made to explore further ways to maximise learning from service.

D 1057

WORKING HOUR REDUCTION PROGRAM OF JUNIOR DOCTORS IN KAOHSIUNG MEDICAL UNIVERSITY HOSPITAL

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Background and Aims

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.

Methods

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~Dec 2016), we locked down duty arrangement system by electronic technologic method to make sure the rules were completely followed. In the meantime, 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.

D 1058

PILOT STUDY: ACCEPTANCE OF SMART HOME MONITORING TECHNOLOGY AMONG OLDER ADULTS IN SINGAPORE

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Background and Aims

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 ageing 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.

Methods

Participants from six centres were recruited to participate in a survey. Based on the well-established Technology Acceptance Model, seven factors were evaluated on their correlations and effects on older adults' behavioural intention to use. Structural Equation Models were also constructed to analyse direct and indirect impacts of factors on attitude towards use and 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 (ATU) and Behavioural Intention to Use (BIU) were found to be significantly correlated with high levels of Perceived Usefulness (PU) ($r = 0.41, p < 0.001$ and $r = 0.30, p = 0.007$), Perceived Ease of use (PE) ($r = 0.48, p < 0.001$ and $r = 0.31, p = 0.004$) and Social Influences (SF) ($r = 0.46, p < 0.001$ and $r = 0.51, p < 0.001$), but were not significantly impacted by age, familiarity and perceived potential disadvantages. With regards to integrating multiple factors together, PU had a stronger indirect effect on influencing BIU through mediating factor ATU (PU \rightarrow ATU, $\beta = 0.349, p < 0.001$, ATU \rightarrow BIU $\beta = 0.381, p < 0.001$, indirect pathway $\beta = 0.133$). SF had both significant direct effects on BIU ($\beta = 0.361, p < 0.001$) and indirect effects on BIU through ATU (SF \rightarrow ATU, $\beta = 0.389, p < 0.001$, ATU \rightarrow BIU, $\beta = 0.243, p < 0.05$). Aside from these factors, major categories such as facilitating conditions (patient education on technology usage), socioeconomic and educational background, living conditions, technology literacy and older adults' character or personal values were also found to be important from interviews with the participants.

Conclusion

In conclusion, smart home providers may find these factors useful in marketing consumer-centric devices that will benefit older adults. These factors may not only be limited to smart home monitoring technology, but can also be extrapolated to other devices that may be used to promote health and wellness for older adults in future. 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.

D 1059

TEACHING OPIOID RISK MITIGATION STRATEGIES AND THE STEPS OF OPIOID OVERDOSE RESUSCITATION

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Background and Aims

From 1999 to 2014, more than 165,000 people in the United States died from overdose related to opioid pain medication, and United States 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.

Methods

The coverage of opioids during the four year curriculum at the University of Central Florida College of Medicine was reviewed and additional didactic and training experiences added, with incorporation of recent clinical guidelines published by the Centres for Disease Control, the American Heart Association, and the Substance Abuse and Mental Health Services Administration.

Results

One new didactic, involving joint teaching by Psychiatry and Family Medicine Clerkship faculty, utilises an interactive, web-based module with a simulated, evolving clinical case and interactive quizzes to help consolidate knowledge and promote critical thinking. This new module, which incorporates new clinical guidelines on risk mitigation and overdose resuscitation, will be demonstrated, and relevant teaching handouts will be provided.

Conclusion

New clinical guidelines mandate that medical educators update the training of students in opioid risk mitigation strategies and overdose resuscitation. Use of interactive, multimedia online learning modules, and multidisciplinary collaboration in teaching such as by Psychiatry and Family Medicine faculty, can facilitate such training experiences in the treatment of pain and prevention of opioid addiction and overdose. Free online access to a training module will be demonstrated.

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D 1060

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

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Background and Aims

Management of complex chronic diseases such as diabetes requires the assimilation and interpretation of multiple laboratory test results. Traditional laboratory reporting systems used in clinics typically display laboratory results in a piecemeal and segregated fashion. This makes the assembly and interpretation of results related to diabetes care challenging. To address this, 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.

Methods

A diabetes-specific clinical decision support system (Diabetes Dashboard) interface was developed to displaying glycaemic, lipid and renal function results, in an integrated form with decision support capabilities, based on local clinical practice guidelines. The clinical decision support system included (i) a dashboard feature that graphically summarised all relevant laboratory results and displayed them in a color-coded system that allowed quick interpretation of the metabolic control of the patients; (ii) an alert module to alert users of tests that are due for repeat testing and (iii) an interactive graph module to display the trends of the laboratory results over time.

To evaluate the effectiveness, we conducted an online survey using the Diabetes Dashboard and the existing laboratory reporting system using 8 simulated clinical case scenarios among final medical students. They were assessed on (i) accuracy of interpretation, (ii) speed of interpretation, and (iii) user experience.

Results

Thirty-four participating final medical students were randomised into the Diabetes Dashboard and existing laboratory reporting interface groups. When compared to the existing laboratory reporting interface, the Diabetes Dashboard significantly improved the identification of abnormal laboratory results (96% vs. 85%, $p < 0.0001$), of the long-term trend of the laboratory tests (89% vs 72%, $p = 0.0013$) and of tests due for repeat testing (85% vs 65%, $p = 0.0023$).

Conclusion

In conclusion, we have developed and evaluated the use of the Diabetes Dashboard in final year medical students, and demonstrated that it can improve interpretation of results used in the management of diabetes. We anticipate that decision support dashboards will be most helpful when deployed in an outpatient setting, where physicians can quickly make clinical decisions based on summarised information and be alerted to pertinent areas of care that require additional attention.

Saturday 13 January 2018

Virgo 1, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 11

- D1061** **A Visual Mnemonic for Learning ACGME Six Core Competencies – The “ACGME Core Competencies Body Mind Map”**
Cheng-Yuan Wang, Taiwan
- D1062** **Role and Educational Value of Emerging Technologies in Health Professionals’ Education: Virtual Reality in CPR**
Marie Ann Mae En Wong, Singapore
- D1063** **Improving General Internal Medicine Continuing Medical Education Using Curricular Development and Change Management Constructs – Division of Advanced Internal Medicine, National University Health System, Singapore**
Khin Saw Myint, Singapore
- D1064** **Sexual Medicine Education: Confidence Levels of Singaporean Doctors in Sexual Medicine**
Yi Heng Seow, Singapore
- D1065** **Beyond the Lamppost – A Proposal for a Fourth Wave of Education for Collaboration**
Elise Paradis, Canada
- D1066** **Exploring the Experience of Undergraduates in E-Tutoring**
Chee Fen Chia, Malaysia

E-POSTER PRESENTATION SESSION 12

- D1067** **Motivation, Mindset and Grit of Residents Preparing for PACES**
Darius Beh, Singapore
- D1068** **Using Instructional Online Web-Page to Enhance Visual Recognition of Hydronephrosis and Its Severity**
Khalid Mohammed Ali, Singapore
- D1069** **Clinical Educators’ Perceptions of the Role and Educational Value of Augmented Reality in Medical Education**
Benedict Tan, Singapore
- D1070** **Medical Students’ KCSE Grade and Their Relationship to Academic Performance: A Case of Egerton and Moi Universities, Kenya**
Ronald Obwoye, Kenya
- D1071** **Nature or Nurture - A Cyclic Action Research Report on Collective Competence**
Anbarasi K, India

D 1061

A VISUAL MNEMONIC FOR LEARNING ACGME SIX CORE COMPETENCIES - THE "ACGME CORE COMPETENCIES BODY MIND MAP"

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Background and Aims

The importance of the Accreditation Council for Graduate Medical Education (ACGME) six core competencies (i.e. system based practice, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and patient care) had been emphasised and endorsed by many medical education authorities around the world, 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. We advocated that the premise of implementing ACGME six core competencies is to remember them, therefore, we proposed the "ACGME six core competencies body mind map" as a mnemonic to help learners memorise the six core competencies in an interesting way.

The aim of the study is to test the teaching effect of the "ACGME six core competencies body mind map" by testing the learners' memory retention rate immediately and five days after the curriculum.

Methods

An introductory lecture of the ACGME six core competencies based on the visual mnemonic "the ACGME core competencies body mind map" were delivered to 203 undergraduate medical students in a training course in Kaohsiung Medical University Hospital.

The "ACGME core competencies body mind map" is a visual mnemonic which ask the learners to imagine that they work under the system, they used their right brain to memorise medical knowledge, they used their left brain to perform logical thinking and "practice based learning and improvement", they use their mouth to do "interpersonal and communication skills", they use their heart to achieve "professionalism", and they use their hands to complete "patient care". This imagination correlated the learner's body with the six core competencies, which was assumed to be beneficial for the learning of six core competencies.

The learners were not informed that there will be a written test after the curriculum. All learners received a written test which required the learners to recall the "ACGME six core competencies body mind map" and write down the title of six core competencies right after and five days after the curriculum. The mean memory retention rate of each competency was calculated and compared.

Results

At day 1 test, the retention rate for system based practice, medical knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, and patient care was 97%, 98.5%, 97%, 98.5%, 97%, 99%, respectively

At day 5 test, the retention rate for system based practice, medical knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, and patient care was 94.6%, 97%, 96%, 96%, 94.6%, 98%, respectively

The decay of retention rate from day 1 to day 5 for system based practice, medical knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, and patient care was 2.4%, 1.5%, 1%, 1.5%, 2.4%, 1%, respectively.

Conclusion

The "ACGME core competencies body mind map" is an effective visual mnemonic for memorising the title of the ACGME six core competencies. The memory retention rate of all six competencies at day 5 were still greater than 94.6%. Whether good memory retention improve implementation needs further study.

D 1062

ROLE AND EDUCATIONAL VALUE OF EMERGING TECHNOLOGIES IN HEALTH PROFESSIONALS' EDUCATION: VIRTUAL REALITY IN CPR

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Background and Aims

Cardiac arrest survival remains low despite Cardiopulmonary Resuscitation (CPR) intervention. This has been attributed to delayed time to CPR commencement, and unideal CPR quality. The Formula for Survival (2003), developed by the International Liaison Committee on Resuscitation, introduced hypothetical determinants of survival from CPR, namely, science, education, and local implementation. Crucial to this study is education, which can narrow gaps between actual and ideal CPR execution, and hence serve as a strategy to overcome the pressing issue of unideal CPR survival. The advent of technology has seen progress in many fields, including education. An example is Virtual Reality (VR), which is a form of technology that allows users to step into a three-dimensional, computer-simulated world. One of the key benefits of VR in education is its immersive quality, which allows theory and concepts to be represented visually and realistically. This has increased student engagement in various fields of education, resulting in more effective learning, as demonstrated by enhanced memory, speed, accuracy, and real-life application.

Research has shown technological benefits of VR in CPR training, such as improved student skills. However, more work remains in understanding the pedagogical value of VR in CPR education. Hence, this study aims to understand perceptions of CPR instructors towards the pedagogical value VR for CPR education.

Methods

30 CPR instructors were surveyed using semi-structured interviews. The participants were interviewed individually on their views towards current CPR education, and the use of VR for CPR education, before and after interacting with a CPR VR simulation. Responses were subject to qualitative content analysis, and researchers iteratively identified and grouped open codes into subthemes and thereafter into broader themes.

Results

It emerged that a theme that resonated with the CPR instructors is that current CPR education is limited due to unideal test preparation (resources, practice, motivation, emotional readiness) and performance. After interacting with the CPR VR simulation, the instructors articulated that VR would address the pedagogical issues currently plaguing CPR teaching. In particular, by improving fidelity, engagement, resource conservation, and memory enhancement. VR is viewed by CPR instructors as having potential as a blended learning tool, targeting lay public, new learners, and qualified persons. VR can be useful in sparking the interests of lay public in learning CPR, helping new learners with memory and skills mastery processes, and serving as a practice tool for qualified persons.

Conclusion

VR has a potential role in CPR education because it can overcome limitations of current CPR education, making it a promising tool for future CPR education.

If suggested ideal VR features (fidelity, engagement, resource conservation, memory enhancement) are incorporated into the CPR VR simulation, it can be tested on identified target populations, using proposed methods. Perceived pedagogical benefits of VR for CPR education can then be elicited from such populations, and changes can be made to current CPR education accordingly, bringing us closer to the goal of improved CPR education and consequently, decreased cardiac arrest deaths.

D 1063

IMPROVING GENERAL INTERNAL MEDICINE CONTINUING MEDICAL EDUCATION USING CURRICULAR DEVELOPMENT AND CHANGE MANAGEMENT CONSTRUCTS. DIVISION OF ADVANCED INTERNAL MEDICINE, NATIONAL UNIVERSITY HEALTH SYSTEM, SINGAPORE

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Background and Aims

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 included 4 of weekly didactic sessions per month covering geriatric, general medical and sub-specialty topic reviews, journal clubs and residents' case presentations delivered to an audience ranging from senior consultants to house officers who rotated to AIM for the particular month.

The CME program was not informed by the scope of general internal medicine or learner needs. There were variability in the presence of learning goals and objectives and educational strategies and pedagogy were diverse. Lastly, there was not an ongoing evaluation of the sessions or curriculum as a whole.

We aimed to implement a robust CME program for our division fulfilling all learners' needs.

Methods

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 utilised 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 by work groups were formed as following (with frequency); Subspecialty Senior Residents (SR) Teaching(Weekly), 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's Journal Club(Twice Monthly), SR-Led teaching(Every 5th Wednesday of the month) and Division Head's Morbidity and Mortality Round(Every 5th Wednesday of the month).

Process Documents for each categories were prepared by different work groups detailing Context, Learning Objectives, Pedagogy, Topic Ideas and Logistics.

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

Conclusion

By using a structured process of curricular development and change management, we were able to rapidly implement a robust CME program for our division that anecdotally is well received.

D 1064**SEXUAL MEDICINE EDUCATION: CONFIDENCE LEVELS OF SINGAPOREAN DOCTORS IN SEXUAL MEDICINE****Seow YH, Tan QA***Office of Medical Education, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore***Background and Aims**

Current data suggests an increasing need for sexual health (SH) services in Singapore. However, SH can be a difficult topic for both doctors and patients. Studies conducted overseas revealed that many doctors are not confident in SM. No study to date investigated competencies of Singaporean doctors in SH. The aim of this study was to evaluate if Singaporean doctors are adequate in managing SH needs based on confidence and comfort levels.

Methods

A cross-sectional descriptive study was conducted on doctors affiliated to a medical school in Singapore. A 16-item questionnaire was developed based on the undergraduate competency recommendations for sexual medicine (SM) submitted to the International Society of Sexual Medicine, assessing respondents' self-reported attitudes, knowledge and skills (AKS). A 5-point Likert Scale was used. The questionnaire was administered using an anonymous web-based survey. Respondents' gender, year of graduation, location of basic medical training and area of specialisation were also captured. The questionnaire's validity and reliability was adequate. Statistical analysis was conducted using SPSS 24.0.

Results

55 responses were received from doctors across a broad range of specialities. In the attitudes section, respondents agreed that SH is important to patients and it was important for doctors to address these concerns. Greater variation and lower mean self-reported confidence was seen in the knowledge and skills sections. In the knowledge section, mean self-reported confidence for anatomy and physiology was significantly higher than the management of sexual dysfunction, psychosocial influences on sexuality and sexual expression in special populations ($p < 0.001$). Respondents reported significantly lower confidence in making diagnoses of sexual health concerns, management of sexual health concerns and pharmacologically induced sexual dysfunction and understanding of behavioural therapies for sexual dysfunction compared to taking a sexual history in the skills section ($p < 0.001$). Only 10.9% of doctors were very likely to explore SH concerns with their patients. General Practitioners and Family Physicians (16.4%) and respondents with postgraduate training in SM (21.8%) scored significantly higher in AKS. Mean scores in AKS were not affected by gender, location of medical training or number of years in practice.

Conclusion

As a whole, confidence levels in SH knowledge and skills were found to be low. Strengthening knowledge and skills competencies would enable doctors to better meet the SH needs of patients. Singaporean doctors reported higher confidence in topics commonly covered in medical school and improved with postgraduate training. Enhancing undergraduate training in SM together with encouraging postgraduate education could possibly improve confidence levels in SM. Future studies can determine the most effective method of delivering SH content to trainees and a greater number of doctors can be surveyed to allow for further subgroup analysis.

D 1065**BEYOND THE LAMPOST-A PROPOSAL FOR A FOURTH WAVE OF EDUCATION FOR COLLABORATION****¹Paradis E, ²Whitehead CR***¹Leslie Dan Faculty of Pharmacy and Anaesthesia, Faculty of Medicine and ²Department of Community and Family Medicine, Faculty of Medicine, University of Toronto, Canada***Background and Aims**

Interprofessional education (IPE) is an increasingly popular educational intervention that aims to educate healthcare students to be better collaborators by enabling them to "learn with, from and about each other". This rising popularity is visible in the explosion of scholarship on IPE over the past decades, as well as in the multiplication of countries where this scholarship is produced. This paper aimed to critically review the literature on IPE historically to evaluate its impacts and suggest avenues for future research and implementation.

Methods

This paper employed a critical review methodology, which helps advance our understanding of IPE. We build an argument that is justified by a combination of literature, empirical data or examples, and social scientific concepts.

Results

We briefly describe three historical "waves" of IPE, which we call: "managing the workforce through shared curriculum", "maximising population health through regulation", and "fixing individuals to fix healthcare". Using insights from the social sciences, we then discuss six reasons why the third, contemporary wave of IPE is likely to fall short of its aims: IPE (1) is logistically complex and costly, (2) is developmentally inappropriate, (3) has not yet demonstrated impact on key outcomes, (4) insufficiently engages with theory, (5) rarely addresses power and conflict, and (6) puts undue burden on individuals working in an inertial healthcare system.

Conclusion

Based on insights from our review, we share our vision for a fourth wave of education for collaboration, which we call "addressing workplace systems and structures." This fourth wave would combine uniprofessional education for collaboration with practice-based solutions. By the end of this talk, we hope that readers will be able to identify the current limitations of our IPE interventions, and that they will be inspired to transform the way they think about and enact education for collaboration: beyond the lamppost.

D 1066

EXPLORING THE EXPERIENCE OF UNDERGRADUATES IN E-TUTORING

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Background and Aims

Teaching is relearning and proves to be beneficial to the both learner and tutor. Based on this principle, undergraduates who have engaged in problem based learning (PBL) as students, would relearn as tutor facilitating secondary school learners to engage in PBL.

The pilot study explored the experience of undergraduates as e-tutors for secondary school learners as volunteers in service learning. The underlying theory is based on 'Kolb's Experiential Learning Cycle'.

The aim was to harness undergraduates' interest and availability as a resource in bridging the gap of tech-savvy teachers in an endeavour to transform secondary education through borderless learning.

Methods

Four undergraduates, purposefully selected based on their interest in the project:

1. Participated in a one day training to prepare them as e-tutors
2. Tutors designed PBL triggers based on mathematics and science
3. Collaboratively planned four problem based Learning (PBL) lessons for each trigger
4. Facilitated learning at a distance, real time on e-platform using Moodle, Google Hangout and Padlet over a six month
5. Reflected on the progress of their tutees and their role as tutors.

The four tutors and 12 students worked in two groups.

Based on qualitative method of phenomenology (van Manen 1990), researchers developed a composite description of the essence of tutors' experience (in terms of what and how) of the individual through their reflective report and interview at the end of the project.

Results

Several themes emerged from the analysis of interview transcripts

- Training helped in structuring learning based on intended learning outcomes and in developing learning and teaching guide.
- Tutees looked up to tutors for guidance. Unfamiliar with PBL approach, tutees waited for direction and input but had to seek out relevant information to apply. Tutors asked relevant questions to guide thinking and shaping understanding useful
- Tutors overcame feelings of "anxiousness, scared, unsure about their role" especially on their authority in classroom interaction,
- Orientation towards the intended learning outcomes restricted tutee's imagination
- Debrief session was group reflection on challenges, sharing of achievements, collaborating for better outcomes
- With each progressive session, tutors observed tutees improvement in defining the learning issues and group dynamics for completion of task
- Tutors acknowledge differences in thinking and experience with tutees. Tutors noted level of engagement was dependent on their interest in the PBL scenario and is gender dependent.
- Technical hiccups during implementations. With synchronous audio, visual, and written capability, e-tutoring were not as fulfilling as face to face learning without full view of the environment and body language, further tutee could divert the view of the camera.

Conclusion

The pilot study provided insight to the:

- steep learning achieved by undergraduate tutors indicating the potential in engaging undergraduates in e-tutoring
- challenges in setting up e-tutoring platform and learning environment
- "technological" approach in teaching and learning where knowledge is unlimited
- facilitation and class management skills in tutoring
- Communication skills for online interaction for both students and tutors.

The potential of e-tutoring with undergraduates can be explored.

D 1067**MOTIVATION, MINDSET AND GRIT OF RESIDENTS PREPARING FOR PACES*****Beh D, Sia C, Tan BY, Mok SF, Kee A****Internal Medicine Residency Program, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

Mindset and Grit have become popular theories in modern achievement psychology. A fixed mindset is characterised by the belief that basic qualities, such as intelligence and talent are fixed traits. This is in contrast to a growth mindset where people believe that these most basic traits can be developed through dedication and hard work. 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.

