5JJ Posters: Student as Teacher

Location:

#5JJ01 (135634)
Comparing the effectiveness of teaching suturing by peers, core surgical trainees and consultants

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Background: The value of peer-assisted surgical teaching of basic surgical skills has not been evaluated compared to near peer-teaching and consultant-led teaching. This study thus aimed to assess the effect of suturing sessions taught by peers, post-graduate surgical trainees (Core Surgical Trainees (CSTs)) and Consultant surgeons.

Summary of Work: The Barts and The London Surgical Society hosted a basic suturing skills course. 60 participants were recruited on the basis that they had never done or seen suturing being performed. Participants were randomly allocated to three groups: peer-taught, CST-taught and Consultant-taught. Participants were taught basic suturing techniques for two hours. Subsequently, students were assessed via the Objective Structured Assessment of Technical Skill (OSAT) marking scheme provided by the Royal College of Surgeons in their surgical skills courses by a Consultant surgeon. Group differences were assessed using a one-way Anova with a post-hoc Tukey.

Summary of Results: 17 marks are available on OSAT. The average scores for those taught by peers, CSTs and consultants were 14.47, 14.06 and 14.67 respectively. These differences were not statistically significant (p=0.5321).

Discussion: Peer or near-peer teaching of technical surgical skills is comparable to that of consultants in medical students with no previous surgical experience. This can have significant impact on the delivery of surgical education in medical school curriculum. More research is required to see if this applies to advanced skills.

Conclusion: The effectiveness of being taught basic surgical skills by peers, junior and senior surgeons may be similar.

Take Home Messages: Peer-teaching may provide an equally useful means of teaching students basic surgical skills compared to consultant-led teaching.

#5JJ02 (134318)
Implementing Crisis Resource Management (CRM) principles into undergraduate education using a peer-teaching approach

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Background: Efficient teamwork is closely linked to various outcomes in healthcare, e.g. patient safety. Schemes such as CRM principles provide guidance on how to measure good teamwork, but are normally not part of the undergraduate curriculum. Therefore - as a pilot study - we wanted to implement them with peer tutors.

Summary of Work: We developed a guideline based on CRM principles for an emergency medicine simulation for students in their final year. Peer tutors were trained to observe and give feedback by introducing CRM principles. Students were asked afterwards which principles they had known before, which were discussed and whether this was helpful.

Summary of Results: Peer tutors described the tool as practicable and the students rated their tutors input as helpful (mean = 1.7 - 2.1, scale 0/+3). Often discussed principles were "communicate effectively" and "distribute workload". Only in few cases, students stated that principles were discussed in group, which they did not know before.

Discussion: The validity of our results is limited by the small amount of participants (N=34) and the fact that they rely on subjective statements of students and tutors. No objective measures were taken, whether teamwork improved over the course of the simulation.

Conclusion: By using the guideline, tutors were able to feedback team performance and remind medical students of their prior knowledge of CRM. However, in only few cases they could teach new principles to the participants. To achieve this, principles might need to be made more present and tutors trained more intensively.

Take Home Messages: Our intervention proved to be a possibility to implement CRM principles with peer tutors and was highly appreciated by students. When repeated several times, the guidelines for good teamwork could become increasingly present in the students' thought processes and lead to future doctors who are more sensitive towards efficient teamwork.
Pedagogical path for students at the Faculty of Medicine, University of Turku

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Background: In the spring of 2014 a 2-year 20 ECTS pedagogical path for clinical students was launched at the faculty of medicine at the University of Turku, Finland. Three pedagogically oriented students were elected to the path in 2014 and 2015 respectively for a duration of two years. The students took a total of 10 ECTS credits of educational studies and another 10 ECTS of practical peer-teaching.

Summary of Work: Elected students planned and taught both curricular and voluntary study modules for students in earlier phases of their studies. These units were presented to and approved by selected members of the pedagogical staff of the faculty prior to the teaching sessions and consisted mainly of teaching clinical skills in a practically-oriented way. The peer-teachers on the pedagogical path were responsible for teaching clinical skills for first-year students on the curricular course "cardiorespiratory and renal physiology". These skills included ECG registration, blood pressure measurement and cardiac auscultation.

