Peer-assisted learning: A planning and implementation framework

Z Robinson², Elena Hazelgrove-Planell, Zara Edwards¹, D Siassakos¹²
¹North Academy, University of Bristol; ²Southmead Hospital

Abstract

Objective: The acquisition of teaching skills is included in the objectives stated in GMC’s ‘Tomorrow’s Doctors’. However, a recent survey demonstrated that these objectives were not adequately addressed in obstetrics and gynaecology (O&G) undergraduate curricula. We aimed to identify any challenges before using peer-assisted learning (PAL) formally in O&G.

Method: One 4th year medical student was taught the principles of learner-centred adult learning, effective presentation, and the principles and clinical skills of performing an episiotomy and its repair.

The selected student then acted as a peer-trainer to a randomly allocated group of 4th year students. We compared the students’ reaction with a validated course experience questionnaire, and knowledge with post-session multiple-choice questions, to those of a group trained by an obstetric tutor.

Results: The tutees regarded most aspects of PAL positively and the peer trainer enjoyed acquiring teaching skills. The main challenges were: ensuring that teaching does not fall below standards, careful selection of the subject/skill to teach, and providing adequate training and support for the student tutor.

Conclusion: PAL was regarded as a positive learning experience in undergraduate O&G for peer tutors and student tutees alike.

Introduction

The acquisition of teaching skills is included in many objectives stated in GMC’s ‘Tomorrow’s Doctors’ (General Medical Council, 2003). However, a recent survey of UK medical schools demonstrated that none of these was addressed in any of the obstetrics and gynaecology (O&G) curriculae (Royal College of Obstetricians and Gynaecologists, 2008).

Peer-assisted learning (PAL) is an exciting teaching method. It offers the benefit of enhancing the teaching skills of students, while increasing their understanding of educational theories and their application in teaching with different techniques. Via PAL, students may also identify their own learning needs and exhibit creativity and resourcefulness. Overall, it could be an exciting way of introducing the ‘teaching of teaching’ to O&G curriculae. However, it has never been tested with O&G students before, and there have been less successful examples with other professions (Morris and Turnbull, 2004).
Aims

With this pilot study we aimed to test the reaction of tutees and peer-tutors to PAL-O&G and identify challenges and barriers to full-scale implementation. A clinical lecturer led the project, supported by the local Academy and on-the-job tutors.

Methods

We used the AMEE Guide No.30 (Appendix) as framework for planning and reporting our study (Ross and Cameron, 2007). Numbers in brackets refer to relevant sections of the Guide.

Training the Tutors (Q7-9): Two 4th year medical students were randomly recruited from the University of Bristol undergraduate programme and training was incorporated in to the RHCN (Reproductive Health and Care of the Newborn) obstetric teaching programme. Both were taught PAL techniques, the principles of adult learning, and learner-centred teaching models to improve their approach to and their evaluation of teaching. Both students were also trained in the principles and clinical skills of performing an episiotomy and its repair, to include knot-tying and suture-techniques, with use of a video and an episiotomy training simulator. We selected this skill as a novel learning experience: no student would have had any prior practical or theoretical knowledge, but everyone could benefit from the skills developed.

The techniques were practiced with one-to-one supervision by two trainee obstetricians. Of these two student-tutors one provided the peer-assisted training and the other acted as a peer-assessor, using both validated peer-feedback forms and free comments to facilitate feedback and reflection.

Training the Tutees (Q10-12): Tutees were recruited from the 4th year Bristol University medical student RHCN programme. After reading an approved information leaflet, they signed a consent form. These tutees were randomly allocated, using appropriate software, to two groups: one to be taught by the selected peer-trainer (Group 2), the other to be taught by a trainee obstetrician (Group 1). Neither gender nor previous education were specified, however all students were year 4 and therefore had had the same basic obstetric training.

Interaction (Q13-15): These two groups were taught within a structured programme, which was identical in content. It included a lecture-based (power-point) presentation and a video on the principles of episiotomy, knot tying and suturing techniques; and practice in episiotomy and its repair with use of an advanced episiotomy model. After evaluating their session, both groups received an additional question and answer session with an experienced trainer, to ensure equity of teaching. The study was fully approved by the University of Bristol Faculty of Medicine and Dentistry Committee for Ethics.

Evaluation (Q16-18): We evaluated the students' reaction with a validated course experience questionnaire (Field et al, 2007) with Likert scale, and knowledge with post-session multiple-choice questions. Both the peer-trainer and peer-assessor were asked for feedback and invited to make free text responses about their experience. Our aim was to determine if a completely new skill could be effectively taught by a peer-tutor, with the additional benefit of developing transferable skills and teaching experience, without compromising knowledge gained by their tutees. Positive feedback from trainer and trainees would be encouraging for planning full implementation.

