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Teaching and Learning Matters (Case Report)

Using peer teaching to introduce the Pharmaceutical Care Model to incoming pharmacy students

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ABSTRACT

Background: The aim of this initiative was to design and evaluate a peer teaching activity where pairs of second-year pharmacy students introduced the Pharmaceutical Care Model and discussed success in the broader first-year pharmacy curriculum with pairs of first year students.

Educational activity: Second-year pharmacy students individually created concept maps illustrating the main components of pharmaceutical care to be used as teaching tools with first-year students. First-year students were given a brief introduction to pharmaceutical care by faculty and prepared questions to ask their second-year colleagues. Two second-year students were then matched with two first-year students for a two-part peer teaching event. Each student completed documentation of the peer experience, which included questions about the effectiveness of the teaching, changes to be made in the future, and the usefulness of the exercise. The documentation was analyzed via content analysis and instructors evaluated the concept maps based on their effectiveness as a teaching tool for novices. A rubric was used to evaluate 166 concept maps of which 145 were rated good, 18 were rated as better, and 3 as best. Themes emerging from the content analysis included: positive impact of teaching and learning pharmaceutical care, value of broader curriculum discussion, and beneficial first- and second-year connections.

Critical analysis of the educational activity: A structured peer teaching event outside the traditional classroom setting can create a space for: teaching and learning to occur, student-student connections to be made, and advice on the curriculum to be shared

Background

The doctor of pharmacy curriculum at the University of Minnesota College of Pharmacy (UMN-COP) is a dual-campus model, delivered across two campuses, in Minneapolis and Duluth, Minnesota. The curriculum emphasizes pharmaceutical care, which is “the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life.”¹ Similar to other professional practices, pharmaceutical care consists of three components - the philosophy of practice, patient care process, and practice management systems.² The Pharmacists' Patient Care Process (PPCP) as defined by the Joint Commission of Pharmacy Practitioners (JCPP) was informed by the pharmaceutical care patient care process.³ The pharmaceutical care patient care process is taught in the first semester of the first year in Foundations of Pharmaceutical Care (FPC), and students build on this knowledge in subsequent courses throughout the curriculum.

Prior to FPC, first-year pharmacy students (PD1s) start the semester with a three-week course called Becoming a Pharmacist (BaP). This course introduces the major competency areas of the curriculum, including patient care competencies, providing an

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opportunity to prepare students for FPC. In a previous iteration of BaP, the PD1s were introduced to the practice of pharmaceutical care by the FPC instructors in a lecture-style session that included some group work and active learning. This session was conducted across both campuses via interactive television with presenting faculty on each campus. Prior to class students were asked to read the course text and answer targeted questions about key components of the practice.² During the session, faculty showed an eight-minute video of a mock pharmaceutical care encounter. Then students paired up to debrief on the video and their pre-work together, along with their feelings/thoughts about becoming a practitioner and what that means to them. Following the debriefing, large group sharing and discussion was facilitated by the instructors. Then each table of eight or nine students came up with table consensus answers to the eleven pre-work questions and reported out to the class. Students were instructed to bring their consensus responses to the first day of FPC for use in an activity. Although students were actively engaged in the session, instructors discovered students did not retain the content, requiring re-teaching when the semester started. An alternative was needed for launching FPC and, more broadly, the patient care competencies threaded through the curriculum. The launch needed to help first-year students understand the material conceptually and see its relevance to their future practice.

In addition to FPC, PD2s have completed a second patient care course, two semesters of applied learning (lab) activities and community introductory pharmacy practice experiences, reinforcing elements of pharmaceutical care practice. However, there was no formal mechanism for them to assess their learning over the previous year as a whole or reflect upon their developing expertise.

