Perceptions of Pharmacy Students Towards Peer Cross-checking of Dispensed Medications During Practical Classes

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Extended Abstract

Introduction

Peer learning has been extensively applied to facilitate learning and the reported outcomes have been positive (Gay & Rulter, 2013; McKenna & French, 2011). Peer assessment as part of peer learning is utilised in healthcare education, including professional pharmacy degree programmes (Basheti et al., 2010; Wagner et al., 2012; Wu et al., 2012). One of the many routine responsibilities of pharmacists as they provide pharmaceutical care to patients is to check the medications prepared and/or packed by support staff, namely junior or trainee pharmacists, pharmacy technicians and assistants. Therefore, learning to check and correct the finished work of another person is a relevant and essential skill set to inculcate in pharmacy students. One approach is to introduce cross-checking or peer grading of medication dispensing assignments in the pharmacy programme.

Medication dispensing practical classes were conducted in the professional pharmacy programme at the National University of Singapore. Each student would be assigned two to three dispensing exercises to be completed within the 3-hour session weekly over eight to ten weeks during the semester. These exercises could require students to compound extemporaneous preparations, select commercial products, type product labels, fill up legal and preparation records and so on. While the first six of these dispensing exercises were graded by the faculty and promptly returned to the students at the start of the following practical class, the rest were cross-checked by assigned peer students. Each student would first complete the exercises before spending about 15 minutes to cross-check the same two exercises completed by another student. Then eight to ten students would gather for a group debrief session with a faculty to clarify doubts, discuss common mistakes and review other issues.

Objectives

This study is an attempt to investigate students’ perception of peer cross-checking as part of their learning journey, receiving timely feedback from peers on their completed exercises and preparatory
training for the eventual pharmacist-supervisory role of checking and correcting written assignments and/or dispensed medications.

Methods
A cross-sectional questionnaire survey was administered to all first year (n=209) and third year (n=150) students after completing all dispensing practical sessions. Participation was voluntary and written informed consent was taken. A 5-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree” was used for five survey items (Table 1). The students could also offer qualitative feedback in free text on the survey form.

Results
149 first year (71%) and 99 third year (66%) students participated in the survey. Table 1 summarises their responses. 54% first year and 57% third year students strongly agreed and agreed that peer cross-checking helped them to learn to check and correct their classmate’s work. More than half of the respondents (56% first year and 61% third year students) strongly agreed and agreed that peer cross-checking was preparing them for their future role as pharmacists supervising and checking the work of pharmacy assistants and technicians. They were divided in their views if they had received more feedback as well as timely feedback on their work with peer cross-checking. While 50% of the first year students strongly disagreed and disagreed on receiving more feedback to different aspects of their work, only 34% of third year undergraduates shared the same opinion. More first year students (34%) strongly disagreed and disagreed compared to 19% third year students that with cross-checking, they received timely feedback on their work. Views on whether peer cross-checking enhanced their learning experience were mixed—41% first years strongly disagreed and disagreed while 43% of third year students were neutral in their responses.

In terms of qualitative feedback, a few students commented that cross-checking was good; it created self-learning opportunities to make them be aware of and to learn to identify common mistakes made by their peers. More students preferred grading by the faculty compared to peer cross-checking. Some felt that their peers might not have been as sharp as the faculty in picking up their mistakes. A few of them experienced situations where mistakes were overlooked by and not picked up by their peers while other students related that they were unsure of what to look out for during the cross-checking of their peers’ work. This was felt more acutely when it was their first attempt at preparing and dispensing a type of dosage form. This feedback was more prevalent from the first year students. Some felt that it would be good if the faculty could go through their cross-checked exercises individually in addition to the group debrief. Overall, they found the group discussion led by the faculty helped them acquire a more critical and clearer understanding of their practical exercises.

Conclusions
Pharmacy students generally perceived that the peer grading activities helped them learn better and faster. They also noted that this process helped prepare them for the pharmacists’ role of checking and correcting work done by subordinates and fellow colleagues. This study demonstrated that peer cross-checking of practical exercises achieved its effected learning objectives. However, this could be enhanced with the faculty providing more explicit guidance to the students for the peer cross-checking process.
References


Table 1. Responses of Pharmacy Students on Peer Cross-checking for Dispensing Practicals: Comparison between Year 1 and 3

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1 n (%)</td>
<td>Year 3 n (%)</td>
<td>Year 1 n (%)</td>
<td>Year 3 n (%)</td>
<td>Year 1 n (%)</td>
</tr>
<tr>
<td>1. Cross-checking has helped me learn to check my classmate's work.</td>
<td>12 (8.1)</td>
<td>2 (2)</td>
<td>16 (10.7)</td>
<td>5 (5.1)</td>
<td>40 (26.8)</td>
</tr>
<tr>
<td>2. With cross-checking, I received more feedback to different aspects of my work.</td>
<td>21 (14.1)</td>
<td>5 (5.1)</td>
<td>54 (36.2)</td>
<td>29 (29.3)</td>
<td>39 (26.2)</td>
</tr>
<tr>
<td>3. With cross-checking, I received timely feedback on my work.</td>
<td>10 (6.7)</td>
<td>2 (2.0)</td>
<td>40 (26.8)</td>
<td>17 (17.2)</td>
<td>43 (28.9)</td>
</tr>
<tr>
<td>4. Cross-checking has enhanced my learning experience in the dispensing practicals.</td>
<td>16 (10.7)</td>
<td>2 (2.0)</td>
<td>45 (30.2)</td>
<td>19 (19.2)</td>
<td>41 (27.5)</td>
</tr>
<tr>
<td>5. Cross-checking is preparing me for my future role as a pharmacist supervising and checking the work of pharmacy assistants and technicians.</td>
<td>7 (4.7)</td>
<td>2 (2.0)</td>
<td>12 (8.1)</td>
<td>5 (5.1)</td>
<td>46 (30.9)</td>
</tr>
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