PACES (Practical Assessment of Clinical Examination Skills) - a post-graduate membership examination conducted by the Royal College of Physicians - is designed to test the clinical skills and knowledge of internal medicine trainees preparing to enter specialist training.

Methods

Internal Medicine Residents from a single training hospital preparing to sit the October 2017 diet of the PACES examination were asked to complete an online survey. The questionnaire was designed to determine their educational history, level of preparation, degree of confidence and perceptions of difficulty. Two sections of the survey consisted of the 20-point Mindset Quiz (CS Dweck) and 12-point Grit scale (AL Duckworth), which determines the type of mindset and grit measurement respectively.

Results

20 responses were collected. The mean year of Residency was 2.8 ± 0.4 , the mean number of years since graduation was 2.5 ± 0.7 . For the majority of the Residents - 95% (n=19) - this would be their first attempt at PACES.

In terms of level of preparation, Residents were asked to report their self-perceived level of preparedness using a 5-point Likert scale, where 1 represents "no preparation" and 5 represents being "very prepared". The mean score was 2.0 ± 1.0 . 40% (n=8) of Residents felt confident of passing PACES on their first attempt and 45% (n=9) had already attended a PACES preparatory course.

The mean Mindset score was 35.7 ± 2.9 , and 45% (n=9) of Residents had a fixed mindset with some growth ideas, whilst 55% (n=11) had a growth mindset with some fixed ideas.

Their mean Grit score of the was 3.4 ± 0.4 .

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.

Residents who were less confident of passing the PACES examination had higher Grit scores ($p=0.040$). However, when compared with educational history, level of preparedness and perception of difficulty, no other significant correlations were found.

Lastly, those with more years of training had higher grit scores than those with less years of training.

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 the other fields 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.

D 1068**USING INSTRUCTIONAL ONLINE WEB-PAGE TO ENHANCE VISUAL RECOGNITION OF HYDRONEPHROSIS AND ITS SEVERITY*****Ali KM, Chan G, Peng LL, Lau TP****Emergency Medicine Department, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

The accurate diagnosis of hydronephrosis and its severity at the point of care in the emergency department expedites the care of patients with this condition. Doctors are generally not confident in diagnosing the grades of severity of hydronephrosis.

We aim to determine whether the introduction of a web-based educational module increases the confidence 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.

Methods

This is a single center, prospective study, this study includes creating a dedicated instructional web-page to diagnose and appreciate different grades of hydronephrosis. The participants will be doctors working in emergency medicine department. The duration of the study will be 6 months, the participants will be invited to visit online webpage one time only.

We will measure their improvement through their response to pre-and post-test each one consist of 20 questions, normally will take 20 minutes to complete each pre-and post-test. This is an anonymous study, there will be no collection of personal data. Broad titles of the participants will be collected to enable subgroup analysis. Broad titles are a specialist, senior residents, residents (emergency medicine and other), medical officer and resident physician. In order to keep the study completely anonymous, the data will be coded and collected through a third party (admin staff) with no relation to the study.

All ultrasound images have been verified by two specialists, one is radiologist with a subspecialty in ultrasound and other is a specialist in emergency medicine with subspecialisation in emergency ultrasound.

Results

This is an ongoing study, the recruitment will cease by end of October 2017.

In the preliminary result, of 32 participants (11 specialists and 21 non-specialist) the pretest result was 14/20, 70% improved to 16/20, 80%.

In the specialist group, the participant performance improved from 15/20, 75% to 16.5/20, 82.5%. The result was more significant in non-specialist group, the performance at pretest 13/20, 65% improved to 16/20, 80% in post-test. In the subgroup analysis, the most significant improvement was in junior residents performance from 13/20, 65% in pre-test to 18/20, 90% in post-test, although the sample number in this group is only 4. All other groups of non-specialist, their performance showed improvement in their performance in post-test compared to pre-test.

Conclusion

This scholarly project has the potential of enhancing visual recognition of hydronephrosis and its grades to expedite the management of the patient and help with the proper disposition of the patient in emergency medicine department. The initial preliminary result revealed a significant improvement in participants visual recognition of hydronephrosis and it's graded.

D 1069

CLINICAL EDUCATORS' PERCEPTIONS OF THE ROLE AND EDUCATIONAL VALUE OF AUGMENTED REALITY IN MEDICAL EDUCATION

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Background and Aims

Augmented reality (AR) is both a technology and a concept that creates educational experiences by integrating physical and virtual environments. A common type of AR is visual augmentation in the form of digital information projected onto a real physical context, enhancing the user's perception of reality. Recent studies have focused on the usefulness of AR in anatomical and surgical education. Reports on use of AR in other areas of medical education has been limited. The aim of this study was therefore to revisit AR across the medical education areas by exploring its role and potential value among clinical educators.

Methods

A questionnaire was distributed to doctors in various departments of an academic public hospital in Singapore. The questionnaire qualified respondents' experience with different types of medical simulations and their perceptions towards the use of AR in medical education. The focus was on exploring AR's ability to augment physical contexts, provide feedback and improve health outcomes. Using descriptive statistics, the data collected was analysed according to respondents' demographics to correlate participants' perceptions to their experiences with simulation based medical education.

Results

A total of twenty-six responses were obtained. About 70% of the respondents were positive to the potential of AR's ability to provide context and feedback. As for the educational value of AR, respondents from every specialty surveyed believed that AR is a powerful tool for teaching procedural skills. Respondents also believed that teaching of visual based subjects in medicine, such as anatomy, will be able to benefit from use of AR. However, AR would be less useful in the attitudes domain of medicine which relates to how medicine is practiced.

Conclusion

This study has highlighted the positive attitude toward AR in general, and more specifically in anatomy and surgery. Procedural skills were seen as where AR could provide an educational value. The perceptions seem to strongly relate to the type of AR application available and as new areas are addressed, the role and educational value of AR may change with the learners and educators increasing exposure to new forms of AR.

D 1070**MEDICAL STUDENTS' KCSE GRADE AND THEIR RELATIONSHIP TO ACADEMIC PERFORMANCE: A CASE OF EGERTON AND MOI UNIVERSITIES, KENYA****¹Obwoye R, ²Keraro F, ³Mosol P**

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Background and Aims

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 need to have minimum university entry requirements and cluster subjects for admission unto the medicine and surgery (MBChB) programme. The study aimed to compare the relationship between Medical Student's KCSE grade and their performance in preclinical and clinical levels at Medical schools of Egerton University (EU) and Moi University

Methods

The study's research design was Retrospective record review (3R) of medical students of academic year 2007/08, 2008/09 and 2009/10 as cohort classes of Egerton University and Moi University. This study was conducted in Egerton University and Moi University, medical schools. Both Universities admit medical students sponsored by KUCCPS and SSP students. This study's Population was Public Universities' Medical students (MBChB) who had been examined at both preclinical and clinical course levels. Students of academic years 2007/08, 2008/09 and 2009/10 were the accessible population. Admission characteristic were an independent variable and academic performance a dependent variable. This study used a Data sheet document to capture data from Academic Records offices.

Results

The students' performance at preclinical and clinical courses is not influenced by their KCSE grades at admission at MU and EU. KCSE English and Chemistry grades positively impact on preclinical performances. Biology, Mathematics, Kiswahili and Chemistry positively influence performance in Clinical courses. Performance in Preclinical courses like Medical Biochemistry, Medical Physiology, and Pathology can predict performance in clinical courses. The diploma program (in-service) does not influence performance in preclinical courses as it does in clinical courses. Performance in preclinical courses is a predictor for performance in clinical courses. KCSE aggregate grade at admission has no influence on students' performance in preclinical and clinical courses at MU and EU.

Conclusion

There is no statistically significant relationship between Medical Students' KCSE grade(s) with performance in preclinical and clinical courses at MU, EU or Combined schools scores. KCSE aggregate grades at admission do not influence Students' performance in preclinical and clinical courses.

D 1071**NATURE OR NURTURE - A CYCLIC ACTION RESEARCH REPORT ON COLLECTIVE COMPETENCE****¹K Anbarasi, ¹Deivanayagam K, ²P.V Vijayaraghavan**

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Background and Aims

Statement of problem:

Educators assume students acquire skills required for professional practice somehow at the time of graduation. Students as individuals are characterised by some confines that limit their collaborative ability, and there is a high necessity to inculcate the collective skills in the academic grounds.

Hypothesis:

1. The health profession education should focus on skills required for meeting the challenges in the professional environment.
2. Collective competencies are anticipated to bring professional excellence among dental practitioners.

Aim:

To introduce managerial skills in undergraduate dental education around the fundamental concept of collective competence.

Methods

The research was conducted as a team project in our University dental college as weekly two hours program for 30 weeks. The program is offered to 79 CRI) students (Compulsory Rotatory Internship).

Action plan:

In an exit interview with graduating students, faculty members came to know about the students' uncertainty on job-related managerial skills and the requirement for additional training in a dental clinic to develop these skills before starting their career. Following this, a semi-structured interview was conducted with Delphi panel comprising experts (n=27) and student focus group (n=50) to analyse the "requirements problem." Delphi members' experience and expectations were included to prepare the prerequisite template for collective competency framework. Ten managerial skills were finalised for prototype program based on above 50% of total response received.

Action research:

A combination of functional and social approach was used to achieve collective competence. Trainee to practitioner competence was developed by clustering the corporate and private team set-up, trading, economic and social aspects. Ten fundamental managerial skills were divided into 22 sub-competencies. To create a thriving dental practice, ten focused interactive sessions were organised on the identified topics.

1. To enhance knowledge on finance management, trading dental materials, instruments/training sessions were focused on sixteen topics through professional collaboration and workshops.
2. To enhance team/corporate health sector practice, ten training sessions were focused on strategic thinking and leadership qualities.
3. Four sessions were allotted for reinforcement. Finishing feedback was obtained using a close-ended questionnaire with 5 points Likert scale response from 45 participants.

Results

Out of 79 total participants, 56% (n=45) attended the entire series. Outcome analysis was done by applying descriptive statistics

Highlights of the feedback report:

1. Majority of the participants strongly agreed on the importance of collective competence and the necessity for including it in the curriculum (mean = 4.8).
2. Participants strongly agreed that the program revealed solution for carrier related issues (mean=4.5) and can be translated to their carrier (mean=4.6).
3. The finance aspect (mean=3.6) and team practice (mean=3.5) were taken up the participants but need to be addressed in a more effective method.

Conclusion

This research was focused on a promising practice method for the potential benefit of implementing collective skills among undergraduate students. Triangulation of Delphi results, participants' interaction, and feedback report proved that collective competence is a top-priority requisite for the dental curriculum and formal training is necessary to achieve 360 degree professional competence and hence proves our hypothesis.

Saturday 13 January 2018

Virgo 2, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 13

- D1073** **Creating Classroom Interaction by Interactive Questioning: An Action Research Study**
Eugenie Phyu Thwin, Singapore
- D1074** **Evaluation of the Constructing Care Collaboration**
Tricia, Liting Chew, Singapore
- D1075** **Understanding and Practice of Self-Regulated Learning in Newly Graduated Physiotherapists in Singapore**
Hwee Kuan Ong, Singapore
- D1076** **Therapeutic Reasoning and Context Learning by Simulation: A New Approach in Teaching Antibiotic Prescribing in Clinical Pharmacology**
Thilanka Seneviratne, Sri Lanka
- D1077** **Barriers and Challenges Towards Use of Self-Directed Learning in ACGMEI Multi Cultural Paediatric Residency Program: The Residents Perspective**
Manasik Hassan, Qatar
- D1078** **Faculty and Senior Resident Mentorship in Orthopaedic Surgery Residency: A Bane or Boon?**
Min Jia Chua, Singapore

E-POSTER PRESENTATION SESSION 14

- D1079** **Perception of Educational Roles Among Faculty of a Tertiary Level Hospital in Singapore**
Jason Chang, Singapore
- D1080** **Gamification of Medical Education**
Eng-Tat Ang, Singapore
- D1081** **Temporomandibular Disorders and Orofacial Pain: Knowledge Gaps Among Dental Undergraduates and Postgraduates and Their Preferred Mode of Learning**
Hee Hon Tan, Singapore
- D1082** **An Attempt to Develop Teaching Materials Using Virtual Worlds in Nursing Education**
Tomoko Hagiwara, Japan
- D1083** **Virtual Patients in Massive Open Online Courses: A Randomised Controlled Trial Exploring Learner Interaction Patterns and Drop-Out Behaviours**
Marcel Scully, Singapore
- D1084** **Do Line-Group Reinforce Learning in Surgical Program?**
Pongsatorn Asanasak, Thailand

D 1073

CREATING CLASSROOM INTERACTION BY INTERACTIVE QUESTIONING: AN ACTION RESEARCH STUDY

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Background and Aims

Although the lecture is the most commonly used teaching method, it has been criticised for bringing passive learning experiences to students. Creating the interaction between teachers and students in the lectures is a useful strategy to transform passive into active learning. Questioning is a simple strategy to promote such interaction, and an online virtual wall can be used as a tool for this purpose. An action research approach to "plan, act, observe and reflect" is used to determine the applicability of interactive questioning approach in creating classroom interaction for nursing students.

Methods

Two lectures on the anatomy and physiology module were selected to apply the interactive questioning approach. Generation and propagation of action potential and the circulation of cerebrospinal fluid (CSF) topics were chosen based on their applications to clinical practice. The teacher created a wall on a free web-based platform called "padlet" and asked the students to post the topic-related questions by using their mobile phones. The teacher viewed the students' questions synchronously on her mobile device and responded to student queries. Students were briefed to comply the online classroom etiquette or netiquette rules in posting the questions only in the second lecture.

Students' posts on the wall were captured and categorised based on the relevance to the topics. An online survey was conducted to determine students' perceptions on the interactive questioning approach using the technology.

Results

There were 374 students in this cohort. In the first lecture, 280 posts were captured, and these posts were categorised into relevant and irrelevant posts. Relevant posts were accounted for 35% and reflected students' actual queries. An example was "why demyelination disorders can cause a gradual loss of sensation and motor control?" However, the remaining 65% were irrelevant, such as "Hahaha" and "Hungry."

In the second lecture, after briefing about the netiquette rules, the number of posts was decreased to 20. However, there was no inappropriate post, and only relevant questions were asked. An example was "by doing the lumbar puncture, can it affect the rate of CSF production and reabsorption?". The response rate of an online survey was 41%, and 62.5% of the respondents mentioned that they used the virtual wall to post questions. Most of the students (91%) preferred to use the virtual wall as they could ask questions anonymously. By practising interactive questioning using the technology, they remarked that the lectures became interactive (85%) and their learning was enhanced (92%) as they received instant explanations from the teacher about their queries. Eighty-four percent of students suggested that interactive questioning should be practised for every lecture.

Conclusion

The study concludes that interactive questioning using the technology promotes the classroom interaction between teachers and students to an extent. It is particularly useful in large group teaching because some students are hesitant to raise questions verbally. However, it is imperative to establish netiquette rules before using these tools in the classroom, and students should be briefed to comply these rules. It also needs to remind them that those who violate these rules will be disciplined.

D 1074

EVALUATION OF THE CONSTRUCTING CARE COLLABORATION

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Background and Aims

Experiential learning through service provides opportunities to nurture and practice empathy. Of growing concern, studies showed significantly decreased empathy scores as students progress through medical school. Additionally, Peer-to-peer learning provides an effective way to learn for students involved.

Constructing Care Collaboration (CCC) is a Structured-Service-learning-program initiated by medical students that synthesizes nurturing empathy and peer-to-peer teaching within service. CCC encompasses cycles of 6-structured service-learning sessions.

This mixed methods study evaluates CCC as an avenue for nurturing empathy and encouraging peer-to-peer teaching in medical students.

Methods

The study comprises a self-administered quantitative questionnaire and qualitative interviews. Both evaluate if CCC participation (≥1-cycle) developed volunteers' social-awareness, cultural competency, communication and confidence and motivation to teach their peers.

Results

Initial results from 38 volunteers' quantitative questionnaires are encouraging. Volunteers generally agreed CCC improved social-awareness and cultural competency in socio-ethical healthcare issues, confidence approaching migrant-workers and communicating with people from different social-backgrounds and confidence and enablement in peer-to-peer teaching (>86%,>88%,>86% respectively).

Thematic analysis of 17 qualitative interviews was conducted. Themes identified include: increased empathy and understanding of migrant-workers, perspective changes toward effective communication and identifying benefits and challenges towards peer-to-peer teaching.

Conclusion

The volunteers' self-evaluation of their empathy, cultural competence, communication and attitude towards peer-to-peer teaching supports CCC as an avenue to nurture these traits. While recruitment of subjects and analysis of qualitative data is ongoing, it is hoped these results draws support for service-learning-program and CCC as a model for structured service-learning.

D 1075

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

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Background and Aims

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. SRL is an important learning trait in physiotherapists but poorly observed in the newly graduated physiotherapists (NGPTs) in Singapore General Hospital. 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.

Methods

Semi-structured group interviews with NGPTs and supervising physiotherapists working in SGH. Thirty-two PTs (16 NGPT and 16 SPT) were recruited. A total of six group interviews were conducted (three each in the NGPT and SPT group) to achieve saturation. The total interview time was 3hr28min and 3hr56min for the NGPTs and SPTs respectively. The NGPTs was on average 25 years old (range 22-33) with 15 months (range 6-21) of working experience. For the SPT group, the average age was 31 years old (28-37 years) have 8.8 years (5-14 years) of working experience and have supervised on average 4 NGPTs (2-10 supervisee). All interview scripts were independently coded by HK and SS using conventional content analysis approach where coding categories were derived directly from the text data. The coding scheme and evolving themes were finalised through a group consensus.

Results

While the majority of participants correctly understood SRL as learning that was self-initiated, self-paced and self-motivated, many did not regulate learning in a systematic, strategic and persistent manner. Further, some misunderstandings were unearthed. Although learning took place in a purposeful way, many preferred the use of reactive or passive learning strategies, such as pacing, tolerating knowledge gap and asking questions. We identified three themes of SRL strategies used by NGPTs - seeking help, experiential learning and time-effort management. We observed that SRL was perceived to be important, yet it was not widely practiced by participants due to individual, system and supervisor related barriers. The high workload pressure was the most consistently cited obstacles. Strategies to develop SRL suggested by participants included system enhancement, optimising supervisor-junior interactions and setting performance expectations for both the NGPTs and their supervisors.

Conclusion

Our findings suggest a need for clarifying the concept of SRL. There was general consensus that SRL should be and could be enhanced. The NGPTs, supervisor and hiring organisation need to take joint responsibility in the development of SRL in the NGPTs. Based on the data, we provided some pragmatic recommendations specific for the NGPTs, supervisors and the management level. This could serve as a skeletal framework for on-going training program improvement and faculty support.

D 1076

THERAPEUTIC REASONING AND CONTEXT LEARNING BY SIMULATION: A NEW APPROACH IN TEACHING ANTIBIOTIC PRESCRIBING IN CLINICAL PHARMACOLOGY

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Background and Aims

Current teaching of pharmacology to medical undergraduates is done in a 'drug centred' manner. I.e. they are taught about a particular antibiotic and then the diagnoses for which that drug is used. Yet in clinical practice they have to do the reverse. They have to work out from diagnoses to antibiotic. Here comes the concept of therapeutic reasoning. It has to be reasoned out why a particular antibiotic is selected from a whole gamut of antibiotics available. Further, it has to be reasoned out why a particular route, formulation, strength, dosing frequency and duration is prescribed for a particular patient.

This concept of therapeutic reasoning is quite inadequately dealt with in the current teaching of antibiotic use, for medical undergraduates; Thus as doctors, the selection of antibiotics is mainly done by tradition rather than by scientific reasoning.

To address this deficient teaching of therapeutic reasoning, a method of context learning by simulation was devised.

Context-learning is defined as learning in a setting that is similar to the setting of the future profession. We introduced teaching of antibiotic prescribing in a simulated setting using doctor patient role plays.

Objectives:

Evaluation of student perceptions of teaching therapeutic reasoning in prescribing of antibiotics in a simulated Context-learning environment.

Methods

A final year medical student group, doing professorial paediatric appointment at Teaching hospital Peradeniya were included in the study, during the period of September to October 2016. Group received teaching sessions on antibiotic prescribing. Sessions consisted of doctor -patient role play, using carefully selected case scenarios to include different cases of antibiotic prescribing. After each role play session, feedback of their performance was given and proper antibiotic selection and prescribing was discussed in relation to the case. Weekly sessions were conducted during their professorial appointment in Paediatrics.

Student perceptions about teaching were assessed at the end of the appointment using an anonymous semi structured feedback questionnaire in five point Likert scale. Perceptions about the content, quality of the teaching method and their comments on advantages, limitations as well as suggestions to improve were included in the feedback.

Results

The teaching method was accepted well. The mean score for the quality of the teaching method and the content of the teaching was 4.3.

For the open ended questions, students mentioned that the teaching with Case scenarios with role play sessions were a good learning experience which improved the antibiotic prescribing skills. Also mentioned that this teaching method helped in understanding the appropriate antibiotic selection in practical setting.