Peer teaching was identified as a promising technique that may address the first-year students' need for conceptual understanding and relevance, as well as the second-year student's need to appreciate their developing expertise. Peer teaching has been defined as occurring when "one student teaches one or more fellow students."⁴ Peer teaching is often used interchangeably with peer-assisted learning, peer tutoring, and peer mentoring, yet each differs slightly.⁴ Ten Cate and Durning⁴ attempted to distinguish between peer terminology based on the group size, formality, and education-related distance between peers. They assert peer-assisted learning occurs in small group situations (less than three people) with little formality and little-to-no distance between peers.⁴ Peer tutoring and peer mentoring both have little formality and small groups, but some distance exists between peers.⁴ This is contrasted with peer teaching, which takes place in a formal environment, with larger groups and some education-related distance between peers.⁴

Peer teaching should be seen as distinct from other forms of peer work, such as peer review and peer assessment. For instance, Nagel and Kotze⁵ describe a process of peer review where students asynchronously evaluate other students' work and provide feedback. Peer assessment "involves learners in assessing, critiquing and making value judgements on the quality and standard of work of other learners."⁶ While some of these definitions may overlap, it is important to use consistent terminology when designing learning activities and making connections to existing literature. In this instance, peer teaching was selected because it can benefit the student doing the teaching and the student being taught.⁴ According to Ten Cate and Durning,⁴ the critical components of a peer teaching encounter include the teaching taking place in a groups of three or more in a formal setting by peers with education-related distance between them and their students.

An overlapping professional development day could provide the location for improving the teaching and learning of pharmaceutical care for both PD1 and second year pharmacy students (PD2) students. A peer teaching activity could provide the opportunity for PD2s to introduce the practice of pharmaceutical care to PD1s. Preparation for this activity would require PD2s to review previously learned course material and identify the most important concepts from that learning. In addition, it would aid in solidifying developing expertise by requiring students to teach the concepts to a novice. Selecting important points and presenting those points to someone that is new to the content was thought to be a transferable skill that is important to patient care, collaboration on the health care team, and precepting. The Center for Advancement of Pharmacy Education (CAPE) Educational Outcome 3.2 states, "Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding."⁷ In addition, the competencies for the UMN-COP curriculum include the ability to "contribute to the professional development of peers, colleagues, and others." This activity would allow PD2 students to exercise their skills in developing others.

PD1s would benefit by learning in a small, individualized session from a near-peer, defined as a more senior student who teaches a junior student in the same program or curriculum.^{4,8} In addition, a near-peer would be able to use their recent experiences to present the content in a way beginning learners could grasp, as opposed to an expert, who may have a different perspective on necessary and relevant information to share.⁹ PD1s would be learning from a peer that had very recently experienced the same transition to the profession that they were currently experiencing and had "been in their shoes." Researchers in a study of first- and second-year medical students serving as learners and teachers found near-peers can "empathize with their students, teach at the appropriate level, and anticipate and reframe learning."¹⁰ In addition, instructors anticipated conversations between near-peers would inevitably include advice on succeeding, and that the opportunity to get to know students in other cohorts would be valued, especially in the first weeks of the curriculum.

Examples of peer teaching exist in the pharmacy literature. Peer teaching has been used in a women's health elective, a pharmaceuticals course series, and in working through situational patient cases.¹¹⁻¹³ In each of these cases, peer teaching was one learning strategy used within a single course in which the peer teaching was completed by one's classmates. Other related examples include a peer-to-peer education program focused on interprofessional communication and peer-led team learning in an online course.^{14,15} In these examples pharmacy students were brought together with students in other disciplines for the teaching encounter(s).

Only one report of near-peer teaching in pharmacy was identified.¹⁶ Second-year pharmacy students taught first-year students aseptic technique, drug distribution procedures, computer data entry and patient counseling in a pharmaceutical care skills lab at Washington State University.¹⁶ In this model, peer teachers demonstrated, coached and evaluated in a structure designed to mimic the working relationships of pharmacists and technicians. Evaluative data indicated that peer teachers were "pleasantly surprised at how much they knew" and that a benefit of the approach was getting to know students in another class.¹⁶

Building on the definitions and literature above, this peer teaching initiative aimed to have near-peers create a teaching tool and

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