Summary of Results: An open feedback regarding peer-teaching was collected from the students after the sessions. Overall, the feedback was positive. Most students felt that peer-teaching was well suited for the teaching sessions. The motivation of the teachers, the ease to relate to the teachers and the overall low-pressure atmosphere of the sessions were also mentioned as assets. Some students mentioned that the sessions motivated them to become peer-teachers themselves.

Discussion: Peer-teaching is becoming an increasingly established form of teaching at our faculty.

Conclusion: Peer-teaching has been well received by both students and peer-teachers according to the collected feedback.

Take Home Messages: The pedagogical path offers pedagogically oriented students a unique possibility to deepen and practice their pedagogical skills.

Direct experience in early clinical exposure of preclinical students conducted by senior clinical students in a Thai medical school

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Background: Inability to realize the importance, use, and application of preclinical content in clinical years leads to lack of motivation in preclinical study. This program, conducted by senior clinical students, aimed to promote early clinical exposure to preclinical students with direct clinical experience to encourage their study motivation.

Summary of Work: 169 preclinical and 106 clinical students were registered to this program. One clinical student brought 1-2 preclinical students to experience clinical environment in various fields including internal medicine, pediatrics, surgery, obstetrics and gynecology, anesthetics, and emergency medicine. Self-reported questionnaire was obtained from 85.2% of the preclinical students after program completion.

Summary of Results: 89.6% and 91.0% of preclinical students had increased preclinical study motivation and realization of preclinical knowledge application, respectively. Mean±SD pre-&post-program score (1=very low, 5=very high) was 3.26±0.97&4.28±0.66 for preclinical study motivation, 3.68±0.87&4.36±0.71 for attitude towards a medical practitioner, and 2.60±1.08&3.97±0.78 for realization of preclinical knowledge application, all p<0.05.

Discussion: Since senior medical students have recently passed preclinical years, they tend to understand the situation of preclinical study and realize the importance of preclinical contents in clinical work. Effortless and intimate communication between clinical and preclinical students and direct experience in early clinical exposure might be the key success factors.

Conclusion: Early and direct clinical experience of preclinical students conducted by clinical students effectively promoted preclinical study motivation, attitude towards a medical practitioner, and realization of application of preclinical knowledge. Key success factors of this program might be direct clinical experience of preclinical students with effective communication with clinical students.

Take Home Messages: Early clinical exposure with direct clinical experience of preclinical students successfully promoted their preclinical study motivation, realization of application of preclinical knowledge, and a positive attitude towards a medical practitioner. Management of this program by senior clinical students leads to the achievement of such purposes.
A Systematic Approach to Peer Teaching in Histology for Medical Students

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Background: Peer teaching is known to be an effective way to help medical students learn. As the cognitive congruence model proposes, students learn better from teachers who can present on a similar cognitive level, rather than from experts who tend to use more complex language. However, there remains a need for precise guidelines on how to develop a curriculum for medical peer teaching.

Summary of Work: A student-led review course was constructed at Sackler School of Medicine to teach histology to first-year medical students. Our peer-teaching model encompassed two principles: (1) optimizing attention span, and (2) using active learning. Students who received (n=66) and did not receive (n=62) peer teaching were compared based on grades on two separate histology practical exams.

Summary of Results: Groups were comparable based on a non-significant difference in their MCAT scores (p=0.74). No significant difference was found between the two groups on the first practical exam (p=0.79), but the intervention group performed significantly better than the control group on the second practical exam (p=0.03).

Discussion: Students showed improvement in histology grades with our system of peer teaching compared to without it. Two tutors alternated teaching every 15-20 minutes, and classes were restricted to one hour. Tutors promoted active learning by drawing on the whiteboard, and by distributing worksheets that provided space for students to draw along. PowerPoint slides were used sparingly, limited to headings outlining the topics at hand.

Conclusion: Students benefit from a peer-teaching model that optimizes attention span and encourages student engagement. This model has been successfully replicated by peer instructors in other courses at Sackler School of Medicine.

Take Home Messages: This peer-teaching model can serve as a systematic guide for peer teachers to develop student-led curriculums at other medical schools.

Learning by Teaching the Basic Life Support (BLS): University Beyond Its Walls

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Background: Basic life support (BLS) is taught to students in medical schools and the external community is not usually benefitted from this learning.