Further they mentioned that increasing the number and duration of the sessions will be more beneficial.

Conclusion

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

D 1077

BARRIERS AND CHALLENGES TOWARDS USE OF SELF-DIRECTED LEARNING IN ACGMEI MULTI CULTURAL PEDIATRIC RESIDENCY PROGRAM: THE RESIDENTS PERSPECTIVE

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Background and Aims

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 is to identify barriers to use SDL among paediatrics residents; to explore potential recommendations that can overcome challenges; and to explore ideas to ward effective creation of individual learning plan and life-long learning among residents.

Methods

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

Results

Out of 50 respondents, (31) juniors and (19) Seniors. Nearly (90%) perceived lifelong learning as necessary to physician's career. 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%).

Conclusion

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

D 1078

FACULTY AND SENIOR RESIDENT MENTORSHIP IN ORTHOPAEDIC SURGERY RESIDENCY: A BANE OR BOON?

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Background and Aims

Mentoring has been thought to be a vital component of a well-rounded medical teaching environment, evidenced by its implementation in many residency programs. Senior resident mentoring, however, is far less commonly practised. This study aims to evaluate the perceived value of faculty and senior resident mentoring from the Orthopaedic residents' perspective.

Methods

An online survey was created and distributed to all NHG Orthopaedic residents from R2 to R5 (2015-2016 batch) to gather their views on faculty and senior resident mentorship.

Results

100% of surveyed residents responded. 68.4% of junior residents had a senior resident mentor while 84.8% of residents had a faculty mentor. Junior residents generally viewed senior resident mentors as being crucial and beneficial for training, with scores comparable to those for faculty mentors. Residents who had mentors and in particular, those who had chosen their mentors tended to be more satisfied than their counterparts. The most desired characteristics of mentors among the residents included approachability, willingness to share, being able to give feedback and experience. 66.7% of residents felt that senior resident mentorship should be required in the residency program but only 30.3% of them felt that it should be formalised. 78.8% of residents surveyed were of the opinion that faculty mentorship was required.

Conclusion

Residents generally viewed senior resident and faculty mentoring programs as being beneficial and crucial to their Orthopaedic residency training. We propose that programs should consider implementing senior resident mentoring in their residency training program to reap the benefits.

D 1079

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

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Background and Aims

Consideration of the roles of the teacher is part of the culture of good teaching practice. Recognition of a teachers' role can reinforce the teachers' commitment to teaching. Acknowledgement of the value attached by the institution to the teacher's specific role will encourage improvement in teaching and can inform areas of need for faculty development. The aim of this study was to evaluate the self-perception of teaching roles of the faculty in a tertiary teaching hospital in Singapore.

Methods

An electronic survey was sent to the faculty of the Department of Gastroenterology, Singapore General Hospital to evaluate their perceptions of importance, current involvement and future intended involvement in the 12 roles of a teacher using a validated questionnaire by Harden & Crosby (2000).

Results

31 of 35 faculty completed the survey (88.6% response rate). 29% of responders were junior faculty (Senior Residents) and 71% were senior faculty (Associate Consultant and above). The roles of clinical teacher, role model and mentor were ranked as the most important with the highest current involvement. Roles of lecturer, facilitator and examiner were less important and planner and resource developer was the least important role. Faculty reported willingness to contribute more in their future involvement in all roles. Insufficient time for focused teaching was reported as the main barrier.

Conclusion

The roles of clinical teacher, role model and mentor as the most important and most relevant to the clinical faculty. Most faculty are keen to contribute a larger role in education compared to their current contributions. Faculty need protected time to invest in teaching. Recognition of teaching is important for faculty morale.

D 1080

GAMIFICATION OF MEDICAL EDUCATION

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Background and Aims

At the NUS Yong Loo Lin School of Medicine (YLLSoM), teaching has conventionally been based on lectures, tutorials and practical classes.

The objective of the research was to find out if gamification in classrooms increase motivation for self-directed learning (SDL) among year 1 medical students (n=60).

Methods

To encourage more active learning amongst students, we used suitable games and Script Concordance Test (SCT) questions for engagement purposes. Flipped pedagogy was also introduced to further trigger the learning process. In addition, the use of mobile anatomy apps was also initiated as a supplement for SDL. Feedback was collected based on the PRO-SDL surveys.

Results

Early results yielded inconclusive evidence to support enhanced motivation among our participants based on our gamification and other interventions ($p > 0.05$). Nonetheless, these endeavours have proven to be successful in creating a medical education system that encourages active participation in class for a fun learning experience. The participants really enjoyed the process based on the feedback, and the qualitative comments garnered were mostly positive. More importantly, the continuous assessment (CA)1 and CA2 results of these participants were better than the cohort's average ($p < 0.05$), which meant that there were evidence for increased meta-cognition and retention, even though they might not consciously feel more motivated to do SDL. It should also be noted that we cannot confirm that there were any long term carry over effects from these pedagogies at this stage.

Conclusion

Taken together, our research into gamification of medical education and other suitable interventions had enhanced the medical students learning of clinical anatomy.

D 1081

TEMPOROMANDIBULAR DISORDERS AND OROFACIAL PAIN: KNOWLEDGE GAPS AMONG DENTAL UNDERGRADUATES AND POSTGRADUATES AND THEIR PREFERRED MODE OF LEARNING¹Tan HH, ²Wong ML, ³Sim YF

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Background and Aims

Temporomandibular disorder (TMD) is a common orofacial condition which can affect about 20 percent of the adult population. Chronic TMD pain can affect daily function of individuals thus affecting their overall quality of life. TMD and orofacial pain are key tenets of clinical dentistry which undergraduates need to appreciate. Currently, the pain curriculum for undergraduates is being reviewed to provide a more holistic and multi-disciplinary approach to the management of orofacial pain. This study aimed to identify knowledge gaps in TMD and orofacial pain to facilitate the development of a more targeted approach in teaching this topic. It also sought to find out the undergraduates' preferred mode of learning for such topics.

Methods

A self-administered questionnaire developed by Linda et al at University of Washington was used to gather the data on knowledge gaps. It comprised four key domains of TMD pain - (i) psychophysiology, (ii) psychiatric disorder (iii) chronic pain and (iv) pathophysiology. A total of 130 postgraduates (N = 29) undergraduates (N = 101) in their second, third and final years responded to the survey. The data were analysed using descriptive statistics and Pearson chi-square test with statistical significance set at $p < 0.05$.

Results

For nearly all the questions related to psychophysiology, there were no significant differences in the opinions among the postgraduates and undergraduates. In contrast to psychophysiology domain, the postgraduates established higher concordance with expert opinions in the pathophysiology domain as compared to undergraduates. Nevertheless, less than 50% of the postgraduates held the same opinion as the experts for almost all of the pathophysiology domain questions, indicating gaps in knowledge related to biomedical and biomechanical aspects of TMD aetiology, diagnosis and treatment. Gaps in knowledge related to causes, diagnosis and appropriate treatment of chronic pain conditions were observed. A proportion of students dissented from experts' opinion in chronic pain. For example, only 20 out of 130 students (15.4%) disagreed that in determining whether a TMD condition is chronic, the only important factor is time since the initial onset of symptoms, concurred with the experts; while 31 students (23.8%) held the opposite opinion. Similar episode was also observed in statement "PRN narcotics are a treatment of choice when TMD pain is severe" and "an extensive history of previous treatment failures in a patient with TMD is usually an indication for surgery". The top three preferred modes of learning TMD and orofacial pain were clinical observations (51%), small-group seminars / tutorials (45%), and followed by lectures (38%). The least preferred mode was online learning, only 12% of the students indicated this as their preferred mode of learning.

Conclusion

TMD and orofacial pain remains a challenging area of learning even for the postgraduates. This underscores the need to initiate the teaching early in the undergraduate curriculum through a targeted approach aimed at eliminating the misconceptions shown through this study. Interestingly, technology may not be positively received in the teaching of this topic as the conventional methods of teaching remain the preferred choice among the postgraduates and undergraduates.

D 1082

AN ATTEMPT TO DEVELOP TEACHING MATERIALS USING VIRTUAL WARDS IN NURSING EDUCATION

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Background and Aims

In recent years, e-learning utilising 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. Therefore, we are considering a possibility of utilising ICT as teaching material for students with no practical trainings at hospitals to experience virtual clinical sites to help them expand their imagination and to having better educational impact on them. 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.

Methods

Now, we devised a relatively inexpensive ICT teaching material. It is a virtual ward that use a computer software for architectural design "3D My Home Designer Pro8 (Megasoftware)" which runs on Windows8 (Microsoft). This virtual ward was projected on a screen for students. The advantages of this low-cost ICT teaching material are the fact instructors with less computer background can easily create their teaching material because it is a computer software for architectural design that is commercially available, and that there is no need for environmental preparation related to information technology on campus. 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

Using the virtual ward in the teaching material 1 and 2, we believe it is possible to create educational programs according to students learning progress because they allow each student to simulate the experience. The teaching material 3 and 4 enable us to plan lessons in hospital art that are created by health care providers without using special art tools because the system allows us to experience the hospital art. The fifth teaching material suggested the possibility of creating teaching material that will enable students to imagine the differences in values and ideas between now and then on their own in terms of history education.

Conclusion

From the above, we can see that the education utilising 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.

D 1083

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

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Background and Aims

Virtual Patients (VPs) provide active learning opportunities to develop clinical reasoning skills. Massive Open Online Courses (MOOCs) have been proposed as an approach to provide large scale training but the 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 therefore to first better understand VPs as a learning activity in MOOCs by investigating 1) learner drop-out patterns in VPs and 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.

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.

Conclusion

By mapping observed interaction patterns to individual learners, we can identify 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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Background and Aims

Previously, surgical program provide for 4th year medical student by paper base data. Line-group was introduce in new surgical program .Satisfaction questionnaires, frequency of activities make in Line- group were collected and analysed

Methods

We invited instructors, students and course secretaries in Line-group: surgery year 4 and provide manual guide for surgical program, PPT of topics, schedules, appointment, interesting cases and procedures. Only instructors and course secretaries were invited in Line-group: Surgery yrs 4 instructor. Student concealing data were provided in this

Results

75% of Instructors, 100% of students and 100% of course secretaries join in Line-group Appointment and change appointment is the most frequency activity in Line-group 70% of students studied data in Line-group before class lesson

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. Students also have Line-group that invite only students. Numbers of interesting cases and procedures were provide in this Line-group. Line-group have ability to reinforce learning in surgical program

Saturday 13 January 2018

Virgo 3, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 15

- D1085** **Medical Oncology Residency Exit Viva Voce Examinations in Singapore - Are Mock Examinations Useful in Gauging Candidate Readiness?**
Nagavalli Somasundaram, Singapore
- D1086** **Mentoring Guidelines for Postgraduates in Internal or General Medicine**
Shao Wen Amanda Teo, Singapore
- D1087** **Developing a Holistic Student Support Infrastructure: The LKCMedicine House System**
Tanya Tierney, Singapore
- D1088** **Analysis of Standardised Patient Ratings and Examiner Pass-Fail Marks of History Taking at End of Year Professional Exam Stations in 4 Specialties**
Carmen Wong, Hong Kong S.A.R.
- D1089** **Can Structured Oral Examination (SOE) Replace Standard Oral Examination in Our MBBS Curriculum?**
Suresh Roy Laiphangbam, India
- D1090** **Role Models' Proverbs and Self Reflection Integrated with Flip-Classroom Technique, A More Fun Professionalism Class While Inspiring Medical Students**
Kalyanee Asanasak, Thailand

E-POSTER PRESENTATION SESSION 16

- D1091** **Supervision in Post-Graduate Internal Medicine Training**
Rachel Huidi Peh, Singapore
- D1092** **Using Eye Tracking to Evaluate Students' Needs and Usability of a Visualised Curriculum**
Min Kuan Chua, Singapore
- D1093** **Enhanced Transition Framework for Local-Trained New Graduates in Tan Tock Seng Hospital: Aiming Towards Early Confirmation for Potential Nurses**
Mary, Jan Mui Leong, Singapore
- D1094** **Development of Teachers' Instructional Competence in Team-Based Learning Using Children's Fairy Tale in Teaching Demonstration**
Ke-Li Tsai, Taiwan
- D1095** **Oral Hygienists' Experiences of a Blended Learning Course in Local Anaesthesia**
Nashreen Behardien, South Africa
- D1096** **New Approach in Developments of Clinical Practice Guidelines in Ministry of Health Primary Care Increases the Value and Reduce the Waste**
Zulfa Alrayess, Saudi Arabia

D 1085**MEDICAL ONCOLOGY RESIDENCY EXIT VIVA VOCE EXAMINATIONS IN SINGAPORE - ARE MOCK EXAMINATIONS USEFUL IN GAUGING CANDIDATE READINESS?**¹*Somasundaram N*, ²*Hassan NH*, ¹*Loh WJK*¹*Division of Medical Oncology*, ²*Division of Medical Oncology*, *Division of Cancer Education*, *National Cancer Centre*, *Singapore***Background and Aims**

Medical Oncology Exit examination for the senior residents in Singapore traditionally consisted of multiple choice questions and a viva voce station. The viva voce examination, being not standardised in terms of the cases and the questions asked, had raised concerns of fairness and reliability in the assessment of candidates. Hence, the format of the upcoming exit exam's viva voce station has been modified to standardise the cases and the discussion points. In order to familiarise the examiners and the examinees with the new format, a mock viva session was held with the final year senior residents who were due to sit for the exams in July 2017. The aim of the mock examination was to simulate the actual viva voce examination.

Methods

A survey was conducted amongst the examiners and examinees at the end of the mock examination to determine the overall impression of the exam and its perceived assessment value.

Results

Each of the 4 candidates rotated through 2 stations each. A standardised scenario with a fixed set of questions was given to the examiners. All the candidates perceived the mock examination as a useful exercise in preparation for the actual examination. The main utility of the mock examination was in allowing the candidates to anticipate the flow of the examination process and to psychologically prepare for the actual examination. 75% of the candidates also concurred that the mock examination gave an opportunity to identify knowledge gaps and to receive feedback from the examiners.

The examiners gave feedback that the mock examination provided a better understanding of the examination process, the challenges faced by the candidates, the challenges with the assessment system and the knowledge gaps amongst the residents. Being able to assess the clinical acumen of the residents was an important aspect of the mock viva examination, according to the examiners.

Overall, all the residents and the examiners voted for more viva voce style examinations to be incorporated into the residency curriculum as an assessment strategy. The suggestions were to include it as part of mini CEX examinations or case mix discussions as part of the weekly tutorial sessions. Only 1 out of the 4 residents agreed with the use of viva voce style examination at the end of academic year to determine progression.

Conclusion

The mock viva examination achieved its main objective of attempting to simulate the actual examination. A post examination survey is to be conducted after the actual examination to get further feedback on the usefulness of the mock examination.

D 1086**MENTORING GUIDELINES FOR POSTGRADUATES IN INTERNAL OR GENERAL MEDICINE**¹*Teo SWA*, ¹*Tan YS*, ²*Sng J*, ²*Pei Y*, ³*Toh YP*, ⁴*Krishna L*¹*Yong Loo Lin School of Medicine*, *National University of Singapore*, *Singapore*, ²*Singapore General Hospital*, *Singapore*, ³*Assisi Hospice*, *Singapore*, ⁴*Department of Palliative Medicine*, *National Cancer Centre Singapore*, *Singapore***Background and Aims**

Mentoring is vital to the personal and professional growth of a physician and plays a key role in postgraduate medical education. In the context of postgraduate medical education, mentoring needs to be tailored to the budding physician whose needs markedly differ from that of a medical student. At present, mentoring practices are diverse and there is a lack of consensus as to the best methods for carrying out each step of a formal mentoring program. The lack of guidance for mentoring may result in negative mentoring experiences which can have lasting impact on both mentor and mentee. Moreover, the lack of consistency makes it difficult to monitor and evaluate the mentoring process. The context-specific nature of mentoring emphasises the need to look into mentoring guidance in the postgraduate setting.

Methods

A literature search for articles pertaining to guidelines for mentoring in general medicine was carried out in PubMed, ERIC, Cochrane Database of Systematic Reviews, Web of Science, CINAHL and Embase between 1st January 2000 to 31st December 2015. English articles with guidelines on mentoring in postgraduate medical training. Articles involving specialities other than general or internal medicine, articles involving other disciplines, peer, near-peer or group mentoring were excluded. Thematic analysis was carried out on the articles selected to identify key aspects and guidance on mentoring.

Results

The initial search found 23934 articles. Duplicates and articles that did not fulfil the inclusion and exclusion criteria were removed. Eighteen articles were selected and analysed. The themes identified in this study include guidance on a) facilitating the matching process b) building a mentor's mentoring competencies c) setting and achieving goals during the mentoring process d) commitment and investment of the dyad and the organisation in the mentoring relationship e) the organisation's role in building an environment conducive to mentoring. These factors are imperative for building a good mentoring relationship, which is emphasised to be quintessential to mentoring's success. Based on these key themes, the authors present an evidence based guidance on postgraduate mentoring in medical training.

Conclusion

This evidence-based guidance crystallises key aspects of the mentoring process to assist the development and implementation of formal postgraduate mentoring programs. It is crucial, however, to ensure that the context and goal-specific nature of mentoring is considered, and that the guidance is adapted to suit purposes and situations to which it is applied. Gaps in current postgraduate mentoring are apparent and require further study in order to be able to attain a more comprehensive set of guidance for future mentoring programs.

D 1087

DEVELOPING A HOLISTIC STUDENT SUPPORT INFRASTRUCTURE: THE LKCMEDICINE HOUSE SYSTEM

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Background and Aims

The Lee Kong Chian School of Medicine established its innovative House System to create a holistic student welfare, pastoral and progression support system that would effectively:

- Provide continuity through a consistent point of contact and support for each student throughout their studies
- Facilitate the students' intellectual, emotional and psychological development and their transition into, through and from the undergraduate MBBS programme
- Support the development of the students' professional identity and understanding
- Support the understanding of the profession of medicine as a science and an art
- Facilitate effective and consistent mentoring, coaching and role-modelling from experienced clinicians and scientists (House Tutors)
- Facilitate a sense of belonging, community and peer support among students, and collegiate, supportive relationships between students and assigned House Tutors
- Be integrated in a coherent and cohesive manner to the students' programme, curriculum and other processes for monitoring students' progression
- Pick up early alerts so that problems can be addressed before they escalate and the student can get the needed support and guidance
- Incorporate students' input in shaping the support system to best meet students' needs and create a sense of ownership by students

Methods

The House system structure and process is fully inter-connected with the whole programme and institutional eco-system e.g. alignment with Freshman orientation activities and the Student Medical Society representation; alignment with the student welfare, professionalism and academic progression and monitoring processes. In steady state, the Tutor: student ratio per programme year is 1: 4, i.e. one Tutor has up to 20 students assigned to them across the five years of the MBBS programme. To ensure understanding and support for the School and House system ethos and programme curriculum, Tutors are selected through an application and interview process, regular training is provided and the positions are funded. Individual physical House Rooms were designed to support the House system approach - a space where House activities and relationship building between students, and between students and Tutors take place.

Results

In the five years that the House system has been in operation, its evolution has been shaped by both the students and Tutors. At present there is high buy-in and satisfaction from students and House Tutors. It can be challenging within a packed MBBS academic programme to ring-fence the time needed for the House meetings and Tutor sessions.

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 AT END OF YEAR PROFESSIONAL EXAM STATIONS IN 4 SPECIALTIES

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Background and Aims

Standardised patients (SPs) are widely used in the clinical examinations, however surrogate patients' ratings of students are seldom used as formal grades in their assessment. Meanwhile a review in an Educational Commission for Foreign Medical Graduates' (ECFMG) Clinical Skills Assessment point out that communication competencies are best evaluated by person trained to be patients (SPs). Anecdotally there is controversy in whether SPs can identify weak students but also some suggestions that their views may be similar to examiners. This study aims to explore the correlation of SP assessment with examiner marks and whether SP marks may useful for assessment purposes.

Methods

A chinese communication skills rating tool which had four domains of empathy and respect, verbal communication, non-verbal communication and entrustable care was used to assess medical student's history taking performance in end of year 4 medical examinations. This was using a 6 point likert scale (0,1,2,3,4,5). A pair of examiners were used to rate the history taking stations from pass to excellent using the scale: Fail \leq 19, pass 20-22, Fair 23-27, Good 28-31 and Excellent \geq 32. In order to enhance the consistency of the data between SPs' and examiners' score, SPs' total score was multiplied by 2 to get total marks of 40, which equal to the examiners' marks. Students were examined in obstetrics and gynaecology, paediatrics, psychiatry and family medicine.

Results

There were a total of 218 students who were randomly assigned into 2 stations. Each student had 2 SPs' markings. Mean score \pm s.d. for SPs were 14.83 \pm 2.42 for paediatrics, 15.74 \pm 2.96 for psychiatry, 16.65 \pm 2.43 for family medicine, and 17.69 \pm 2.15 for Obstetrics and Gynaecology. Internal consistency of all items demonstrate a high reliability result, overall Cronbach's alpha ranged from 0.870 to 0.896 among all 4 specialties and corrected item-total correlations were all >0.4 .

