



Original Article

Peer-assisted learning model enhances clinical clerk's procedural skills

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Abstract

Background: Failure to transfer procedural skills learned in a laboratory to the bedside is commonly due to a lack of peer support/stimulation. A digital platform (Facebook) allows new clinical clerks to share experiences and tips that help augment their procedural skills in a peer-assisted learning/teaching method. This study aims to investigate the effectiveness of the innovation of using the digital platform to support the transfer of laboratory-trained procedural skills in the clinical units.

Methods: Volunteer clinical clerks (n = 44) were enrolled into the peer-assisted learning (PAL) group, which was characterized by the peer-assisted learning of procedural skills during their final 3-month clinical clerkship block. Other clerks (n = 51) did not join the procedural skills-specific Facebook group and served as the self-directed learning regular group. The participants in both the PAL and regular groups completed pre- and post-intervention self-assessments for general self-assessed efficiency ratings (GSER) and skills specific self-assessed efficiency ratings (SSSER) for performing vein puncture, intravenous (IV) catheter and nasogastric (NG) tube insertion. Finally, all clerks received the post-intervention 3-station Objective Structured Clinical Skills Examination (OSCE) to test their proficiency for the above-mentioned three procedural skills.

Results: Higher cumulative numbers of vein punctures, IV catheter insertions and NG tube insertions at the bedside were carried out by the PAL group than the regular group. A greater improvement in GSERs and SSSERs for medical procedures was found in the PAL group than in the regular group. The PAL group obtained higher procedural skills scores in the post-intervention OSCEs than the regular group.

Conclusion: Our study suggested that the implementation of a procedural skill-specific digital platform effectively helps clerks to transfer laboratory-trained procedural skills into the clinical units. In comparison with the regular self-directed learning group, the peer-assisted learning characteristics of Facebook give additional benefits to the PAL group by enhancing their procedural skills.

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Keywords: Facebook; Peer-assisted learning; Procedural skills

Conflict of interest statement: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

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1. Introduction

In addition to diagnostic and clinical reasoning skills, procedural skills have been incorporated in the objective structured clinical examination (OSCE) used to test medical students.^{1,2} At the beginning of a clinical clerkship, laboratory training sessions (Table 1) were organized in our institution to increase the proficiency of procedural skills of the clinical clerks. Unfortunately, many of the clinical clerks who received this training still failed their end-of-clinical clerkship medical procedural OSCE. A post-OSCE mini-interview revealed that a lack of motivation and a low level of confidence in practicing these medical procedures during the clinical clerks' clinical rotation were the main reasons for failure. Similarly, the literature suggested that clerks have difficulties in transferring laboratory-trained procedural skills into clinical settings/units.³ Accordingly, an intervention program that focuses on solving this difficulty was developed by the clinical clerkship director of our institution.

Peer learning is a form of learning that involves informal dynamic relationships within a group of individuals who are similar in experience and rank. It is based on the premise that there is a pool of skills, experiences, and resources within the group that is deliberately or subliminally used to support and empower one another and to foster everyone's development. Because of the equality among group members, relationships are generally personal and mutual, and ideally, each participant has something of value to contribute and gain.⁴ A digital platform such as Facebook is one example of a peer-group community that is used by medical students to prepare writing and examinations, to share their experiences dealing with distressing situations during clinical rotations and to make individual career plans.⁵ A stable peer-group community can offer clinical clerks the opportunity to share the immersive year-long clinical clerkship experience with others who are experiencing a similarly challenging learning environment. Peer-assisted learning (PAL) offers educational benefits that do not require a major time investment from faculty members, unlike curriculum innovations.^{6,7} A peer-group community provides continuous opportunities for group-based reflection and improvement.⁸ The most important aspect is for clinical clerks to be skilled

at performing medical procedures as a first step to becoming independent physicians in the future.

Currently, there have been no studies that have explored whether a digital platform peer-assisted intervention is able to help clinical clerks transfer laboratory-trained procedural skills into clinical units. Therefore, we implemented a Facebook peer-assisted intervention and tested whether this intervention was able to help the clinical clerks transfer their laboratory-trained procedural skills to the clinical units.

2. Methods

2.1. The common laboratory skill training sessions

At the start of the clinical clerkship, all clinical clerks were requested to attend a manikin-based (vein puncture, intravenous [IV] catheter and nasogastric [NG] tube insertion) laboratory training. These training sessions included an introduction and demonstration of the abovementioned procedural skills, followed by individual tutor-guided practice; this practice was carried out on both manikins and peers. Finally, every clinical clerk was audited and debriefed for these skills by three experienced trainers who used those skills clinically. After the class, detailed lectures covering all of the three procedures were given to all clinical clerks.

2.2. Peer-assisted learning (PAL) program

At the start of the PAL intervention program, a Facebook group was set up to foster the learning of peer-assisted procedural skill by allowing the PAL group's participants to keep in touch while rotating through different clinical wards. The digital platform, in addition to having wall posts, photos, videos and web links describing the above three procedural skills, allowed all participants to share training experiences/resources and any procedure-related tips and educational information. This Facebook group was specifically a private group for the PAL group's participants. Therefore, this Facebook group could be accessed only by invited participants, namely, the PAL group's participants and the teaching assistants (TAs) for the course. Every two weeks, TAs updated the cumulative frequencies of each participant performing the three procedural skills on primary care patients by collecting data from email. To encourage the PAL group, TAs sent an email invitation to each participant to visit the Facebook group, so they could see others' completion of the three procedural skills at the basic and additional frequencies. Meanwhile, TAs analyzed how frequently the participants used the Facebook group, distributed topics (to share clinical skills training experiences/resources, to share procedure-related tips and to share educational information), and chatted for discussion.

2.3. Participants

From January 2013 until September 2015, the PAL program was outlined to the clinical clerks at their orientation. Continuously, all clerks were invited to participate in the PAL

Table 1
Characteristics of the study groups.

	PAL group (n = 44)	Regular group (n = 51)
Age (years)	20.9 ± 0.8	21.4 ± 0.5
Gender (female)	38.2%	34.7%
Gender (male)	61.8%	65.3%
Ratio of having or not having prior vein puncture procedure experience (yes/no)	1.9	2.1
Ratio of having or not having prior NG tube procedure experience (yes/no)	0.55	0.61
Ratio of with and without prior IV catheter insertion procedure experience (yes/no)	0.65	0.78

Peer-assisted learning (PAL) and regular group intervention were undergone at the last block of clinical clerkship; Age are presented as means ± Standard Deviation. NG = nasogastric; IV = Intravenous.

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