Summary of Work: With this social concern, 17 beginner medical students were trained in BLS in a simulated environment and were instructed to replicate the training in the community. Divided into three groups, supervised by a teacher, they trained 32 community health workers in BLS. Students' performance was evaluated before training the community through theoretical and practical tests, and after training through practical test, overall performance evaluation and self-assessment. Health workers took the theoretical pre-test and, after being trained, the theoretical post-training and the practical ones.

Summary of Results: The theoretical score of the students was 8.3±1.7 (max=10) while the practical score increased from 12.2±2.9 (max=17) to 15.2±1.1 after the teaching activity in the community (p<0.001). The overall assessment got 9.3±0.8 (max=10). There was a correlation between the practical and global assessments (Pearson r=0.6; p=0.02). The self-evaluation score was 9.0±0.5 (max=10). The theoretical score of health professionals increased from 8.9±5.4 to 15.8±3.0 (max=20; p<0.001). In the practical evaluation, the score was 12.4±2.8 (max=17). There was no correlation between the theoretical post-test and the practical evaluation (p=0.3). Considering the practical test, there was no significant difference between the students' pre-training test and the health workers' one (p=0.9).

Discussion: A better practical performance of students after teaching others demonstrates that the activity was an effective learning methodology. Concurrently, the students acted as disseminators of knowledge to other people, who have learned really well.

Conclusion: Teaching the community improves students' performance and enables the social role of the university once health professionals have demonstrated their knowledge. The university, going beyond its walls, plays its role in social accountability.

Take Home Messages: Teaching is a very effective way to learn.
The effectiveness of medical students as teachers for the teaching of preterm labor

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Background: Engaging medical student as teachers is widely and increasingly used in medical schools. The aim of this study is to evaluate the effectiveness of medical students as teachers for teaching of preterm labor.

Summary of Work: Fifteen fifth year medical students were assigned into teacher (N=8) and student group (N=7). Teacher group was introduced the reference source of knowledge for preterm labor. They were asked to teach the student group for 45 minutes by using PowerPoint. After that, medical teacher encourage both group to ask the questions and open discussion. Modified Essay Question (MEQ) was conducted to measure the knowledge.

Summary of Results: Compared to student group, mean score was significantly higher in teacher group (75.25±1.92 vs. 62.86±3.05; p=0.006).

Discussion: This study found that medical as a teacher improve the better knowledge of preterm labor. The limitation of this study were the less participant, and which were not randomly assigned might impact the result. Another limitation were the experience of teaching, and the evaluation of teaching skill in teacher group.

Conclusion: Medical student as a teacher promote better outcome for the teaching of preterm labor.

Take Home Messages: Medical students should be engaged, and educated to be teacher.

Summer Pre-Medical Program at Alfaisal University: Outcomes of Peer-Assisted Learning

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Background: Entering medical school as a freshman can be one of the most challenging transitions a student can experience. The Summer Pre-medical Program (SPP) was designed and taught by senior medical students as a socio-academic summer enrichment program at the College of Medicine, Alfaisal University. Our aim is to look into the outcomes of this summer premed program, to observe for any beneficial effects among the students who attended this program. This will aid us in improving the pre-med program such that it eases the transition of freshmen students into their first years of medical school.

Summary of Work: A cross-sectional survey was conducted among medical students of all academic years at Alfaisal University by distributing online and paper-based questionnaires via email and social media sites. Survey responses were then analysed.

Summary of Results: Out of 162 responses, 90 pupils attended SPP before starting their first medical year and almost all of these students reported GPA above 3.5 out of 4. In addition, these students were better oriented, had smoother transition into medical school, got better understanding of basic sciences and could become more socialize and organized. According to 82.3% of the surveyed students peer assisted teaching in premed program was very beneficial. Furthermore, many students believe peer assisted learning should also be practiced during their medical school years.

Discussion: Attending the premed program has a positive impact on the students. Not only it helped students academically by attaining good grades but also nurtured them to socialize.

Conclusion: As Premed helps in getting acquainted to the system faster, achieve good grades and socialize more, it would be extremely beneficial if it is attended by all freshmen medical students.