The correlation between 2 specialties of SPs' and examiners' scores in fail case were in weak negative correlation from $r=-0.091$ $p=0.845$ to -0.270 $p=0.558$ in PAED stations and a moderate positive correlation from $r=0.615$ $p=0.269$ to 0.712 $p=0.112$ in PSY stations. In terms of excellent cases, SPs in PAED stations almost show no correlation with examiners' score ($r=0.113$ $p=0.425$ to 0.177 $p=0.209$). The other specialties also shown a weak correlation, from $r=0.114$ $p=0.347$ to 0.169 $p=0.162$ in PSY, from $r=0.207$ $p=0.063$ to 0.243 $p=0.028$ in FM and from $r=0.238$ $p=0.023$ to 0.290 $p=0.005$ in OG stations). There is poor correlation in the relationship between SPs' and examiners' scores in identifying fail and excellent cases.

Conclusion

There is opportunity to incorporate SPs assessment to summative assessment, as they can provide an addition perspective on student performance relating to patient's perception of empathy and respect, verbal and non-verbal communication skills and entrustable care which are not correlated by examiners' assessment. This may be increasingly important as patient partnership has been shown to improve patient compliance and satisfaction in the consultation.

D 1089

CAN STRUCTURED ORAL EXAMINATION (SOE) REPLACE STANDARD ORAL EXAMINATION IN OUR MBBS CURRICULUM?

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Background and Aims

Assessment including oral examination forms one of the most important thrust areas for certification of the MBBS students throughout India which functions under the guidance of MCI But standard oral examination suffers from various demerits and lacunae. Structured oral examination may provide an alternative assessment tool for the students. This study was aimed to examine the feasibility of adopting this method in present MBBS curriculum.

Methods

The study was conducted among 1st year MBBS students in the Department of Physiology, Regional Institute of Medical Sciences (RIMS), Imphal, India during the period of May, 2016 and June, 2016. They were exposed to two sets of examination pattern: traditional and structured oral examinations which were conducted on two separate days after detailed explanation of the methods. Feedback through pre-tested questionnaires were taken from all students and faculties. Ethical approval was obtained from Research Ethics Board (REB). Descriptive statistics like mean and standard deviation were used and the data was analysed by using student's t-test.

Results

The study showed that the overall score among the students was better with the structured oral examination. Analysis of the questionnaire reveals that the satisfaction level was high and the environment was found to be friendly to them with the structured oral examination in comparison to standard oral examination. The students were of the opinion that SOE may be a better option for them.

Conclusion

SOE provides an alternative and better option for assessment of students in medical colleges and it can be initiated through proper sensitisation of teachers towards SOE.

D 1090

ROLE MODEL'S PROVERBS AND SELF REFLECTION INTEGRATED WITH FLIP-CLASSROOM TECHNIQUE, A MORE FUN PROFESSIONALISM CLASS WHILE INSPIRING MEDICAL STUDENTS.

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Background and Aims

Teaching professionalism is always a tuff work for medical teacher. It has many diversities depending on various cultural sensitivities and believes. Teaching medical professionalism through "role model" is claimed to be the most effective technique for developing professionalism in medical students." Reflection" is also the best technique to reassure the understanding in any special topic. In southern part of Thailand where there are vast differences both in cultures and believes. Teaching these difference background medical students to develop professionalism is seem unreal. Our institute developed the class-teaching professionalism by using "the great role model , prince Mahidol, and his proverbs" along with "Self-reflection" to include in the teaching program in order to inspire medical students and implant the best performance practicing doctor in the future.

Methods

Prince Mahidol, the father of modern medicine and public health of Thailand also the passing king's father, was selected as a great role model. His 19 proverbs were also selected and matched with standard professionalism, 12 topics of his proverbs were chosen. The students were asked to choose their own 3-4 partner and in-turned they would lead the group by flip-classroom technique. Every 3 month, on Wednesday afternoon each leader groups were assigned to study in depth each proverb and presented their understanding by using various techniques for examples role-play, DVD, debated or games. At the end of each session, each student acknowledged their own reflection. These activities was assigned for 3 years period and at the end of 3rd year,6th.year students, their understanding about medical professionalism was tested by MCQ and short answer assays.

Results

All students show more enthusiasm in professionalism class than the previous teaching method, based on case-scenario discussion. "We have fun while we learnt " "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" They are also exciting in the way how their colleagues will present the next proverbs. While the leading group who supposed to lead the next learning session have to study and understand and think about the better way for their presentation to the audiences.

Conclusion

Teaching medical students to be professionalized is the must have part of the curriculum. However the specifics of sequence depth, details and the nature of how to integrate professionalism with other curriculum are individualized. The early and continuously approach to make students realizing, understanding and inspiring professional manner may result in the better behaviour practicing doctors. This study shows one model in teaching professionalism using role-model proverb integrated flip-classroom technique to make enthusiastic class and self-reflection to ensure the student understand and believes. Even teaching professionalism is diversity and depending on various cultural sensitivities and believes. It is the medical teachers responsibility for the society to organize the curriculum implanting professionalism into every doctors. Using the proverbs from the well-known Role Model along with reflection under mentors supervision undergone flip-classroom-technique making a fun class with more remembrance.

D 1091**SUPERVISION IN POST-GRADUATE INTERNAL MEDICINE TRAINING****¹Peh RH, ¹Tan BJX, ²Toh YP, ³Krishna L**

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Background and Aims

Clinical supervision is a vital component of post-graduate medical training, particularly in the areas of medical education and ensuring patient safety. It is, however, poorly defined in the literature and there are no established guidelines or frameworks on clinical supervision in internal medicine training.

This systematic review aims to highlight the purpose, processes and relationship between supervisor and supervisee in clinical supervision in post-graduate internal medicine training.

Methods

This is a literature review on clinical supervision in postgraduate internal medicine training.

A literature search on clinical supervision in internal medicine was conducted for all English-language articles between the years 2000 to 2017 in databases including PsycINFO, EMBASE, Pub Med, ERIC and MEDLINE Ovid. Articles involving specialties other than internal medicine, and other disciplines were excluded, so were articles on other educational modalities like mentoring, coaching and advising. Information from the articles chosen by the selection criteria were filled into data collection forms and thematic analysis was carried out.

Results

A total of 1540 articles were obtained from the initial search, and 18 articles fulfilled the inclusion and exclusion criteria. All 18 articles were on supervision in the post-graduate level. The main aims of supervision included a) monitoring trainees, b) ensuring quality of clinical care, c) improving resident education, d) providing support e) ensuring safety and f) gradual independence of trainees. Initiation of supervision was often found to be formal and organisation-initiated, but with the lack of a proper framework with structured objectives and protected time for supervision. Features that defined a supervisor-supervisee relationship were classified into three main themes: qualities of the supervisory relationship, characteristics of supervisor and supervisee, and challenges faced in supervision. Supervisor-supervisee relationship should be bidirectional and with open and clear communication. Good supervisors should be approachable and available, and should have an interest in education. Supervisees on the other hand should be self-efficacious, yet be able to recognise their own limitations. Obstacles to supervision may include a lack of training, decreased trainee decision-making autonomy and possible tension between providing service and education.

Conclusion

Supervision in internal medicine training serves the dual purpose of improving patient care and safety by ensuring accountability and building on the clinical competencies of the doctor supervised. Good supervision results in professional growth and improvement of the quality of healthcare rendered to patients. Suboptimal supervision may hamper a professional's growth and development and a learner's sense of psychological safety. Whilst this study highlights the key features of supervision in the literature, there needs to be further research done to study the specific components of supervision in order to guide recommendations that would allow effective clinical supervision to take place.

D 1092**USING EYE TRACKING TO EVALUATE STUDENTS' NEEDS AND USABILITY OF A VISUALISED CURRICULUM****¹Chua MK, ¹Kwan JR, ²Canning CA**

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Background and Aims

At LKCMedicine, a new curriculum map, CLUE (CurricuLUm Explorer), was developed. A curriculum map provides increased clarity of the curriculum for major stakeholders (teachers, students, curriculum developers), who each have differing needs. We aim to explore students' needs, and evaluate the usability of CLUE, using a combination both eye tracking and traditional usability methods. To our knowledge, there are no previous studies using eye tracking to evaluate the usability of curriculum maps. We are using this novel approach to further explore usability and functionality of curriculum visualisation.

Methods

17 medical students (11 male, 6 female) were recruited from LKCMedicine. Traditional usability methods such as questionnaires and interviews were administered, and participants' eye tracking data were collected in the form of gaze plot videos. The gaze data was analysed for usability problems. Visualisations of participants' gaze patterns such as heat maps and Areas Of Interest (AOIs) were also obtained.

Results

Through engaging the students in this usability study, we were able to identify student needs for the curriculum, which were split between accessing learning outcomes (58.8%) and resources (41.2%). Recurring usability issues of CLUE were also identified, and eye tracking was used to evaluate these problems, providing insight into participant behaviour. The questionnaire also provided invaluable feedback on both CLUE, and the curriculum itself. The study was able to engage the various stakeholders of LKCMedicine in curriculum evaluation and development, paving the way towards a more inclusive approach for curriculum design.

Conclusion

There is a need to continuously improve curriculum maps alongside changes in the curriculum. It is also essential to ensure that the curriculum map suits the needs of its various users. CLUE, although it met students' needs, requires some usability improvements. Eye tracking gave invaluable insight into the problems detected. We hope this study would serve as a guide for researchers interested in using eye tracking to perform in-depth formative usability studies on visualised curriculum, and to inform curriculum reform.

D 1093

ENHANCED TRANSITION FRAMEWORK FOR LOCAL-TRAINED NEW GRADUATES IN TAN TOCK SENG HOSPITAL: AIMING TOWARDS EARLY CONFIRMATION FOR POTENTIAL NURSES

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Background and Aims

A lot of training hours had been invested for our local-trained new graduates. The student nurses underwent 3 months of PRCP (Pre-Registration Consolidation Practice) in the final posting and another 6 months of probation when they graduated. During the PRCP posting, they will be buddied with a preceptor each and thereafter another 6 months of precepting when they graduated and returned as full fledge nurse. Total of 9 months of training hours and supervision was provided, i.e. during 3 months of PRCP posting and 6 months of probation period. The hospital also required to provide sufficient preceptors to guide the nurses which cause preceptorship-fatigue resulted in high nurse turnover rate, which in turn affecting the quality of the trainees that will compromise the quality and safety of patient care.

The aim of the paper is to relook at ways to increase nursing productivity and reduce waste (training hours, manpower, resources, cost and time invested in re-training); to reduce preceptorship-fatigue; and identify potential newly graduate nurses from using the early confirmation framework.

Methods

A transition program framework was designed and developed to guide the supervisors and preceptors during the graduates' probation period from 1st day to 6th month. The framework consists of specific timeline which includes detailed training, competencies and clinical supervision required to achieve by indicated timeline. Early confirmation were indicated for new graduates confirmed by 3rd to 5th month of probation.

Results

Total of 56 local trained post PRCP (Pre-Registration Consolidation Practice) graduates from April and May 2016 cohort's confirmation data was analysed. The data showed 27% of April cohort and 29% of May cohort nurses being early confirmed by 3rd to 5th month of their probation period. The data shows a significant increase in number of nurses being early confirmed compared to past records where most were confirmed at 6 months, at the end of their probation period.

Conclusion

The data implies that the enhance transition framework works, and through this the supervisor were able to identify potential new nurses, reducing re-training and wastes, and increase productivity of nurses. This framework thus works as a future guide for nursing management towards early confirmation of local-trained new nurses.

D 1094

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.

D 1095

ORAL HYGIENISTS' EXPERIENCES OF A BLENDED LEARNING COURSE IN LOCAL ANAESTHESIA

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Background and Aims

A scope of practice of oral hygiene in South Africa, initially promulgated in 1984, had been revised and expanded over the past two decades. Practitioners are required to do continuing education courses in order to practise the scope which includes Local Anaesthesia (LA). These practitioners may re-enter higher education at varying levels of preparedness, requiring course developers to be innovative in developing courses for the adult learner. The aim of this study was to determine oral hygienists' experiences of a blended learning course in local anaesthesia.

Methods

The study was conducted at the Faculty of Dentistry (University of the Western Cape, South Africa) after ethics approval was obtained. A descriptive, cross sectional design was used. All oral hygienists enrolled for the course were invited to participate (n=26). Participation was voluntary and anonymity was ensured. Two self-administered questionnaires comprising of open and closed ended questions were used to collect data.

The course in LA consisted of the following components: basic anatomy coursework for revision purposes (with a voluntary online assessment); course content (PowerPoint lectures, audio-visual files) uploaded to the e-learning site prior to the formal face-to-face lectures; contact session presented over 5 days; patient treatment; patient assessment (theory and practical); summative assessment during the contact session and an online assessment two months after completion; provision of a logbook for recording of LA procedures performed in their practice environments. Data was entered and analysed using the SPSS® version 24. Open ended questions were themed and coded.

Results

All participants were female aged between 26 - 55 years (mean=44; SD 6.9); had a diploma in oral hygiene obtained between 1980 and 2011. At least 80% could access and use information technology including computers, internet and email. Concerns prior to commencement of the course related to the ability to perform the clinical procedures, identification of anatomical landmarks, inflicting injury to patients, coping with the invasiveness of the procedure, anxiety related to the ability to manage studies after a long break and coping with English terminology. These concerns were expressed as fear, anxiety and being overwhelmed noted in the following statements: 'Scared of injecting a person in the wrong place/area, causing permanent damage'; 'Nervous whether I would cope with the anatomy, will I be able to admin (sic) LA'. At the end of the contact session participants felt that they had confidence to administer LA (84%); theoretical knowledge of LA (100%) and the clinical skill to administer LA (76%). Other feedback related to structure and organisation of the course (provisions of notes); lecturers (noted as excellent, knowledgeable and patient); and teaching format. 'Tell-show-do method was very effective in helping me understand and implement the practices' (sic).

Conclusion

This blended learning approach in presenting local anaesthesia was generally perceived as positive. Although all participants indicated that they had the knowledge to do the procedure, some did not feel confident to practice the skill, indicating that some may need more time to develop these skills. The expertise, hands on approach and availability of staff was highlighted as positive.

D 1096

NEW APPROACH IN DEVELOPMENTS OF CLINICAL PRACTICE GUIDELINES IN MINISTRY OF HEALTH PRIMARY CARE INCREASES THE VALUE AND REDUCE THE WASTE

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Background and Aims

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 standardised practice guidelines. The Saudi Centre for Evidence Based Health Care, Ministry of Health took an initiative to establish methodology for a program of rigorous adaptation of CPGs and local capacity building through the Saudi Centre for EBHC and developed guidelines and disseminated among practice physicians.

Adaptation of clinical practice guidelines (CPGs) is the systematic approach to the use and/or modification of a guideline produced in one setting for application in a different context. 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.

Methods

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 panellists received preparatory training sessions and worked on adapting recommendations.

Results

We adapted a total of 260 recommendations for 22 CPGs. These CGPs have been disseminated and available on Ministry of Health website (<http://www.moh.gov.sa/depts/Proofs/Pages/Guidelines.aspx>). (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 panellists. 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

In this unique collaboration, we established methodology for adaptation of CPGs and implemented it in a 14-month period. There were three conditions for success: a) committed stakeholders, b) scientific support, c) project management.

Implications for guideline developers/users: The experience to produce adapted CPGs in a short period is feasible but challenging. Developers may utilise 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.

Saturday 13 January 2018

Virgo 4, Level 1, Resorts World Convention Centre

11.15am – 12.45pm

E-POSTER PRESENTATION SESSION 17

- D1097** **Using Learning Management System Functionality to Augment Early Warning Systems in a Face To Face Foundation Year of a Medical Programme**
Declan Gaynor, Bahrain
- D1098** **Burning Questions: What Are the Students Asking in TBL?**
Nandini Rao, Singapore
- D1099** **Comparison of Psychometric Qualities of Two Clinical Examination Formats Used in A Final MD Examination**
Nadia Al Wardy, Oman
- D1100** **There Were No Association Between Knowledge and Practice of Standard Precaution Among Students of Atma Jaya Medical School**
Denio Adrianus Ridjab, Indonesia
- D1101** **Children Perception on Volunteer Dental Clinic and Mini-Educational Programs- A Questionnaire Study**
Yu-Ting Huang, Taiwan
- D1102** **Systematic Review of Tools for Measuring Medical Professionalism**
Hendra Goh, Singapore

E-POSTER PRESENTATION SESSION 18

- D1103** **Learning Beyond the Classroom for Medical Oncology Trainees at National Cancer Centre, Singapore (NCCS)**
Eileen Yi Ling Poon, Singapore
- D1104** **Undergraduate Medical Research Outreach and Project Matching (ROPM) Programme to Support Research Activities Among Medical Students at the National University of Singapore (NUS)**
Yi Ping Ren, Singapore
- D1105** **Relational Elements of Mentoring - An Approach Using Complex Adaptive Systems Theory**
Simone Quek, Singapore
- 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**
Huu Ta Nguyen, Vietnam
- D1107** **Usage and Impacts of Medical Smartphone Apps Among the Medical Students in Tamil Nadu, India**
Shenaz Fathima Akbar Ali, India
- D1108** **Candidates' Use of Online Resources in Preparation for the Biomedical Admissions Test (BMAT)**
Amy Devine, United Kingdom

D 1097

USING LEARNING MANAGEMENT SYSTEM FUNCTIONALITY TO AUGMENT EARLY WARNING SYSTEMS IN A FACE TO FACE FOUNDATION YEAR OF A MEDICAL PROGRAMME

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Background and Aims

In recent years educators are facing new challenges with increasing class sizes and widening educational backgrounds and abilities of students. In traditional face to face modules like medicine, it can be difficult to track and gain an insight into the academic progress of students with reduced one on one contact time, especially in the preclinical years. Developing systems capable of identifying online learning behaviour indicators related to academic success or failure can be used to support existing early warning systems.

Much of the published research in learning analytics is focused on fully online learning and identification of learning behaviours that predict academic success. Many studies identify engagement in forum discussions and performance in online assessments/quizzes as the most reliable indicators of academic success in online modules. Other variables that are often studied are frequency of login and time on task but these have been shown to have lower correlation to academic achievement.

The aim of the current study is to monitor student engagement in one module of a medical foundation year using quiz functionality within the learning management system and assess use of the 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 a number of self-regulated online quizzes. Student engagement in all science modules was monitored using activity reports from Moodle, the university learning management system (LMS). Student online learning behaviours (total online activity, total quiz activity, time on quiz tasks, cumulative quiz score, forum activity) as recorded in the LMS activity report, were analysed and correlated with module summative assessment score using SPSS.

Results

The inclusion of quiz activities in the module raised the average online engagement from 195 (15/16) to 347 interactions per student (16/17). The level of online engagement in the module was on average double that of the other science modules in the foundation year. Higher engagement in forums was also observed but the number of forum interactions was significantly lower than quiz interactions. Weak but statistically significant correlation was found between module summative assessment score and: total online activity, total forum activity, total quiz activity and time on quiz tasks. Only one variable showed highly significant correlation to module summative assessment score. Approximately 21% of the variation ($r^2 = 0.218$, $p < 0.001$) in module summative assessment score can be predicted by cumulative quiz score.

Conclusion

Online quizzes have been used to increase student engagement and contribute to generating online learning behaviour profiles. These profiles have been shown to provide useful predictors of academic performance which may be used to supplement existing early warning systems for identifying 'at risk' students.

D 1098

BURNING QUESTIONS: WHAT ARE THE STUDENTS ASKING IN TBL?

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¹Department of Pathology, Tan Tock Seng Hospital, Singapore and Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, ²Office of Medical Education, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

Background and Aims

The Lee Kong Chian School of Medicine (LKC Medicine) has a system-based, preclinical integrated curriculum which is taught using Team-based Learning (TBL). The main basic sciences like anatomy, physiology, biochemistry along with microbiology, pathology and pharmacology are taught in an integrated way, often using relevant clinical scenarios to highlight the importance of the basic sciences to the practice of medicine. Students spend a significant amount of time in-class discussing with their peers and content experts. Hence, the questions that students ask play an important role in meaningful learning and inquiry. The aim of this study was to analyse these questions in order to understand what topics students discuss the most and the quality of the questions asked.

Methods

At LKC Medicine our implementation of TBL is enhanced by a learning management system which routinely captures the questions that students raise for discussion in class. We call this the "Burning Questions". After completing the team quiz portion of TBL (tRAT), teams electronically submit specific questions which they would like further clarification on. The teacher then facilitates a class wide discussion on these questions and provides additional instruction when required. Currently four cohorts of students have completed years one and two of the MBBS programme, with each cohort contributing significantly to the database of "Burning Questions". A qualitative content analysis was performed on this database of questions, using a directed approach to code the burning questions into topic themes. Two experienced educators coded independently and resolved disagreement through discussion.

Results

These findings indicate what types of questions and topics dominate discussions in class. We compared cohort differences between the four cohorts and longitudinal changes as each cohort progresses through the preclinical years. We also propose how this analysis contributes to the quality improvement process of TBL curriculum for subsequent cohorts of medical students.