Results of the multiple-choice questions (MCQs) were calculated as percentages and recorded in Microsoft Excel. MCQ results were compared with use of unpaired t-test analysis. Tutees views, based on the questionnaire, were compared with the Mann-Whitney U test. Statistical significance was set at p<0.01 to account for multiple testing.
Results

10 students were randomly allocated to two groups of 5 each, but 2 students were unable to attend the clinical-tutor-led session as result of other commitments. As a result the tutor-led group had only 3 student tutees, whereas the peer-led one had 5.

Tutees’ reaction: Each student completed the course experience questionnaire after the PAL session and a score of ≥ 4 was considered positive (‘agree’ or ‘strongly agree’). The tutees regarded most aspects of the PAL positively; all students reported the session as interesting and over half regarded it as relevant to their training regardless of it being taught by peer or experienced tutor. It was found that between the groups trainee perception of tutor knowledge did not significantly vary. However, feedback was deemed more clear in the tutor-assisted group.

TABLE 1

<table>
<thead>
<tr>
<th>Question</th>
<th>Clinical-tutor-led group (% who agree)</th>
<th>Peer-tutor-led group (% who agree)</th>
<th>p-value (Mann Whitney U)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the training session interesting?</td>
<td>100</td>
<td>100</td>
<td>p=0.408</td>
</tr>
<tr>
<td>Was the session appropriate?</td>
<td>66</td>
<td>60</td>
<td>p=0.500</td>
</tr>
<tr>
<td>Did the tutor seem informed?</td>
<td>100</td>
<td>60</td>
<td>p=0.012*</td>
</tr>
<tr>
<td>Were the explanations clear?</td>
<td>100</td>
<td>80</td>
<td>p=0.011*</td>
</tr>
<tr>
<td>Was the feedback from the tutor useful?</td>
<td>100</td>
<td>60</td>
<td>p&lt;0.01**</td>
</tr>
<tr>
<td>Were you comfortable asking questions?</td>
<td>100</td>
<td>60</td>
<td>p=0.012*</td>
</tr>
<tr>
<td>Are you confident after the training session?</td>
<td>33</td>
<td>20</td>
<td>p=0.157</td>
</tr>
<tr>
<td>Would you recommend this session to a friend?</td>
<td>100</td>
<td>60</td>
<td>p=0.020*</td>
</tr>
</tbody>
</table>

*: p-value higher than our chosen level of statistical significance (.01) but <0.05  
**: statistically significant

Tutees’ knowledge: Results from the multiple-choice questions were positive (>90%) for both groups.

Peer-tutors’ reaction: ‘I think potentially very useful in a situation of teaching practical procedures where one-on-one supervision is really necessary and that is difficult in a large group’; ‘I found that pretty positive as I know it’s something we need to learn to do, so it was good to practice, and I quite enjoyed it!’; ‘The theory of the presentation has been produced by
somebody properly qualified…makes it easier and more acceptable for both student tutors and learners if they are from the same peer group.’

Peer-feedback: ‘I think the info provided by [peer trainer] was at an appropriate level’; ‘It is difficult for someone to teach others on a subject they have never actually done on a real person and also they can’t answer technical questions on’.

Conclusion
PAL is a useful method to enhance learning among students and speciality tutees, as well as to provide opportunities to develop a teaching portfolio, one of the GMC requirements (General Medical Council, 2003). The use of PAL within simulation training can combine benefits of practical training and operant conditioning in a non-threatening environment. This environment has been shown to be conducive to asking questions and to enhance confidence prior to the skill being performed in the real clinical situation. Other studies have also shown that PAL might be a valid method for improving psychomotor skills; peers can be resources for practising clinical skills while they also practise themselves (Weidner and Popp, 2007).

In our pilot study, the knowledge gained by tutees was not compromised by peer training, and a relatively complicated subject could be taught to one student and then relayed to other students to an acceptable standard. The peer tutor and peer observer enjoyed the experience.

It appears therefore possible to train students to teach their peers basic skills but problems are uncovered when experience and more in-depth knowledge is required. The skills being taught should therefore remain relevant to the set undergraduate curriculum, while retaining a focus on the process of developing the peer-tutors as teachers, under guidance of experienced tutors.

If the focus is clear and a structured framework is followed (Ross and Cameron, 2007), PAL could be useful for enhancing students’ manual and teaching skills in a specialty in which it has been historically difficult to do so.

References


Notes on Contributors

Z Robinson is a Specialty Trainee in O&G interested in medical education research.

Elena Hazelgrove-Planel and Zara Edwards are medical students with interest in teaching.

D Siassakos is a Clinical Lecturer in Education and SpR O&G interested in developing novel methods for undergraduate and postgraduate training.

D. Siassakos, Clinical Lecturer (Hon) in Medical Education, Southmead Hospital and University of Bristol, Chilterns, BS10 5NB, Bristol, UK. Tel: 44 (0)117 323 2321; email: jsiasakos@gmail.com


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