Take Home Messages: Peer-assisted learning is highly encouraged in all academic years.
Peer-TED, Peer Learning: Share and Get It

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**Background:** Peer learning is thought to create a conductive environment and enhance self-esteem. We examined whether participating in TED-style talks with each other similarly fosters positive experiences.

**Summary of Work:** Peer-TED, a training program merged with the ideas of TED-style talks for trainees was implemented at a single hospital in Taiwan. This comprised post-graduate year (PGY) physicians taking a free topic of speech for eight minutes and receiving immediate feedback from peers and supervisors for two minutes. 74 participants were enrolled in the program. A self-assessment questionnaire (8 items answered via a 5-point Likert Scale) was used for the analysis following the program.

**Summary of Results:** Participants agreed that Peer-TED gave improvements in the following aspects: being more confident (4.14±.078), having better presentation skills (4.23±.073), promoting peer learning with peers (4.43±.067), being inspired toward their career (4.38±.071), relieving stress in the clinical environment (4.09±.102), and believing it is time-worthy (4.27±.080). The lowest aspect was desiring to prepare for another speech (3.74±.105).

**Discussion:** Peer-TED undoubtedly boosts peer learning, but why didn’t every student want to share more despite loving it? We believe this is due to the training process: students are trained to be homogenous, making it hard for them to express their individuality. However, there is much evidence showing that keeping one’s individuality facilitates learning. Peer-TED may shift the ratio from homogenization to individuality, and enhance the intrinsic motivation of learning.

**Conclusion:** Peer-TED, not only for the presentation skills, but for the mind, is worth spreading to the PGY training.

**Take Home Messages:** Peer-TED facilitates peer learning by creating a conductive environment and enhancing self-esteem. It may also enhance the intrinsic motivation of learning.
**#5JJ1 (133445)**

**Learning by teaching: an Experience Through Opportunity Activity for Final-year Medical Students**

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**Background:** Learning by teaching is a comprehensive method related to Maslow’s hierarchy of needs. Successful learning, preparation and teaching others contributes to the upper-three levels of the pyramid (social-belonging, self-esteem and self-actualization). We cultivated an activity for our final-year medical students through this method and radiology interpretation was the chosen subject to be learned and taught because their OSCE scores in recent years were just average.

**Summary of Work:** During the period between semesters, we discussed with 6th year students about improving their radiology interpretation skill and promoted learning by teaching method. After engaging them, sixty student teachers were divided into six groups of the must-know imaging topics. They designed their own way to teach their students (5th year students) and worked hard with staff supervisors for the topic and class preparation. We evaluated the results by using questionnaires.

**Summary of Results:** Eighty percent of the student teachers liked to teach and 67% got a better handle on the topic. All of the 5th year students loved to learn from their seniors because it was less pressure (100%) and simpler (63%), they had incentive to catch up with their mentors. Six supervisors impressed final-year students’ active, intensive works, but this method required a lot of time for introduction and working with students.

**Discussion:** Besides improving radiology interpretation skill, all of the student teachers perceived sense of value, accomplishment and solidarity after teamwork. We could say that they achieved at least the level of self-esteem in Maslow’s pyramid. This method needs student engagement to create the motivated and effective work with lower inhibitions and higher sense of purpose.

**Conclusion:** Learning by teaching method supports improving clinical competencies, strengthens self-esteem and reinforces student engagement.

**Take Home Messages:** Students could be more than our expectations when they have appropriate supports and empowerment.

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**#5JJ12 (135717)**

**The Role of Peer Assisted Learning in Medical Education: Reform Plan**

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**Background:** Peer assisted learning (PAL) is defined as "development of knowledge and skill through active contribution of knowledge by peers". This is particularly true in medical education, where the restrictions on resources have forced instructors to look for creating new educational approaches which can transfer information to learners in more active way. This study was conducted under the goal to determine whether PAL could be alluded as an alternative to teacher-based approach or not.

**Summary of Work:** This randomized controlled trial was conducted among target population of 4th semester basic science medical students of Shiraz University of Medical Sciences. 60 individuals were selected based on census and divided into two experimental and control group using randomized number table as participants. A researcher-made pre-test an post-test consisted of 10 questions which validity was confirmed by experts of SUMS was taken from all participants to compare scores. Experiments were trained by a gifted talent student who was knowledgeable in courses’ topics and controls by routine approaches. Gathered data were analyzed by SPSS version 14 using descriptive statistical methods.