Conclusion

The initial impetus for implementing the burning questions was to engage the students in further meaningful discussions, as opposed to them having their questions answered directly by content experts. However, an added benefit has been that we have built up a rich repository of questions that can improve the quality of medical education. One of the significant challenges of TBL, or for that matter any educational approach, is the need to continuously refresh aspects of the curriculum. This database of student generated burning questions could provide a rich source of feedback on gaps in the curriculum. In addition, and with minor modifications, these burning questions could be transformed into MCQ questions that are useful for both TBL and summative assessments.

D 1099

COMPARISON OF PSYCHOMETRIC QUALITIES OF TWO CLINICAL EXAMINATION FORMATS USED IN A FINAL MD EXAMINATION

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Background and Aims

The final certifying MD examination (FMD) at the end of the undergraduate medical programme in the College of medicine and Health Sciences, Sultan Qaboos University, 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 were used and each station was marked against a station-specific checklist and a global rating by one examiner. The other format was 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 assessed each case independently by using rating scales. The psychometric qualities and suitability of the two examination formats as assessments tools were compared.

Methods

Data from 320 students who sat for the FMD examination in 2014, 2015, and 2016 were used to calculate several statistical parameters, reliability coefficients, and standard errors of measurement.

Results

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". Domain reliability in the "short cases", however, was very reliable with values ranging from 0.93 to 0.94. Pearson correlations ranged from 0.38 to 0.54.

Conclusion

The reliability of the two formats is comparable. However, whether they should both be retained or combined will depend on their validity.

D 1100

THERE WERE NO ASSOCIATION BETWEEN KNOWLEDGE AND PRACTICE OF STANDARD PRECAUTION AMONG STUDENTS OF ATMA JAYA MEDICAL SCHOOL

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Background and Aims

Standard precaution is a basic protocol that every health care facilities have to do. It plays important role to prevent infection among patients and health care workers. This practice is especially to prevent HIV/AIDS and Hepatitis B infection. It's important to clinical clerkship students to understand and practice standard precaution properly.

Objective:

Explore the knowledge and practice of standard precaution among clinical clerkship students of Atma Jaya Medical School.

Methods

A cross-sectional study was taken between April to June 2017, involving 63 students at Atma Jaya Hospital, Indonesia. A self-administered questionnaire was used to assess the knowledge and practice of standard precaution.

Results

There were only 19% of the respondents with adequate knowledge of standard precaution. Nevertheless, 98.4% students agreed that standard precaution should be applied for all patient regardless of their infection status. A total of 38.1% students believe that they are allowed to do recapping and followed with 38.1% students who were once impaled with needle during their clinical clerkship period. There were also 96.8 % students who agreed that standard precaution is necessary in contact with urine and faeces, although it is actually not necessary. There were no associations between knowledge and practice of standard precaution ($p>0.05$).

Conclusion

The knowledge and practice of standard precaution in Atma Jaya Hospital were still inadequate. A lecture before entering clinical clerkship and training of standard precaution are needed to increase their understanding and encourage the practice of a good standard precaution.

D 1101

CHILDREN PERCEPTION ON VOLUNTEER DENTAL CLINIC AND MINI-EDUCATIONAL PROGRAMS- A QUESTIONNAIRE STUDY

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Background and Aims

Hai-Tsuo is a holiday school located 20 kilometres away from Hualien City at eastern Taiwan and no dental facilities available. 40 children from Hai-Tsuo holiday school age ranged from 7~12 years-old was divided into 6 groups, rotated to receiving a one-day free volunteering dental care provided from 6 dentists of one medical centre and 5 mini-educational programs (dental care technique, how to use medications, generation of bowel habit, recognised our body) created via 18 medical students and 10 school teachers. A navigation to Tzu Chi museum also provided in between. In this study, we aimed to determine children perception on one-day volunteer dental clinic and mini-educational programs.

Methods

A mixed close and open-ended 15 questions was designed and group questionnaire survey was done in 30 minutes after the rotation of dental care and 5 mini-educational programs. One of the teacher standing in front of the whole group, read through every question and point out how to answer the questions. Children was informed safe and could ask any questions and helps from medical students and teachers.

Results

The recall rate of questionnaire was 98 %. The perception on dental visit revealed 72% children received at least once dental care in the past and 62% children visited at least once to the only medical centre in the eastern part of Taiwan. For this free dental care, 46% children do not feel visiting dentist is a terrible event but 95% of children do not know his or her dentist's name. The recall rate of revisit was 26%. For the concept of dental care, children can reply diverse reasons why dental care is important. 54% children use flossing to clean their teeth, but only 85% of children brush their teeth every day, and 79% brush their teeth before sleep. Up to 71% children did not checkup by their parents or grandparents before sleep. As for the imagination of a dentist, up to 41% children wants to be a dentist in their future life. The learned issues upon educational programs were diverse, which include how to care their teeth and the role of flossing, tips of using medications, the history of

Tzu Chi foundation etc. The activity was interesting and 80% of children feel happy and joyful about this volunteer activity. The highest selected activity was navigation to Tzu Chi museum. 100% children appreciated all volunteers involved in the activity. 38% will share their experience after going back home.

Conclusion

Questionnaire study to evaluate the perception of children is difficult. It involved theoretical and skills aspect of questionnaire design, the developmental milestone, the social, economic and cultural background, and cognition level of ever unique and diverse children, the timing and assisting them to accomplish a questionnaire also play some determining role.

Active participate in volunteer clinic and holding mini-educational program in extra curriculum service learning activity guiding medical students to witness the effectiveness of health literacy promotion.

D 1102

SYSTEMATIC REVIEW OF TOOLS FOR MEASURING MEDICAL PROFESSIONALISM

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Background and Aims

Importance: Professionalism is an ethical standard and competence central to the physician's social contract with society. There is a need for valid and reliable instruments to verify this competence during training.

Objective: Instruments for assessing medical professionalism are needed for evaluating medical students and residents, and curricular effectiveness. There is a need for a systematic review of existing instruments that purport to measure professionalism, to assess their psychometric properties. The objectives of this study are to identify available instruments in the published literature and to determine their quality and utility for assessing professionalism among trainees.

Methods

Evidence Review: We carried out a systematic literature search using PubMed®, PsychInfo® and Embase ® with relevant keywords and employed the PRISMA® criteria to assess study quality. Two researchers independently assessed instrument psychometric properties according to a standardised checklist, and synthesised the quality evidence for each instrument.

Results

Findings: Eleven instruments that met inclusion criteria were identified. The Professionalism Mini-Exercise (P-MEX) instrument has been evaluated by four studies. The P-MEX demonstrated evidence of high internal consistency and content validity. Other instruments, which were assessed in single studies, provided limited data for evidence synthesis.

Conclusion

Conclusions and Relevance: Among eleven instruments which met inclusion criteria, only the P-MEX has been tested in multiple studies. Limited validity and reliability information is available on ten of the eleven. No study has evaluated responsiveness of all instruments. More studies are needed to support the validity and reliability in the assessment of professionalism in medical education.

Year of Study: July 2017

D 1103

LEARNING BEYOND THE CLASSROOM FOR MEDICAL ONCOLOGY TRAINEES AT NATIONAL CANCER CENTRE, SINGAPORE (NCCS)

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Background and Aims

Medical oncology is a complex, rapidly evolving and less well-trodden specialty by residents. The learning curve from a junior resident to a trainee is steep, often compounded by clinical workload and responsibilities.

The current trainee-teaching program at our centre is dominated by didactic lectures. These are often passive, lack learner-engagement and do not allow meaningful content application that assists in knowledge retention. Anecdotally, learners are often found disengaged with poor content recall.

We hypothesize that an interactive case-based teaching model will be more effective. This would include team-based learning, case-based scenarios, supplemented by guided pre-tutorial readings.

Our primary aim is to design, initiate and compare the utility of an interactive case-based teaching-learning model with previous teaching methods. Secondary aims include comparing learner- and faculty-satisfaction and resource utilisation. We plan to utilise data obtained to improve the quality of education in NCCS.

Methods

Twenty-four NCCS medical oncology trainees with varying levels of seniority were divided into four groups. Eight faculty-chosen topics of similar difficulty were equally divided between two study arms. Both arms were conducted sequentially by the same faculty members.

The control arm consisted of didactic lectures. In the experimental arm, learning objectives and curated pre-tutorial readings were provided before the actual tutorial. Tutorials included activities such as mock multi-disciplinary tumour boards, debates and role-playing clinical scenarios. They were encouraged to apply pre-existing and newly-learnt knowledge in these scenario-based activities.

Each arm was preceded by scenario-based multiple choice questions (MCQs) (pre-tutorial test). The MCQs focused on clinical decision-making and tested knowledge application. This same MCQ was repeated at the end of each study arm (post-tutorial test). The pre- and post-tutorial test scores were then compared between the two arms. Learner- and faculty- satisfaction questionnaires were also completed.

Results

Test scores were compared using paired t-tests. A non-significant trend towards an improvement was found in both arms. In the control group, the scores were 58.9% versus 68.3% respectively. In the intervention arm, this was 59.5% versus 67.5% respectively (t-value 0.0194, p-value 0.98).

The results were confounded by multiple factors such as, a shorter timeframe from lectures to the post-test in the control arm, unreliable questions, competing clinical duties that resulted in high participant drop-out rates and hence not all participants having completed both study arms.

The questionnaires showed that participants had found the intervention arm sessions more enjoyable and useful, allowing them relevant knowledge application. Pre-tutorial readings encouraged accountability, and better prepared them for each tutorial. Faculty members felt more fulfilled with improved participant engagement. However, an intensive amount of preparation was needed, leading to concerns regarding sustainability. Nonetheless, majority of participants and faculty members preferred the interactive approach.

Conclusion

Our study showed no significant differences in test scores between conventional didactic teaching and the newer interactive case-based teaching model. However, multiple confounders have been identified. Satisfaction questionnaires favour an interactive case-based teaching model. We have proceeded to revamp our education program to include key components of the interactive case-based teaching model, while taking steps to ensure long-term sustainability.

D 1104**UNDERGRADUATE MEDICAL RESEARCH OUTREACH AND PROJECT MATCHING (ROPM) PROGRAMME TO SUPPORT RESEARCH ACTIVITIES AMONG MEDICAL STUDENTS AT THE NATIONAL UNIVERSITY OF SINGAPORE (NUS)***Ren YP, Lim JY, Si SY, Gupta M, Bin Abdul Aziz MND, Tey ML**Yong Loo Lin School of Medicine, National University of Singapore, Singapore***Background and Aims**

The Research Outreach and Project Matching (ROPM) programme is jointly organised by the Wong Hock Boon Society and NUS Medical Society Research Directorate. Since 2016, it has served as a platform for undergraduate Medical students to seek research opportunities and encourage research. In this study, we investigate research preferences while seeking a balance in demand and supply of students' choices and institutions. We aim to respond to trends after each cycle to help students develop their interests in different types of research, and to help institutions improve the diversity, quality and quantity of student research.

Methods

Every month, ROPM invites major tertiary hospitals in Singapore to offer research projects to NUS Medicine students. These projects are publicised to 1500 undergraduates, and applications are then collated by ROPM members. Applicants can apply for a maximum of three projects each month. Project matching statistics across 14 months from February 2016 to March 2017 were reviewed using Excel. Data from the first 7 months and the next 7 months are separated into the first and second half respectively and various factors such as application rates throughout the programme are reviewed. The projects reviewed are offered by 4 major tertiary hospitals, National University Hospital (NUH), Singapore General Hospital (SGH), Changi General Hospital (CGH) and Ng Teng Fong General Hospital (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. Surgery had the greatest number of projects offered at 23.3%, followed by Renal Medicine with 11.0%, and Dermatology and Pharmacology with 9.88% each.

Throughout the programme, Respiratory Medicine, Paediatrics, Epidemiology, Surgery, and Anaesthesia have consistently been strong preferences, with more than half of their projects applied for. Surgery had the largest surge in applications. Other departments met with strong interest include Microbiology and Immunology, Renal Medicine, Pharmacology and Psychiatry at 50.0%, 47.4%, 47.1%, 42.9% respectively.

NUH and SGH offered the most projects at 54.7% and 34.9% of all projects. The application rates are 68.1%, 60.0%, 40.0%, and 37.5% for NUH, CGH, SGH, and NTFGH respectively. In the second half, projects offered by SGH each cycle has increased by 73.0% and NUH by 50.0%. The most preferred project type was Medical Research, increasing from 47.6% to 53.8%, while Clinical Audit saw the greatest decline in both projects and applicants. Significantly, a greater diversity of research responsibilities was seen, with increased student involvement such as manuscript writing and presentations. 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. It is significant to note that with the increase in diversity of projects, students' preferences in both departments and types of projects has increased and widened, and hence further improvements to these factors should be considered with new methods to promote student interest.

D 1105**RELATIONAL ELEMENTS OF MENTORING - AN APPROACH USING COMPLEX ADAPTIVE SYSTEMS THEORY***¹Quek S, ²Choy CH, ³Yi Z, ⁴Toh YP, ²Krishna L**¹Centre for Healthcare Simulation, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ²Department of Palliative Medicine, National Cancer Centre, SingHealth, Singapore, ³Department of Internal Medicine, Singapore General Hospital, SingHealth, Singapore, ⁴Division of Family Medicine, National University Hospital, National University Health System, Singapore***Background and Aims**

Mentoring relationships are core to the mentoring subset as each individual mentor-mentee dyad contains unique relational elements that contribute to the success of mentoring. However, these elements are not easily studied as the mentoring relationship is dynamic and constantly evolving. It is also difficult to predict factors that will lead to success in the relationship as the mentoring relationship is between two individuals with their own unique background, personality and make up. This study looks at how a complex adaptive systems model allows the mentoring relationship to be studied such that it can be improved.

Methods

A literature search on complex adaptive systems in healthcare education was carried out in PubMed, ERIC and Google Scholar on complex adaptive systems in education. All English papers describing the employment of complex adaptive systems in healthcare education were included. No restriction was made pertaining to the type of articles excluded. Open coding and thematic analysis was carried out and concepts of complex adaptive systems were employed in an analysis of mentoring relationships.

Results

Thematic analysis described themes such as (a) an evolving relationship, (b) the relationship evolving to the external environment, (c) the adaptability of the relationship to the external environment and (d) the complex relations within the mentoring dyad. Mutual trust and respect, built through open and honest communication leading to a collaborative, productive partnership within the mentoring relationship through which both mentor and mentee benefit, appeared as a recurrent theme as the cornerstone to building a successful mentoring relationship.

Conclusion

Complex adaptive systems accepts the complexities of a mentoring relationship and studies how each unique mentoring dyad responds to changes within and without the dyad. Despite unforeseen circumstances or evolving social or environmental factors that may challenge the relationship, resilience and adaptability in the mentoring dyad can be built through trust and honesty to face the challenges along the way. Mentor training and having a pre-mentoring meeting to establish mentoring goals are recommended to build effective communication, and by extension, trust, within the mentoring dyad.

D 1106

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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Background and Aims

In many wet labs, fresh or preserved specimens are used for surgical teaching. One important factor is the suitability of specimens. In addition, the infectious risk and cost involved in using wet lab specimens are problems that need to be solved. This study evaluates 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

30 hind limbs and 30 fore limbs from 15 pigs were embalmed. The Ethanol-Glycerin-Acetic acid- Saturated Salt solution fixation with traditional herbal conservation are described. Embalmed specimens were compared with fresh specimens. Bacterial and fungal culture tests and measurement of ranges of motion were conducted for each specimen. Tissue handling qualities were evaluated by surgeons. In addition, ultrasonography and diathermy were performed in some specimens.

Results

Our method had a sufficient antibiotic effect and produced specimens with flexible joints and a high tissue quality. All embalmed specimens were preserved at room temperature for one month but still similar to the fresh specimens. The surgeons evaluated the specimens embalmed by this method to be highly equal to the fresh specimens.

Conclusion

Specimens, embalmed by the Ethanol-Glycerin-Acetic acid- Saturated Salt solution fixation and traditional herbal conservation, 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.

D 1107**USAGE AND IMPACTS OF MEDICAL SMARTPHONE APPS AMONG THE MEDICAL STUDENTS IN TAMIL NADU, INDIA****¹Akbar Ali SF, ²Thangavelu S, ³Thirumalaikolundusubramanian P***¹Chennai Medical College Hospital & Research Centre (SRM Group), India, Departments of ²Community Medicine and ³Medicine, Faculty of Medical Sciences, Chennai Medical College Hospital & Research Centre (SRM Group), India***Background and Aims**

Medical science has been expanding so much in the past few decades. The increasing complexity of the health care system contributes more challenges to the learners as the time advances. E-learning has been the miracle of the century, slowly replacing medical textbooks and providing an almost alternative equivalent. E-learning is defined as the use of internet technologies to enhance knowledge and performance. Increased availability of medical educational smartphone apps has aided not only in learning aspects, but also enhanced its clinical applications. It has been found earlier that more than 40% of medical students turn to smartphone apps as their first choice of reference. Despite the plethora of medical apps available to medical students, many students lack familiarity with this platform and its appropriateness. Hence for recognising its potential as an effective educational tool, a better understanding of its usage and the attitude is required. Therefore this study is conducted in order to find out the usage and impacts of smartphone medical apps in clinical practice.

Objectives:

- 1) To find out the proportions of students using health applications.
- 2) To find out factors influencing medical students for usage and
- 3) To assess the impact of such applications on their day-to-day clinical practice.

Methods

A cross-sectional study has been designed to find out the usage of medical apps among Medical students and interns of various medical institutions of Tamil Nadu, India. Medical Students belonging to first year to internship are considered for this study. The study will be carried out over a period of 3 months (August to October 2017). Convenient sampling method is done to obtain a sample size of 300 individuals. A pre-tested and pre-designed self-administered questionnaire will be given to the participants, the data will be collected and statistical analysis will be done using SPSS software 16. The data will be expressed in percentage and proportions. To find out the difference between the proportions, chi-square will be used. ($p < 0.05$ will be considered significant). The ethical clearance has been obtained from the institutional ethics committee, Chennai Medical College Hospital and Research Centre, Irungalur, Trichy and informed consent will be obtained from the participants prior to the study.

Results

The results will be presented at the 'Asia Pacific Medical Education Conference (APMEC-2018)', to be conducted during January at National University of Singapore, Singapore.

Conclusion

Detailed study with large number of students will throw light on the utilisation pattern and its impact among student community. Furthermore this is expected to bring out the status in different institutions and identify the gaps in knowledge, practice and the impact of usage of medical apps among those medical students.

D 1108

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

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Background and Aims

The BioMedical Admissions Test (BMAT) is used by universities for selection to medicine courses. It focuses on key skills needed for success in demanding science-based study by assessing across three sections: aptitude and skills (Section 1); scientific knowledge and applications (Section 2) and written communication (Section 3). Face-to-face learning in school supports development of the skills assessed by BMAT, which are relevant to school level examinations and also useful for biomedical study at university. However, external sources of help are also available to candidates, including commercial resources offered by third-parties.

Cambridge Assessment Admissions Testing provides free online preparation materials including past papers, answer keys and guides that support revision. These resources use technology to provide free access to BMAT candidates around the world, partly to combat perceptions that purchasing additional training is needed to achieve good BMAT scores, which is a marketing claim made by providers of commercial courses.

The current study aimed to understand how candidates prepare for BMAT. In particular, the proportion of candidates using free online materials and the proportion paying for extra help were of interest. The association between preparation behaviours and BMAT performance was also investigated.

Methods

295 BMAT November 2015 session candidates completed an online survey which asked candidates about their use of different materials in preparation for BMAT, including the freely available online resources and external sources of help. Survey responses were linked to candidates' BMAT scores for analysis.

Results

The majority of respondents used free material from the BMAT website and accessing past papers was reported most commonly, indicating that these resources fulfil their aims of providing widespread access. Only a minority of respondents reported attending commercial courses, and when self-study was included in analysis, course attendance did not predict BMAT performance. Accessing online material was also not associated with better performance, but this may be due to the small number of respondents reporting no use of these resources. Reporting a specific use of the free online materials, practicing under timed conditions, was associated with higher BMAT scores.

Qualitative responses indicated a generally favourable perception of the online materials provided; however, some participants indicated strong preferences for printed versions of resources available exclusively online, such as the BMAT Section 2 Assumed Subject Knowledge guide.

Conclusion

This study suggests that BMAT candidates make use of free online materials provided by Cambridge Assessment Admissions Testing and that these resources may facilitate effective preparation, particularly when used to practice under timed conditions. Paying for commercial preparation courses was comparatively less widespread, according to self-report. Although official online materials were widely used and perceived favourably, some findings suggested greater engagement with print materials.

In particular, practicing under timed conditions would typically require practice papers to be printed and respondents expressed a desire for the BMAT Section 2 Assumed Subject Knowledge guide to be provided in print form. These findings have implications for future provision of preparation materials delivered using technology. Further research could also investigate more recent additions to the BMAT preparation materials provided, such as webinars.

E-POSTER PRESENTATION SESSION 19

- D1109** **Validation of Collaborative Practice Assessment Tool (CPAT) in Indonesian Healthcare Setting**
Rezki Yeti Yusra, Indonesia
- D1110** **Pitching of Language Barrier in “Little Shared Language” Interactions with Simulated Patients**
Tanya Tierney, Singapore
- D1111** **Towards Online Case Study Repositories for Healthcare Institutions**
Hwee Sing Khoo, Singapore
- D1112** **Utilisation of E-Learning for In-Service Training – 5-Year Results**
Yan Jin, Hong Kong S.A.R.
- D1113** **Are There Specialty Differences in Physicians’ Impression of a Good Clinical Teacher?**
Guan Luan Ng, Singapore
- D1114** **Online Interactive Decision Support Tools (IDST): A Scalable Educational Resource to Impact the Management of Diseases with Complex Treatment Algorithms**
Jim Mortimer, United Kingdom

D 1109

VALIDATION OF COLLABORATIVE PRACTICE ASSESSMENT TOOL (CPAT) IN INDONESIAN HEALTHCARE SETTING

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Background and Aims

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. A thorough literature review suggested that 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. Hence, it must be validated first. The purpose of this study was to provide evidence on the validity and reliability of Indonesian adaptation of CPAT.

Methods

This study used cross sectional design to provide evidence on the validity and reliability of Indonesian version of CPAT questionnaire. The study involved 304 medical and healthcare practitioners at Cipto Mangunkusumo Hospital from March to June 2017. The study was conducted through 3 stages: language adaptation, pilot study and validation study. The data was analysed 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.

Results

A total of 304 completed questionnaires were eligible for analysis. The results of the construct validity test was good and a total of 3 items were removed from 56-item of an original CPAT. The correlation coefficient of 53 items was >0.3 with significance level of 5%. Extraction using principal component analysis and oblimin rotation method resulted in 8 components (relationships among members; team barriers; team relationships with community; coordination and role sharing; decision-making and conflict management; leadership, missions, meaningful purpose, goals; patient involvement; responsibility and autonomy). Cronbach alpha of Indonesian version of CPAT was very good (0.916).

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 subscales in Indonesian CPAT compared to the original CPAT. The Indonesian version of CPAT fulfils the criteria of construct validity and reliability of a questionnaire both as a whole set and in each subscale. The questionnaire can be used further to assess interprofessional collaboration practice of health professionals in Indonesia.

D 1110

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

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Background and Aims

Poor communication can cause medical error and reduced patient satisfaction, and is more likely to occur if there is a language barrier. We live in a multilingual society with four official languages (English, Mandarin, Malay and Tamil), however some older people only speak other Chinese dialects. Language barrier is therefore commonplace, providing an important context to study the skills needed by medical students and the associated challenges for teaching and learning.

Methods

Clinical Communication is taught as a vertical course. To address the issue of language barrier we include a "Medical Language" theme, including role-play with Simulated Patients (SPs) simulating specific language barrier scenarios. We provided two types of training for SPs; a general workshop addressing the issues of language barrier and one-to-one SP training to support acquisition of specific patient roles. We explored the experiences of SPs in "minimal English speaking" scenarios through questionnaires and observation of teaching sessions. In addition, students and facilitators completed ratings forms evaluating the extent of language barrier during the role-play.

Results

SPs did not experience difficulty in modulating their language when portraying minimal English speaking patients. However, they found that "filtering" of English was more challenging; they needed to deliberately decide "as this patient, have I understood the student's question?" before answering. Students and facilitators mostly found the level of language barrier to be appropriate and the scenarios realistic.

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. By identifying the specific challenges for SPs in language barrier scenarios, we have tailored the training for SPs to focus on the most challenging aspects of portraying language barrier. As a result, student and facilitator evaluations rated the scenarios as realistic and appropriately pitched in terms of language barrier.

D 1111

TOWARDS ONLINE CASE STUDY REPOSITORIES FOR HEALTHCARE INSTITUTIONS

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Background and Aims

Vicarious learning - the process by which an individual learns from another's experience - has long been recognised as key to both individual and organisational improvement, and is often thought to take place by observation, or by individual and group sharing. However, such methods limit the accessibility of knowledge shared. Case studies (real life or composite) represent a powerful tool for teaching complex but healthcare transformation issues, such as managing change, leadership, professional development, communication and innovation. We report the development of an institution-wide, online case study repository for the documentation of valuable learning experiences in these areas. Harnessing technology as a means of managing knowledge allows one to learn vicariously, not just from the informal curriculum, but also presents an easily accessible archive of knowledge for retrieval and referencing at one's own time.

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, as we envisioned different learning needs for these two groups. The online survey form asked questions about the respondents' familiarity with using case studies in teaching, how likely they were to use them, as well as preferences regarding case length and topics. A section was also included to ask if respondents would like to contribute and/or write cases for the repository.

The survey provided some answers as to the size of the community which was likely to use the cases as teaching material, types of cases most suited for teaching, as well as the sustainability of the case repository. An existing institution-wide e-learning platform will be used to host the repository to ensure educators are able to easily access case materials, as well as to propose suitable materials through an online case suggestion form.

Results

Both clinician and non-clinician groups responded positively to the needs analysis survey. Majority of them (75.9% (n=141) of clinician educators; 56.7% (n=30) of non-clinician educators) indicated that they would like to have online resources to learn how to use case studies for teaching. About half of both groups (54.6% of clinicians, 50% of non-clinicians) responded that they were very likely to use case studies in their teaching next year, with communication (interpersonal communication, collaboration and teamwork) indicated as the most useful topic for both groups (71.6% for clinicians and 60% for non-clinicians).

A case suggestion form was created in response to enquiries from respondents eager to contribute their learning experiences as cases in the repository. This would provide a pipeline of materials which a small number of trained case writers could turn into teaching cases. Educators could also indicate if they were interested in being trained as case writers. The existing e-learning portal allows the tracking of log-ins and downloads, providing us with information about "in-demand" topics for teaching.

Conclusion

This case repository initiative therefore functions as a self-sustaining partnership between different educator groups in the institution, providing a platform for educators to develop materials that are contextualised to their specialties and institutional settings, without much additional resourcing.

D 1112

UTILISATION OF E-LEARNING FOR IN-SERVICE TRAINING - 5-YEAR RESULTS

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Background and Aims

All medical graduates in Hong Kong and overseas candidates who is pursuing medical career in Hong Kong have to complete a 12-month hospital based internship to register as a doctor. 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 for intern to ensure the continuous quality learning and improvement of patient care during this internship.

Methods

Healthcare professionals agree that the effective way is to convert important topics related to patient care from didactic lecture to web-based training modules and be accessed by intern at any time. Topics of Medication Safety, Blood Transfusion, Resuscitation, Fluid Therapy, Legal Issues, Electrolyte Disorders, Procedural Sedation are picked. Seven interactive e-Learning training modules were developed in Year 2013 by Faculty of Medicine, The Chinese University of Hong Kong (CUHK). These seven modules have been delivered to more than 400 interns every year via Learning Management System (LMS) before the start of internship and during the whole internship year.

Results

In the past 5 years, 100% of interns studied all modules every year. More than 90% intern agreed that the contents are useful and relevant to their work. More than 80% of intern agreed that e-learning module is an effective mode to help them learn. Feedback from intern were collected for healthcare educators to further improve of 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 whole internship year.

Conclusion

Well designed and well-constructed e-Learning modules provide effective training and improve intern performance related to patient safety. It may be used as a constant training method. Apps have been developed for seven modules and delivered to interns in Year 2017. Technology enhanced the education for improvement of patient care.

D 1113

ARE THERE SPECIALTY DIFFERENCES IN PHYSICIANS' IMPRESSION OF A GOOD CLINICAL TEACHER?

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Background and Aims

Studies on faculty evaluation and development focus on identifying attributes and skills that applies to all faculty and clinical teachers such as "giving residents feedbacks", "creating a positive learning climate" and "a professional attitude towards residents". However, less is known about potential differences in attributes and skills perceived to be important across specialties. Differences may arise through exposure to specialties in the course of training ('socialisation') or through preferences that lead physicians to choose certain specialties ('selection'). This study aims to investigate whether physicians from different specialties differ in their perceptions of what is considered to be important attributes and skills for clinical teachers.

Methods

932 (62.3% response rate) faculty and trainees provided importance scores for 15 attributes of good clinical teacher. Importance scores were collected using Best-Worst Scaling format where participants select their best and worst choices from a set of 5 alternatives randomly spread across 12 different sets.

We then used the ratio of the number of times best was chosen to number of times worst was chosen for each attribute to compare the importance of each attribute across specialties. To explore the role of 'socialisation' and 'selection', in-depth analyses comparing junior, senior trainees and faculty members were conducted for 6 specialties that have data across the entire spectrum of training exposure.

Results

Different specialties do not have the same perceptions regarding importance of attributes and skills of a clinical teacher. Residents and faculty from surgical specialties (general and orthopaedic surgery) are more likely to perceived providing opportunity to learn as the most important attribute whereas residents and faculty from Psychiatry, Emergency Medicine and Diagnostic Radiology are more likely to perceived psychological safety as the most important attribute. While there are differences between junior, senior trainees and faculty, there are not clear patterns suggesting either socialisation or selection.

Conclusion

The observed discrepancies could be due to the nature of different specialties e.g. surgical specialties requires the use of scalpels, electrocautery devices to make accurate incisions thus privileging the need for hands-on and the opportunity to learn and practice. Understanding perceptions of a good clinical teacher and specialty differences will allow development of clinical teachers to cater the needs of physicians from different specialties.

D 1114

ONLINE INTERACTIVE DECISION SUPPORT TOOLS (IDST): A SCALABLE EDUCATIONAL RESOURCE TO IMPACT THE MANAGEMENT OF DISEASES WITH COMPLEX TREATMENT ALGORITHMS

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¹Medical Education - Oncology, CME Program Development, Clinical Care Options, United Kingdom, ²Independent Grants for Learning and Change, Medical Affairs, Pfizer, United States of America

Background and Aims

Online clinical decision support tools developed as independent medical education can provide physicians with easy access to fair-balanced expert treatment recommendations that are patient-specific. This type of resource is especially impactful in life-threatening diseases such as cancer with rapidly expanding therapeutic options and an urgency to make optimal clinical decisions effecting patient survival and quality of life. This presentation will provide insights on more than 30 oncology-focused IDSTs published by Clinical Care Options (available at: clinicaloptions.com/OncTools) and supported by grants from more than 18 different companies across 13 topics in the past 2 years alone.

Methods

IDSTs are developed by experts (5 experts per tool) who provide specific treatment recommendations for hundreds (typically 400-600) of different patient scenarios based on the key factors that guide treatment choices in their practice. To use the tools, participating clinicians enter patient and disease factors (age, comorbidities, biomarkers, prior treatments, etc.) along with their intended treatment plan for that case. When case entry is complete, the 5 expert treatment recommendations for that specific case are shown followed by a short survey designed to determine if the patient case is hypothetical or real and whether the expert recommendations changed the clinician's planned course of treatment.

Results

Routinely, more than 1000 patient cases are entered into IDSTs by clinicians. Although experts largely agree for most patient scenarios, large variation is observed between the consensus expert recommendations and the planned treatment of the clinicians using the tools. This allows for an educational gap analysis and shapes the design of future medical education. Analyses of the tools have also shown an impact on practice. An average of 32% of participants (range 12-43%) indicate the expert recommendations changed their planned treatment and 37% (range 20-52%) of cases entered into the tools represent real patients.

An IDST developed in 2016 to address management of immune-related adverse events (irAEs) had nearly 3000 cases entered into the tool (18% from Asia-Pacific clinicians). The planned treatment of tool users differed from experts for 49% of the cases while expert recommendations confirmed or changed practice for 93% of cases. The updated tool (May 2017) already has an additional 947 patient cases entered. The utility of IDSTs as a global clinical resource can be enhanced further with tool updates that use experts from specific countries. A US expert-led IDST for lung cancer was updated with recommendations from experts practicing in China, Japan, Hong Kong, and Italy replacing 4 of the 5 US experts used on the prior version of the tool. Of the 653 cases entered in this international version of the IDST, 88% (21% from Asia-Pacific) were from outside the US, and these country-specific expert recommendations affected treatment choice for 73% of cases.

Conclusion

IDSTs have an established role as an effective and efficient educational resource to guide therapeutic decisions and can be maintained and extended through expert regionalisation and grant support from multiple sources. The presentation will include educational design strategies as well as examples of utilisation and practice gaps specific to Asia-Pacific clinicians.

Saturday 13 January 2018

Virgo 3, Level 1, Resorts World Convention Centre

1.00pm – 1.45pm

E-POSTER PRESENTATION SESSION 20

- D1115** **Teaching of Medical Biochemistry in a 3-Step Approach: Hook, Mount and Interpret**
Yun Chau Long, Singapore
- D1116** **Provoking Cognitive Medical Errors Using Virtual Patients**
Wen Da Seah, Singapore
- D1117** **Effect of Stress on Thai Medical Students**
Phuangphet Siriloetthananon, Thailand
- D1118** **Research on Improvement Quality of Practical Medicine Training at Vietnam Military Medical University**
Than Son Le, Vietnam
- D1119** **NUS Medicine Attempt at Curriculum Development: The Curriculum Outcomes Definition and Curriculum Rationalisation Exercise**
Ching Man Liu, Singapore
- D1120** **What's Next? Call Doctor or...?**
Chi Yen Choa, Taiwan

D 1115

TEACHING OF MEDICAL BIOCHEMISTRY IN A 3-STEP APPROACH: HOOK, MOUNT AND INTERPRET

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Background and 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 "memorised". 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 visualisation to acquire the concepts, and fill in the details when the framework is in place. The hook is also encompass an engaging launch that captures the students' interest and grabs them into the discussion, which is only feasible when the instructor's passion for the subject shines through, and the subject is pitched at the right level based on the students background. 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 minimising the element of memorising facts. Students are then requested to provide quantitative and qualitative assessment of the approach.

Results

The 3-step approach enhanced the students' thinking ability and general interest in biochemistry. Overall effectiveness of teaching is also observed in the qualitative feedback which are provided by the students.

Conclusion

This approach is simple and useful in teaching a wide range of topics including enzymology, metabolism as well as signal transduction in the context of biochemistry.

D 1116

PROVOKING COGNITIVE MEDICAL ERRORS USING VIRTUAL PATIENTS

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Background and Aims

Cognitive medical errors have a significant impact on patients, their families, and the healthcare system. These errors are preventable, and are due to systemic and human factors. This study investigates the viability of using Virtual Patients as an educational approach that fosters learning from errors, making thereby health professionals in training more cognisant of these medical errors and working to avoid them. This aim is addressed by investigating the types of errors that can be provoked using Virtual Patients, and the reasons behind them.

Virtual Patients are programs which simulate clinical encounters with patients. Features of Virtual Patients include history taking, physical examination, investigations and interventions. In branched virtual patients, the learner takes actions that influences the progression of the patient cases.

Methods

The Virtual Patient software used was Open Labyrinth, which presents a case of paediatric vomiting to participants. We embedded several errors that participants might make as they went through the case, and formulated criteria that we would use to identify these errors in participants.

We tasked third-year medical students (n=9) to complete the Virtual Patient case. They were instructed to verbalise their thoughts, as per the Think-Aloud protocol, as they proceeded through the case, along with their reasons to support their decisions. We recorded both their answers to the case, as well as their verbalised thoughts. Analysis of these recordings and answers provided insights on the errors made and the reasons behind them.

Results

The errors of Ignorance - having a lack of knowledge to attempt a task, and Sloth - failure due to effort required or lack of reward, were the most common in the study (42.9% and 38.5% respectively). We observed a relationship between the individual Ignorance errors and the expected knowledge of the participants, and that the Virtual Patient case creator can easily vary the content to provoke various Ignorance errors. We have two justifications for the Sloth errors provoked; that participants were more likely to spend effort on concepts they were knowledgeable on, and on information presented earlier in the case.

The errors of Fixation and Playing the Odds were rare (0% and 11.1% respectively). We attribute this error avoidance to the format of the Virtual Patient program, where all the information was presented to the participant easily. This contrasts with clinical practice, where the clinician discovers information through patient interaction. Mis-triage was rare, at 11.1%. We believe this to be due to the participants' training, which involves identifying and managing paediatric emergencies.

Conclusion

We believe that Virtual Patients have the potential to provoke cognitive medical errors and even highlight them to the participants. We identified several factors to explain these errors, and future trials could be done to isolate and explore these factors. These trials would also experiment with wider sample populations and different amounts of prior knowledge.

D 1117

EFFECT OF STRESS ON THAI MEDICAL STUDENTS

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Background and Aims

Stress can usually occur in everyone. Medical students tend to have high risk for stress because of their responsibilities and heavy duties. Stress may have physical and psychological effects on the well-being of medical students. This might affect learning activities and academic achievement, therefore the first line of detection and defense from stress is the students themselves. This study aims to study the stress level, its related factors and its effect on academic achievement in Princess of Naradhiwas University medical students in the southern part of Thailand.

Methods

All the 4th-6th year medical students at Medical Education Centre, Songkhla Hospital were enrolled in this descriptive study. Data were collected by questionnaire which consisted of 1) general information 2) Suanprung Stress Test-20, SPST-20. The data were collected and analysed by using t-test, F-test by One-Way ANOVA. Students' academic achievement from final exam at the end of 5th and 6th year were compared with the 4th year medical students.

Results

The response rate was 91.67% (N = 66/72). The 4th year medical students had stress at moderate level. While the 5th and 6th year medical students showed high and severe level of stress. There were no statistical significance in the correlation between level of stress and other factors (gender, year of study, previous academic achievement, home town and economic status, $P > 0.05$). After the final exam, the overall number of stressful 5th and 6th year medical students who passed the exam were 100% and 87.5%, the exam results demonstrate better than the least stressful 4th year medical students (39.1%).

Conclusion

Medical students seem to experience some stressful event. But how they struggle towards their problems leading to different results. In order to help them achieve their goals. Students need to be given time and tools to recognise it, thus helping them to adjust their positive mindset can change the outcome.

D 1118**RESEARCH ON IMPROVEMENT QUALITY OF PRACTICAL MEDICINE TRAINING AT VIETNAM MILITARY MEDICAL UNIVERSITY**

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Background and Aims

Identify the present teaching-learning environmental challenges at the Abdominal Surgery Department, Vietnam Military Medical University (VMMU). Propose solutions to improve quality of training for abdominal surgery practice in VMMU.

Methods

Analyse and generalise theoretical and practical basis. Record actions of teachers and students in each model of medical training. Enquire 375 students practising models and program of practical medicine training at the Abdominal Surgery Department, VMMU from 1/2013 to 9/2013.

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. Enquire 375 students showed that:

Knowledges and skills gained from model training: 95.7% of students agreed with opinion that briefings training was good for development cases report skill; 97.8% thought that clinical illustration was good for examination patient skill. 92.3% and 98.5% approved that clinical discussion was good for diagnosis and treatment skills respectively; 93.7% assented that results of assisted operation model depending on experiences of teachers; 93.8% agreement for learning on duties was useful to development follow and take care patient skills.

Preparation before clinical lesson: On clinical illustration model, 98.7% of students thought good theoretical knowledge was required, 99.8% found that pre-examination on patient need to be done. On clinical discussion model, 91.5% agreement with pre-referred patients' document, 99.5% thought that good theoretical knowledge was required. On assistance operation model, 99.6% assent that particular technique pictures need to be preview.

Conclusion

Development and improving teaching and learning methods are needed at VMMU. The use of training model should be from the fact and students' need. It needs to be a combinal solutions inclusive of developing teacher and system of document and books, application for multi-media in training.

D 1119**NUS MEDICINE ATTEMPT AT CURRICULUM DEVELOPMENT: THE CURRICULUM OUTCOMES DEFINITION AND CURRICULUM RATIONALISATION EXERCISE**

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Background and Aims

To cope with the changing healthcare landscape in Singapore, the NUS Yong Loo Lin School Medicine (NUS Medicine) embarked on a Outcomes Definition and Curriculum Rationalisation (CR) exercise in 2012 to rationalise the undergraduates medical curriculum. This paper aims to share NUSMedicine's experience in implementing the various theories in Curriculum Development through this exercise, and the huddles encountered and how we overcame them.

Methods

The CR exercise was prefaced with a curriculum documentation exercise through Structured Learning Activities and Entrustable Professional Activities. There were 4 stages planned, following the principles of backward design: first to blueprint the desired curriculum; two to list topics foundational to achieve outcomes, identify gaps and redundancies, and determine minimum competency; three to involve the departments to finalise desired curriculum and develop change management plans; and four to effect these proposals and implement the planned changes into the curriculum. This CR exercise also was envisioned as the foundation for ongoing curricular quality assurance.

Results

Over the past 5 years, the CR exercise has blossomed into a faculty development effort, involving over 300 content experts and core educators from various discipline in a conversation to define and redefine the curriculum. From this exercise we also crystallised the Recommendation paper for pre- and para-clinical curriculum content review, and the Entrustable Professional Activities publication (Compass: an EPA guide to teaching and learning), detailing the minimum expected learning outcomes for over 400 core topics. The rationalised curriculum was launched to the first year students of the AY17/18 batch in Aug 2017.