**Summary of Results:** Results demonstrated a significant difference between the pre-test and post-test scores of all participants (p<0.05). There was a significant difference between scores of case and control group members (p<0.01). There was also a significant difference between the scores of different subgroups (p<0.05).

**Discussion:** According to the results derived from the present study, the crucial role of teacher in learning could not be ignored. However, Peer Assisted Learning could be alluded as one affordable and reliable learning method which would be able to improve medical education effectively.

**Conclusion:** This reliability would also be highlighted if the most appropriate strategy was taken. This study also demonstrated the efficacy of PAL in proportion to numerical values which means the less the tutees the more effectiveness of PAL.

**Take Home Messages:** This study has been conducted for the first time in Iran and has been accepted in two educational country congresses.
An investigation into the perceived improvement of undergraduate dental students’ confidence and preparedness in an OSCE-type setting after a peer-led intervention

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Background: Exam confidence preceding OSCEs can be perceived as significantly less than written or multiple choice examinations due to its unpredictable nature, the tight time constraints of each station and the more practical nature of the examination. This is exacerbated by the lack of practice possible before sitting the exam in comparison to written and multiple choice examinations.

Summary of Work: A peer-led mock-OSCE intervention was utilised. This included 6 phases. Phase 1 involved recruitment of student tutors who had successfully passed the OSCE examination. Phase 2 involved recruited students creating lists of examinable OSCE topics and creating a list of stations which could be ‘mocked’ with limited recourses and having them verified by professional teaching staff at Glasgow Dental Hospital and School. Phase 3 involved advertisement. Phase 4 was detailed circuit planning and organisation. Phase 5 was the orchestration of the mock-OSCE. Phase 6 included feedback and reflection. Summary of Results: Feedback illustrated that the students unanimously found the mock-OSCE significantly improved both their confidence and preparedness for OSCE examinations. All students also said that they found the mock-OSCE useful and would recommend it. Results will be made available in full, with comparison of data from the next session, at the conference.

Discussion: Results strongly indicate that the mock-OSCE intervention was successful in improving perceived confidence and preparedness in an OSCE-type setting. Improvements for the next mock-OSCE sessions were minor and easily edited.

Conclusion: Providing the opportunity for undergraduate dental students to experience a ‘mock-OSCE’ session can have a significant effect on their perceived confidence and preparedness in an OSCE-type setting.

Take Home Messages: Peer led mock-OSCE sessions can provide an effective method to improve student confidence and preparedness.
Peer-Led OSCEs with constructive peer feedback as an effective revision aid for undergraduate dental students

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Background: Constructive feedback is invaluable to improvement throughout professional life. Giving, receiving, interpreting and implementing change after receiving feedback are skills which should be developed during undergraduate life. Students can often be more receptive and engage better with their peers as they may have a more immediate understanding of the difficulties faced and can provide a less intimidating figure than professional staff to question and turn to for guidance.

Summary of Work: Peer-led mock-OSCEs were organised and conducted by undergraduate dental students. All mock-OSCE material was verified by teaching staff at Glasgow Dental School. Constructive feedback was provided to students individually by student examiners following each station and generally in a presentation by a peer tutor following the session. Both examiners and tutors were in the year above the tutees. This gave them an acute understanding of issues tutees may face and how to best overcome them.

Summary of Results: Of 86 students who completed written feedback, almost all agreed that they found student tutors to be approachable, felt comfortable asking questions, found the feedback useful and felt that the session was beneficial to their learning. A complete breakdown of results following this and the following year’s intervention will be available at the conference. Student tutors and examiners fed back that they enjoyed developing skills in giving feedback and felt that it helped them to understand better how to give and receive feedback.

Discussion: There was strong evidence to indicate that tutees found the mock-OSCE intervention to be useful and that they felt it was beneficial to receive feedback from peers. Student tutors and examiners found the session beneficial in developing themselves as professionals.

Conclusion: Student tutors and examiners found the session beneficial in developing themselves as professionals.

Take Home Messages: Peer feedback is an invaluable and under-utilised resource in undergraduate education.