Conclusion

The CR exercise opened up the much needed conversation to explore horizontal and vertical integration of knowledge between highly specialised disciplines in the school.

D 1120

WHAT'S NEXT? CALL DOCTOR OR...?

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Background and Aims

Although nurses had been trained in ALS (Advance Life Support), who still feel flustered in the face of "Blue code". They can't do their and use TRM skill well in emergency situation. We use simulations to train our nurses in two phases. The purpose of the first phase of training is to improve the nurses' adaptability. This program has two stages. In the first stage, we selected two units in both medical and surgical departments to carry out training. In the second stage, all units of nursing department will carry out training based on the results.

Methods

There are three evaluation project. The first project is evaluation items of ALS completion rate. The second project is self-assessment of ALS competencies.

The third project is after - test satisfaction. We have organised ALS courses for nurses from April to May. Ensure that staff have knowledge of ALS.

We held four simulations in June.

The process of simulation:

Step 1. Introduction to the environment for 5minute

Step 2. Self-assessment of ALS competencies.

Step 3. Simulation for 15minute.

Step 4. Debriefing for 10minutes.

Results

In the first project, the evaluation items of ALS completion rate was 59.8%. In the second project, the overall post-test average was 3.16 points higher than the pre-test (3.05) by 0.11 points. In the third project after - test satisfaction average was 4.73 points (with answers as a Likert scale).

Conclusion

The error items of ALS in July to December (11) fewer than January to June (14) by 3 items. Especially, the number of occurrences of error reduced from 11 to 3 times at night. We know that this project is helpful in training of ALS but the ability of our staff also needs to be improved.

E-POSTER PRESENTATION SESSION 21

- D1121** **Demonstration of a Sustainable Resident-Led Internal Medicine Post-Graduate Examination Preparatory Course**
Benjamin Yong-Qiang Tan, Singapore
- 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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Jing Jing Chan, Singapore

D 1121

DEMONSTRATION OF A SUSTAINABLE RESIDENT-LED INTERNAL MEDICINE POST-GRADUATE EXAMINATION PREPARATORY COURSE

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Background and Aims

The Membership of Royal College of Physicians (MRCP) Practical Assessment of Clinical Examination Skills (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 National University Health System (NUHS) Internal Medicine Chief Residency Program had 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. This station carries the highest mark weightage of the examination. We aim to demonstrate a sustainable near-peer teaching effort through a resident-led preparatory course.

Methods

Over 2 years from 2016-2017, two runs of the course were conducted by near-peer resident educators who had recently passed the MRCP examination. A 5-month preparatory timeframe was required to plan the case scenarios, recruit tutors and patients. The cases were arranged in a round-robin circuit with 8 stations (each primed with 2 patients). At the end of every station, examiners provided immediate quantitative and qualitative feedback to the participants. Structured questionnaires administered before and after the course were used to assess the participants' perceptions towards the Station 5 examination and the preparatory course. 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. The previous years' Chief Resident supervised the incoming Chief Resident in the organisation of the course.

Results

All 75 participants responded to the survey over the two runs (n=35 in 2016, n=40 in 2017). The mean age was 27.01 ± 27, with 45% being male. About half who attended the course (49.3%) had graduated from medical school within the last 2 years. The mean attempt number for their next exam was 1.23 ± 0.63. Before the course, 90.7% (n=68) of participants perceived station 5 to be stressful and a further 78.7% (n=59) felt Station 5 was comparatively more stressful than the other PACES Stations.

Only 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. The Chief Residents had also given feedback that they benefited from the organisational experience in planning for an executing this preparatory course.

Conclusion

We demonstrate that a resident-led preparatory course can be well-received, and that residents play a vital role in near-peer teaching. Further study could be conducted to assess the effectiveness of such a course in direct comparison with professionally run PACES preparatory courses.

D 1122

CROSS SECTIONAL STUDY OF PERCEPTIONS OF QUALITIES OF A GOOD MEDICAL TEACHER AMONG MEDICAL STUDENTS FROM FIRST TO FINAL YEAR

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Background and Aims

Defining the characteristics of a good medical teacher has implications for faculty selection and development. Perceptions of characteristics may differ with level of training and cultural context. There is currently no quantitative literature describing the progression of learner perceptions of desirable teacher characteristics from first to final year medical students.

We aimed to determine learner perceptions of desirable teacher characteristics in an Asian medical school, and whether this evolves from pre-clinical to clinical years.

Methods

For this cross sectional study, we modified a validated questionnaire with permission from original authors from Melaka Manipal Medical College, including a broad base of desirable characteristics from current literature. Participants were asked to rate each characteristic on a 5 point Likert scale and rank their 5 most desirable characteristics.

The modified questionnaire was validated in a pilot pool of medical students (n=69) with a Cronbach's Alpha of 0.90 indicating good internal consistency. A total of 35 characteristics were analysed.

We administered the questionnaire to Year 1 to Year 5 medical students (n=917) in an Asian (Singaporean) medical school. We analysed for differences across years of study using the Kruskal-Wallis test and for trends using the chi-squared test. Characteristics were grouped under teacher, physician and human domains based on existing literature regarding desirable medical teacher characteristics.

Results

Based on proportion of favourable Likert scoring, the 4 most desirable characteristics were common across first to final year students: good communication skills (84.4% of all respondents), sound knowledge of subject (82.7%), being enthusiastic (78.4%), and providing effective explanations (74.4%).

The same characteristics were also most often specifically ranked as the most desirable, as follows: good communication skills (19.9% of responses in Year 1; 14.7% in Year 2), being enthusiastic (13.7% in Year 4), and providing effective explanations (14.4% in Year 3; 17.0% in Year 5).

Aggregating proportion of favourable Likert scores across all respondents, human (56.8% of respondents) and teacher characteristics (53.4%) were more desirable than physician characteristics (36.3%).

Awareness of student's interests and needs ($p=0.001$), being easily approachable ($p=0.005$), encouraging student participation ($p<0.001$) and offering constructive criticism ($p<0.001$) were more important in the clinical years (Years 3-5) compared to pre-clinical years (Years 1-2).

Based on proportion of favourable Likert scoring, the 3 least valued characteristics were common across all 5 years of study and were: active in research (10.5% of all respondents), innovative in using technology (13.3%), and many years of experience (17.2%).

Conclusion

The top characteristics in this study were consistent across all years of medical students. Characteristics emphasised in clinical years facilitate active learner participation, consistent with a shift from behaviourist or cognitivist strategies to constructivist strategies as learners progress. Beyond a sound knowledge of the subject, human and teacher characteristics predominate over physician characteristics.

These characteristics are a potential area for research, to determine whether teachers with these characteristics produce better objective learner outcomes, which may in turn drive faculty selection and development programmes.

D 1123**INTERACTIVE AND PARTICIPATORY SESSIONS TO FACILITATE BIostatISTICS LEARNING BY MEDICAL UNDERGRADUATES*****¹Thulasingham M, ²Dongre A, ²Kalaiselvan G***

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Background and Aims

In India, medical undergraduates perceive that statistics is difficult to understand. Often, it is taught just before final assessment examination using didactic lectures, with little use of medical examples and less focus on application. Hence, we prepared interactive, participatory sessions for teaching biostatistics to medical undergraduates.

Methods

The sessions were delivered by a facilitator. The sessions had clear specific learning objectives. A Needs assessment was done by interviewing students who had undergone traditional biostatistics teaching methodology. Specific learning objectives for the sessions were finalized using the Delphi Technique and review of University syllabus. Two trained Community Medicine faculties designed the lesson plans 'backwards' from desired outcome to content, teaching/learning strategies, assessment and evaluation process (Outcomes-based lesson planning). Forty, third-semester (para-clinical phase of second year) medical undergraduates undertook these seven teaching sessions. The session followed adult learning principles and included group discussions, games and reflections. We evaluated the impact of the sessions using in-depth interviews, retrospective post-then-pre self-assessment and a pre-announced written assessment.

Results

With traditional statistics teaching methodology, students perceived it as a standalone subject and were disinterested in statistics. Students who underwent the sessions commented that the sessions were enjoyable, interesting, participatory and more than 90% of the students felt they were engaged throughout the session. They also narrated various instances where they could apply the biostatistics learning. In the post-then-pre assessment median post session scores for all the objectives were significantly higher ($p < 0.05$).

Conclusion

Use of interactive, participatory sessions for teaching biostatistics to medical undergraduates resulted in a positive reaction and better learning. They also applied these concepts while reading textbooks, listening to lectures and during clinical postings

(The article was published in Journal of Advances in Medical Education and Professionalism)

D 1124**IMPACT OF NIGHT FLOATER SYSTEM ON PATIENTS CARE: PAEDIATRIC HEALTH CARE PROVIDERS EXPERIENCE IN ACGMEI PROGRAM IN QATAR*****Al Muslemani E, Elsiddig S, Maarafiyai M, Batool M, Alhammadi A***

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Background and Aims

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 paediatrics Health Care Providers perceptions regarding the NFS on patient safety and quality of care.

Methods

We administered questionnaires to paediatrics 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 analysed.

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%).

Conclusion

Our study shows that paediatric residents and nurses are favourable towards the Night Floater System than attendings. 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.

D 1125

SETTING UP AN AREA WIDE SIMULATION CENTRE: GETTING THE BUILDING IS JUST THE BEGINNING!

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Background and Aims

Simulation is taking an increasingly high profile in clinical education - of all types and at all levels. Simulation is a 'process issue' and evaluating its impact on the acquisition of skills is complex. The skills can be learnt in other forums (e.g. on real patients) but simulation allows an increase in clinical and procedural skills in a safe and controlled environment with no risk to patients.

Methods

The paper will outline the starting up of simulation centre from a new building to the current situation: and the lessons we have learnt along the way. The funding body pre-identified some outcomes (most of which related to the number of services provided within the centre and to whom they were provided) but otherwise the centre was set up in response to the identified needs of learners, and requests from educators, who were using/or wished to use the Centre.

Funding was made available to construct and equip a purpose-built simulation centre. As part of the original Grant Funding, a Part-time Project Officer was funded for 2 years to develop and run programs. These were evaluated at the time of delivery. Since then, clinical teachers who use the Centre teach as part of their area wide role (which is independent of the Centre).

Results

Over the 4 years since ISHEC opened, it has developed so that now there are an average of 154 sessions/month provided to Hospital Clinical staff, Medical Students as well as external users. Simulation is only one of the activities carried on in the centre.

In terms of returns on investment, it is almost impossible to quantify. Many mandated clinical skill teaching and update sessions are held in the centre so having the additional teaching space is helpful.

Conclusion

Setting up a new Simulation Centre is possible, but challenging. One can learn from the experience of others.

D 1126**LEARNING DIFFERENTLY DURING SIMULATION - THE DIFFERENT TAKEAWAYS BY DOCTORS AND NURSES FROM IN-SITU SIMULATION SESSIONS IN AN EMERGENCY DEPARTMENT*****Chan JJ, Quah JLJ, Fua T, Weng PW, Tan PH, Wong E****Department of Emergency Medicine, Singapore General Hospital, SingHealth, Singapore***Background and Aims**

A needs analysis showed that the junior members of our resuscitation team in our Emergency Department (ED) were performing at the advanced beginner stage based on the Dreyfus model. In order to improve their team cohesiveness and clinical skills, 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 our programme.

Methods

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.

Results

A total of 25 nurses and 10 doctors were surveyed of which 92% attended 2 or more sessions.

More than 80% of them felt the sessions were increased their confidence and gained new expertise after these sessions. A similar proportion applied the information learnt on real patients. Teamwork was the area in which there was the largest impact on both groups, with 52% of the nurses and 70% of the doctors reporting that they applied what they learnt sessions in actual resuscitations. In terms of learning and behaviour, 76% of nurses and 90% of doctors agreed their experiences with simulation helped make them more organised in their assigned roles.

64% of the nurses were more confident of performing tasks versus 50% of doctors. 43.5% of nurses indicated that they had applied readiness in communication after the simulation sessions, whereas 60% of doctors did. While 40% of the doctors learnt to identify sick patients through simulation, only 24% of the nurses did. And only 36% of the nurses had learnt to speak up when there were safety issues, compared with half the doctors.

Both groups indicated "more organised" and "more confident" in their free text responses. However, the nurses wanted pharmacology and pathophysiology incorporated into the debrief, while the doctors preferred more focus on communication and resuscitation-specific procedures such as chest tubes.

Conclusion

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.

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.

Saturday 13 January 2018

Virgo 2, Level 1, Resorts World Convention Centre

2.15pm – 3.45pm

E-POSTER PRESENTATION SESSION 22

- D1127** **The Influence of Learning Styles of Orthopaedic Residents and Their Orthopaedic In-Training Examination Performance**
Xi Chen, Singapore
- D1128** **Augmented Reality for Sirenomelia**
Dinesh Kumar Srinivasan, Singapore
- D1129** **Inter-Professional Education: The Pharmacist Shadowing for Interns**
Wan-Chen Lu, Taiwan
- D1130** **Hacking Hackathons: Preparing the Next Generation for the Multidisciplinary World of Healthcare Technology**
Mataroria Lyndon, New Zealand
- D1131** **Dental Student Feedback on a Blended Learning Approach in the Teaching of Surgical Removal of Impacted Lower Wisdom Teeth**
Marcelle Cupido, South Africa
- D1132** **Simulation Training for Medical Emergencies in Dentistry**
Intekhab Islam, Singapore

E-POSTER PRESENTATION SESSION 23

- D1133** **How Does Community Medical Training Influence Resident Doctors' Professionalism?**
Junichi Tanaka, Japan
- D1135** **Radiopath Museum - A First-Ever Visual Resource Integrating Gross Pathology with Diagnostic Imaging**
Gwyneth Shook Ting Soon, Singapore
- D1136** **Use of Computerized Manikin in Summative Assessments Provides Better Quality of Evaluation in Summative Test for Basic Life Support Skills**
Tsu-Yi Hsieh, Taiwan
- D1137** **Mentoring Environment - A Proposed Model from a Thematic Review**
Jia Min Hee, Singapore

D 1127**THE INFLUENCE OF LEARNING STYLES OF ORTHOPAEDIC RESIDENTS AND THEIR ORTHOPAEDIC IN-TRAINING EXAMINATION PERFORMANCE****Chen X, Pearce C***Department of Orthopaedic Surgery, National University Hospital, National University Health System (NUHS), Singapore***Background and Aims**

The validated VARK 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. The application of learning styles in the realm of orthopaedic training program is yet to be inspected. This study aim to explore how the learning style preference of our orthopaedic trainees reflects on their performances.

Methods

The sample population of this study involved all National University Hospital Orthopaedic residents from year two to year six, who had participated in Orthopaedics In-Training Exam(OITE). All year one trainees were excluded due to their absence in the exam. Following Institutional Review Board approval, an Email was sent with the invitation and introduction of this study. When information consent acquired, another email with a survey based on the Fleming VARK learning styles inventory was administered via email to those residents who volunteered to participate. Other data we collected including: Year in residency, age, gender, 2016 OITE score and the 2016 year-end assessment score. The residents' names were required as identifier on the survey for pairing of their performance results. One researcher made the data collection form and calculated all participants' VARK score after the questionnaires are done. The second researcher paired the VARK scores with the performance data, combined the documents and replaced the names of the trainees with serial numbers, and handed it over to the third team member, who was in charge of analysing the data. In such manner, the confidentiality was maximally preserved and the researcher's bias had been largely reduced.

Pearson's correlation, student's t-test and analysis of variance were applied to compare the data, with $P < 0.05$ considered significant.

Results

There were 22(100%) residents from year two to year six who had voluntarily replied our survey, 2 females and 20 males. The response to our survey was full.

All our residents had multimodal(MM) preference; A large proportion owed the kinaesthetic modality. In fact, only 2 residents (9.1%) have a learning style preference that doesn't include a kinaesthetic component. For those who are dominantly kinaesthetic, they had superior feedbacks in terms of year-end performance assessment ($p=0.033$). This may be reflective of the "hands-on" nature of the field of surgery. In addition, it indicates potential benefit to modifying teaching styles-- Lecture-format, didactic teaching may not be as effective or efficient in transmitting knowledge to residents who internalize information best when they are touching or manipulating materials/objects.

The role of aural learning is relevant to better results in problem-based learning($r=0.53$). In general, the senior residents yielded better scores in OITE ($p=0.003$); however, there's no statistical significant between senior and junior residents when it comes to yearly performance assessment- Learners with strong dominance in reading didn't score better in both assessments.

Conclusion

The learning style preference has influence on orthopaedic residents' OITE and yearly performance. Leveraging learning styles could be a possible strategy to improve educational efficiency.

D 1128**AUGMENTED REALITY FOR SIRENOMELIA****¹Rafi S, ¹Dheen ST, ²Yen C, ¹Bay BH, ¹Srinivasan DK***¹Department of Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, ²Keio-NUS CUTE Centre/ Division of Industrial Design, School of Design and Environment/ Smart System Institute, National University of Singapore, Singapore***Background and Aims**

Augmented reality (AR) is an advanced technology that incorporates the virtual and real world for perceptive spatial learning. The manipulation of 3-dimensional (3D) objects via 3D platform makes learning intuitive and interactive. AR allows the user to visualise and manipulate a virtual object through physical objects in real time. Currently, AR has been used in various industries such as entertainment, architecture, education and medicine. With regard to medical applications, it is more commonly used in surgical practice for teaching laparoscopy, endoscopic ultrasonography and chest-tube insertion. This study will introduce AR technology on a potted specimen of a baby with sirenornelia ("mermaid syndrome").

Methods

The magnetic resonance and 3D-Computed Tomography images would be imported into the AR platform and be used to display through mobile devices. This AR application is designed for android mobile phones. To use, the student has to point the android phone's camera at a specimen pot to retrieve the learning content.

Results

The application would be displayed and superimposed onto the specimen pot. User can simply tap on the onscreen icons to interact with the learning content.

Conclusion

Thus, perceptive learning with AR technology provides a fruitful learning environment and creates interactive learning activities which will help medical students to gain a better and more thorough understanding of human anatomy.

Acknowledgements

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D 1129

INTER-PROFESSIONAL EDUCATION: THE PHARMACIST SHADOWING FOR INTERNS

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Background and Aims

To know the function and role of different health professionals in patient care team is one of the objectives of inter-professional education (IPE). The pharmacists shadowing was 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.

Methods

For all 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 utilise. 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.

D 1130

HACKING HACKATHONS: PREPARING THE NEXT GENERATION FOR THE MULTIDISCIPLINARY WORLD OF HEALTHCARE TECHNOLOGY

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Background and Aims

Machine learning in healthcare, and innovative healthcare technology in general, require complex interactions within multidisciplinary teams. Healthcare hackathons are being increasingly used as a model for multi-disciplinary collaboration and learning. The aim of this study is to explore high school student learning experiences during a healthcare hackathon. By optimising their learning experiences, we hope to prepare a future workforce that can bridge technical and health fields and work seamlessly across disciplines.

Methods

A qualitative exploratory study utilising focus group interviews was conducted. All high school students in the Hackathon (n=18) were invited to participate in this study. Participating students (n=8) were allocated into three focus groups. Semi structured interviews were completed and transcripts evaluated using inductive thematic analysis.

Results

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 themes highlight strengths and potential barriers when bringing this multidisciplinary approach to high school students and the healthcare community.

Conclusion

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.

D 1131

DENTAL STUDENT FEEDBACK ON A BLENDED LEARNING APPROACH IN THE TEACHING OF SURGICAL REMOVAL OF IMPACTED LOWER WISDOM TEETH

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Background and Aims

Undergraduate dental students are taught a wide range of clinical procedures ranging from minimally to grossly invasive. The most invasive of procedures relate to surgery and include the surgical removal of teeth. Oral surgery has been reported as one of the areas associated with considerable stress and clinical insecurity in students. A blended/hybrid learning approach was adopted to teach surgical removal of impacted mandibular third molars. An evaluation of a component of the Oral Surgery module was done at the University of the Western Cape, South Africa in order to ascertain student views on, among other, the various teaching modalities used.

Methods

Ethics approval was obtained reg. HS/16/8/14. A mixed method study design was used. The study population consisted of consecutive final year dentistry students participating in an oral surgery rotation (2016). Participation in the study was voluntary. Teaching the surgical removal of impacted wisdom teeth was one of the aspects focused on during this rotation. Students had been introduced to this concept in the third year of study (face-to face lectures) and again in the fourth year of study (observation and clinical assistance). Components of the teaching methods used in the rotation included:

1. Group tutorial (pre-surgery), explaining and demonstrating flap designs;
2. Viewing of a Youtube video clip (muted) on the surgical removal of impacted wisdom tooth on a patient;
3. Demonstration on a bench model (typodont) was conducted by a clinical chairside teacher explaining surgical instrumentation and surgical techniques;
4. Procedure on the Nissin® typodont took place in pairs with each student having an opportunity to practice;
5. Students had the opportunity to perform a live surgical procedure, under supervision, in the outpatient clinic.

Data were collected by means of a self-administered questionnaire and analysed using SPSS® Version 24. Qualitative responses were analysed thematically.

Results

The sample comprised 24 students. One hundred percent of questionnaires were returned. The bench model (typodont) was found to be the most useful tool in teaching this surgical procedure (95.7%) compared to other teaching modalities. Seventy-five percent felt that practicing on typodonts improved surgical skill. Modalities which increased confidence were: practice on typodonts (91.7%) and watching video clips (76.5%). Students felt that the typodont was of value as it allowed them to: 'learnt to make incisions properly', 'helped me to hold the instruments better', 'a lot more confidence when cutting and a better visualisation due to no blood that's present', 'confidence is gained during practice' and 'gave us a guide as to what to do'.

Conclusion

The data suggests that students prefer a blended learning approach in teaching the surgical skill required for the removal of impacted wisdom teeth as compared to the traditional approach. Reasons included- increased confidence and surgical skill with the use of typodonts. Challenges to incorporate the use of typodonts in the Oral Surgery rotation, include the cost of the typodont as well as the need for additional clinical teaching staff (typodonts are expensive and additional staff were recruited for this intervention).

D 1132

SIMULATION TRAINING FOR MEDICAL EMERGENCIES IN DENTISTRY*¹Islam I, ²Wong RC, ³Siau C, ²Tong HJ, ²Loh JS, ²Lim AA**¹Dean's Office, Faculty of Dentistry, National University of Singapore, Singapore, ²Faculty of Dentistry, National University of Singapore, Singapore, ³Department of Anaesthesia, Yong Loo Lin School of Medicine, National University of Singapore, Singapore***Background and Aims**

Dental Students are expected to be able to anticipate, recognise and handle medical emergencies occurring in the dental office. The Undergraduate Curriculum mostly lacks opportunities for dental students to perform actions when faced with such emergencies. As these emergencies are relatively rare, a simulation programme is ideal to train students to diagnose as well as react to such emergency situations.

The objective of this study was to assess if Simulation Training in a controlled environment is effective in imparting the knowledge in a practical aspect on management of medical emergencies in general dental practice.

Methods

The study was performed in the following manner:

1. Pre course MCQ of 20 questions in the management of common medical emergencies.
2. Small group teaching incorporating simulated scenarios using standardised patients and mannequins on
 - i. Acute Myocardial Infarction
 - ii. Diabetic Hypoglycaemic crisis
 - iii. Anaphylaxis reaction
 - iv. Airway Obstruction
 - v. Layout of Emergency trolley
 - vi. Intravenous and intramuscular access and administration of drugs
3. Post Course MCQ and Survey

Results

A majority of students 95% agreed that their knowledge of managing medical emergencies was inadequate and 78% felt confident in managing real life medical emergencies in the dental office following the simulation training. There was a marked statistically significant improvement in the pre and post MCQ scores ($p < 0.001$). The feedback about the course was unanimously positive.

Conclusion

Simulation type or hands-on training in a controlled environment improves understanding and management of medical emergencies in the dental office. It increases confidence in dealing with such situations in real life scenarios.

D 1133**HOW DOES COMMUNITY MEDICAL TRAINING INFLUENCE RESIDENT DOCTORS' PROFESSIONALISM?*****Tanaka J****Office of Medical Education, Graduate School of Medicine, Tohoku University, Japan***Background and Aims**

A one-month Community Medical Training (CMT) is mandatory in Japanese medical residency training programmes. Residents train at both the core teaching hospitals and local medical institutions, where they can recognise the importance of being doctors. However, the influence of CMT performed at local medical institutions, on their attitudes is unclear.

Methods

We conducted a survey of 484 residents who completed CMT between 2015 and 2016, through questionnaires. Responses were examined to evaluate the necessity to be medical practitioners, their motivations, and medical professionalisms. Answers regarding CMT were compared with those regarding Core Teaching Hospitals Training (CTHT) using the Wilcoxon signed-rank test.

Results

We received responses from 179 residents. The responses failed to demonstrate that CMT was more useful in fostering professionalism compared to CTHT. However, residents from community medicine related quotas such as Chiiki-Waku, acknowledged the benefits of CMT concerning communication with other physicians and lifelong education.

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.

CMT did not benefit medical trainees in terms of fostering professionalism when compared with CTHT. However, results suggest that improving trainee motivation before CMT can foster their professionalism at local medical institutions.

We believe increasing motivation before CMT fosters professionalism.

D 1135**RADIOPATH MUSEUM - A FIRST-EVER VISUAL RESOURCE INTEGRATING GROSS PATHOLOGY WITH DIAGNOSTIC IMAGING*****¹Soon GST, ²Teo LLS, ³Tran AP, ²Ong CC, ¹Nga ME****Departments of ¹Pathology and ²Diagnostic Imaging, National University Hospital, National University Health System (NUHS), Singapore, ³Department of Diagnostic Radiology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore***Background and Aims**

Diagnostic imaging reflects gross pathology in the living patient. By subjecting gross pathology specimens to magnetic resonance (MR) imaging, we aim to create the first-ever unique, integrated radiology and pathology museum, demonstrating fully annotated gross pathology specimens in tandem with reconstructed MR images of the same specimens.

Methods

Illustrative examples of pathology 'pots' (formalin-fixed gross pathology specimens encased in Perspex containers) were selected, based on the undergraduate pathology curriculum of the Yong Loo Lin School of Medicine (NUS Medicine). They were scanned using a 3T MR scanner, thus creating a library of MR images. Images of suitable resolution were selected and each Digital Imaging and Communications in Medicine (DICOM) dataset was post-processed and exported to JPEG format using Osirix® and Syngo.Via® programmes.

MR images were then further processed using Ortery's TruView 3D® image processing software to reconstruct each image series into interactive MR objects. These objects can be rotated, magnified and annotated. Annotations were added, introducing basic imaging terminology.

Previously, the same pathology pots had undergone sequential multiangle photography, image editing and processing using Ortery's TruView 3D® image processing software to transform these JPEG series into interactive objects called virtual pathology specimens (ViPs). Annotations were added.

An online RadioPath Museum was created using a WordPress-based platform. An individual indexed page was created for each specimen within the online Radiopath Museum, featuring interactive MR Images, 3D reconstructed Truview MR objects and ViPs.

Results

The Radiopath Museum (<http://pathweb.nus.edu.sg/radiopath-museum/>) was created, housing 140 radiopathology paired virtual specimens. A sample chapter, Central Nervous System, can be accessed here: <http://pathweb.nus.edu.sg/radiopath-museum/systemic-pathology-central-nervous-system>.

Each page contains a specific specimen, incorporating three types of interactive images created from a single specimen: i. Sequential MR images which viewers can scan through by clicking and dragging with the mouse; ii. Fully annotated virtual pathology specimen; and iii. The interactive MR object

Viewers are able to rotate and magnify, as well as zoom into specific areas of the latter two interactive image objects.

Conclusion

The study of pathology is based very much on observing gross morphologic abnormalities that occur in diseased organs. In the living patient, this is closely linked to the practice of diagnostic radiology, in which in vivo images provide diagnostic clues to disease process and stage.

By creating a virtual resource that pairs gross pathology with diagnostic imaging in this unique way, we hope to be able to enhance students' understanding of the morphology of disease, which is the basis for understanding the clinical manifestations of disease. The use of MR images simulates diagnostic imaging in the live patient and, paired with gross pathology, will help enhance students' appreciation of clinicopathologic correlation.

D 1136

USE OF COMPUTERISED MANIKIN IN SUMMATIVE ASSESSMENTS PROVIDES BETTER QUALITY OF EVALUATION IN SUMMATIVE TEST FOR BASIC LIFE SUPPORT SKILLS

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Background and Aims

The quality of Basic Life Support (BLS) is crucial to the chances of patient survival. Traditional assessment for performance of BLS by visual and auditory observation of raters might not give enough details for assessment, such as true depth of chest compression and complete release of hands. Raters also struggle to keep focus on rate, depth & position of chest compression at the same time.

Methods

We replaced traditional manikin for BLS test with the Resusci Anne QCPR® (Laderal, Norway), a computerised manikin, during summative tests in the Advanced Cardiovascular Life Support (ACLS) training program. A total of 159 staff members in one medical centre of central Taiwan, including physicians, dentists, nurses, physical therapists and respiratory technicians, received summative tests using traditional checklist scoring by visual and auditory contact with 4 raters. All raters were qualified as ACLS instructors by the Society of Emergency and Critical Care Medicine (SECCM), Taiwan. For individual all candidates, sum scores and scores for chest compression and ventilation by a traditional checklist & qualified tutors by SECCM Taiwan, were collected. Detailed skill parameters of BLS test for each candidate were downloaded after test, and were compared with scores by the traditional checklist. Mann-Whitney U test by SPSS V22.0 was used for statistical analysis.

Results

There are many differences when comparing parameters of BLS skills and sensors of QCPR manikin. In chest compression, compression errors could not be distinguished by checklist score in 3 dimensions such as depth, position and complete release after chest compression ($p=0.913$, $p=0.301$, $p=0.560$ for each). Only the rate of chest compression is in concordance with scores by raters ($p<0.003$), be it fast or slow rate performed by candidates ($p=0.001$, $p<0.001$). In respect of ventilation, errors of ventilation could not be differentiated in 3 dimensions as ratio (30:2), complete expiration and over-ventilation ($p=0.942$, $p=0.207$, $p=0.295$). Only results of 2 dimensions, rate of ventilation and under-ventilation, showed concordance with scores by raters ($p<0.001$, $p=0.025$). After reviewing video of BLS test and data from QCPR manikin by the original rater, 43 (27.2%), and 65 (41.1%) of 158 already passed candidates received formal suggestions by raters to review their chest compression and ventilation skills again.

Conclusion

Computerised manikin provides continuous monitoring of all important parameters in whole BLS course, when tutors might lose attention or be distracted. It is more valuable for the parameters difficult to be observed by raters, including depth, position and complete release of chest compression and ratio, complete expiration and over-ventilation to be focused for assessment in BLS. Those data help raters to assess BLS performance more accurately than before, especially for summative assessment. The introduction of computerised BLS manikin will be beneficial to overall improvement of quality of BLS.

D 1137**MENTORING ENVIRONMENT - A PROPOSED MODEL FROM A THEMATIC REVIEW****¹Hee JM, ²Toh YP, ³Krishna LKR**

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Background and Aims

Growing interest in nurturing effective mentoring relationships to advance learning and provide effective holistic support amongst learners has highlighted a significant gap in our understanding of this process. Little is known about the mentoring environment (ME) in which effective mentoring relationships flourish.

A pioneer in this field, this paper seeks to facilitate the improvement and development of future mentoring programs in medical education through better understanding of the ME.

Methods

PubMed, ScienceDirect, ERIC and the Cochrane Library Databases were searched for publications reporting mentorship in medicine, based on keywords such as "mentor", "mentee", "mentorship" and "medicine".

Articles published in English between 1st January 2000 to 31st December 2015 involving mentoring between a senior clinician and junior doctors and medical students were independently analysed by the three authors.

Results

70 full-text articles (41 reports + 29 perspective papers) were thematically reviewed to reveal 3 key themes.

- 1) the structural Framework on which the relationship is built, which includes the initiation process as well as design of the mentoring program - serves as the foundation upon which the mentoring relationship grows.
- 2) Relationship Elements including factors influencing the Mentor, the Mentee, as well as the Relationship itself.
- 3) dynamic External Elements addressing the physical and functional factors influencing the mentoring relationship.

These interplay to shape the optimal Mentoring Environment - qualities identified involve both Psychological (e.g. emotional safety, connectedness) and Functional (a) develops the mentee e.g. goal-oriented, stimulating and b) stabilises the relationship e.g. open communication, commitment) aspects.

Conclusion

By envisaging ME as a plant (i.e. the mentoring relationship and its elements) with the structural framework and the external elements acting as the soil and sun influencing and interacting with the mentoring relationship- we create a simple tool to be used when considering the design of a mentoring program and in nurturing individual mentoring processes. Using this model, educators and institutions can develop or improve on methods to advance mentoring in medical education.

E-POSTER PRESENTATION SESSION 24

- D1140** **A Study on Finding Solutions to Improve the Quality of Teaching Some Fundamental Medical Subjects in Vietnam Military Medical University**
Minh Hai Nguyen, Vietnam
- D1141** **Stakeholders' Perspective on Curriculum of the Medical Faculty: A Pilot Project to Create the Prototype Instruments of Evaluation**
Mia Kusmiati Koswara, Indonesia
- D1142** **Night Float System and Medical Errors; Perceptions of Paediatric Staff in ACGME-International Program In Qatar**
Eman Al Muslemani, Qatar
- D1143** **Enhancing Surgical Confidence By Delivery of Point-Of-Care Anatomy for Everyday Practice**
Wojciech Pawlina, United States of America
- D1144** **Focused Subcostal Echocardiography by Intensive Care Unit Residents: Learning Trajectory of Dyad Versus Individual Training**
Joo Wei Chua, Singapore

D 1140

A STUDY ON FINDING SOLUTIONS TO IMPROVE THE QUALITY OF TEACHING SOME FUNDAMENTAL MEDICAL SUBJECTS IN VIETNAM MILITARY MEDICAL UNIVERSITY

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Background and Aims

To comprehend the lecturers' teaching activities by collecting the learners' questionnaires, and to propose some solutions to improve the teaching quality of some fundamental medical subjects in Vietnam Military Medical University.

Methods

875 second-year students who are studying at Department of Embryology, Department of Physiology, and Anatomy from February 2014 to the end of October 2014. Including: 147 students from Embryology 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).

Results

The way to impart knowledge and attract learners' attention is not very good (11.43%); The update of knowledge and connecting reality with lectures is still limited (12%); The speed of teaching is fast (13.49%); A limitation on giving chances to learners to participate in developing lessons (16.22%); The diversification of lecturers' testing and evaluating forms is weak (46.74%); Lecturers do not encourage learners much to study and research (36.29%).

Conclusion

Mastering the aims, the content of teaching schedule, psychological features, and awareness law of learners. Mastering knowledge and helping learners have ability of self-orientation and self-study. Focusing on improving professional qualifications. Theory must be combined with practice. Teaching knowledge must go with teaching manner, so learners should have good attitude of doing their job.

D 1141**STAKEHOLDERS' PERSPECTIVE ON CURRICULUM OF THE MEDICAL FACULTY: A PILOT PROJECT TO CREATE THE PROTOTYPE INSTRUMENTS OF EVALUATION*****Kusmiati Koswara M****Biochemistry, Medical Education, Faculty of Medicine, Bandung Islamic University, Indonesia***Background and Aims**

Evaluation of the stakeholders is the implementation of social accountability of a medical program, particularly the medical curriculum and ideally it must be in line with the result of accreditation. Recognition of performance and quality not only can be seen from the aspect of accreditation but also from stakeholders' evaluation.

This study intends to identify stakeholders' evaluation of the curriculum related to their needs and perspectives and to create the prototype instruments of curriculum evaluation.

Methods

Five groups of stakeholders had been selected to evaluate the medical curriculum that has been carried out, namely: medical students, lecturers in the faculty, graduates of the medical faculty, patients and employees in the teaching hospital; particularly supervisory doctors, and paramedic staff. The design of this study is a mixed-method case study between qualitative and quantitative analytic surveys with an exploratory sequential design. Participants for the qualitative study had been taken 4 to 5 persons for each of stakeholders group with the in-depth interview and focus group discussion. Participant for the quantitative study will be selected using simple random sampling for five stakeholders group and quantitative analysis then will be performed by paired t test for differences between each two groups of stakeholders (internal and external) with the p value <0.05. Responses to the items of the initial questionnaire will be subjected to an exploratory factor analysis using squared multiple correlations as prior communality estimates

Results

Positive perspective from graduates and patient stakeholders on the outcome of medical curriculum show that those have meets the needs and their standard. While from students' and lecturers' perspective, there has some point to enhanced, such as learning attribute in terms of autonomy and responsibility, remediation system and acquired expertise. A having attitude towards initiative and good working behaviour of postgraduates student should emerge from the clinical phase in the workplace from employees' perspective.

Conclusion

The qualitative result will become the basis and a reference to making the prototype instruments. From this study will be produced five the prototype instruments for curriculum evaluation in terms of achieving the outcome to provide input on evaluating and developing the medical curriculum in the future.

D 1142**NIGHT FLOAT SYSTEM AND MEDICAL ERRORS: PERCEPTIONS AMONG PAEDIATRIC HEALTH CARE PROVIDERS IN ACGME-INTERNATIONAL PROGRAM IN QATAR*****Al Muslemani E, Elsiddig S, Maarafiyai M, Batool M, Alhammadi A****Department of Paediatrics, Hamad General Hospital, Hamad Medical Corporation, Qatar***Background and Aims**

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

Results

110 questionnaires (47 residents, 28 attending's and 35 nurses) were analysed; 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) compare 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 paediatrics 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.

D 1143

ENHANCING SURGICAL CONFIDENCE BY DELIVERY OF POINT-OF-CARE ANATOMY FOR EVERYDAY PRACTICE

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Background and Aims

Fundamental principles of anatomy are usually well established during early medical training. 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. However, 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 have to re-connect with prior anatomical knowledge for skills improvement or when faced with challenging procedures. While learning resources are widely accessible through an abundance of technological platforms, in a busy practice, finding dedicated time to learn anatomy through a self-guided approach is often challenging. The aim of this presentation is to demonstrate development and point-of-care delivery of anatomical information to complement procedural skill and improve surgical confidence.

Methods

A 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). Objectives were driven by need to improve confidence in performance of Mohs micrographic surgery to treat cutaneous lesions. 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. Detailed literature review was conducted to determine existing knowledge and to identify areas for improved clarity of anatomical description and understanding. Video technology was used to demonstrate real time dissection with a layered approach to the targeted anatomy. Simulated approach was used for dissection on a fresh frozen cadaveric model focusing on cosmetic subunits of the face, anterior and posterior triangles of the neck, superficial anatomy of the upper limb with emphasis on the nail unit. For challenging anatomy encountered during Mohs resection and repair, patient defects were recreated on the cadaver. Additionally, 3D printed models of cadaveric dissections were created to supplement teaching material and provide a more tangible teaching and learning model. Feedback was obtained via conference review and participant questionnaires measuring perception of confidence in anatomy knowledge.

Results

ASDS and ACMS created platform for delivery by allocating specific CME credit time within annual meeting program. Within a 90 minute session anatomist/clinician team was able to facilitate discussion of anatomy relating to patient care. Targeted dissection video effectively demonstrated anatomy within surgical field. Question and answer time was allocated with additional run in time over extended break including time with 3D printed models. Course material was extended to membership via webinars. 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.

Conclusion

In the absence of dedicated symposia, anatomy knowledge acquisition is largely a responsibility of clinician's practice. For physicians outside mainstream academic setting, employing technology (video), products of technology (3D prints) and identifying opportunities within professional societies facilitates continuing medical education initiatives in basic sciences. In era of authentic learning, anatomists share a responsibility for creating point-of-care content for improving patient care.

D 1144**FOCUSED SUBCOSTAL ECHOCARDIOGRAPHY BY INTENSIVE CARE UNIT RESIDENTS: LEARNING TRAJECTORY OF DYAD VERSUS INDIVIDUAL TRAINING****¹Chua JW, ²See KC***¹Department of Medicine, National University Hospital, National University Health System (NUHS), Singapore, ²Division of Respiratory & Critical Care Medicine, University Medicine Cluster, National University Health System (NUHS), Singapore***Background and Aims**

Dyad training in the acquisition of psychomotor skills has gained recent eminence in medical education research with its efficacious appeal 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 unit residents.

Methods

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. Internal Medicine junior residents received self-reading materials and underwent 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), the mean composite image quality and interpretation score were analysed according to the number of echoes performed (1-5 echoes, 6-10 echoes, 11-15 echoes and beyond 15 echoes).

Results

Apart from a statistically significant difference in the mean composite score when 6-10 echoes were being performed after dyad training, results were similar between the individual and dyad training groups. For the first five echoes done under indirect supervision (composite score range 1-8), the main outcome measure, the mean composite image quality and interpretation score did not differ between the individual and dyad training groups (main outcome measure for individual training versus dyad training: 6.0 ± 0.4 versus 5.9 ± 0.4 , 95% CI of difference -0.2 to 0.4). Similar results were also observed when 11 echoes and beyond were performed. Non-inferiority was established, assuming a 1-point non-inferiority threshold for the mean composite score. Prior echocardiography experience when analysed between the dyad and individual training groups was found to be not statistically significant.

Conclusion

Learning trajectory was noted to be similar for the learning of focused subcostal echocardiography when conducted via dyad versus individual training even beyond 16+ echoes. A statistically significant difference in mean composite score obtained by the dyad versus individual training groups when 6-10 echoes were performed could be the result of better image interpretation through learning by observing each other during dyad training. For the purpose of learning focused subcostal echocardiography, dyad training would therefore, be more efficient than individual training among intensive care unit residents as two residents, rather than one, could be simultaneously trained during supervised practice. Possible mechanisms that could underpin the effectivity of dyad training in this study include: allowing metacognitive interaction between the residents, decrease in cognitive load on each resident and the ability of the resident to observe the tutoring process of the dyad partner which further enhances the learning process.

