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IPE Reports

Impact of an interprofessional medication error workshop on healthcare student perceptions

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ABSTRACT

Background: The integration of interprofessional education (IPE) into health professional curricula is critical to ensuring safe and efficient delivery of patient care. The intent of this manuscript is to describe the results of a pilot study designed to evaluate the impact of a large-scale interprofessional medication error prevention workshop on student perceptions of team-based patient care in the prevention of medication errors.

Interprofessional education activity: Pharmacy, medical, and physician assistant students' perceptions of the role of multidisciplinary patient care teams in preventing medication errors were evaluated before and after participating in a three-hour interprofessional medication errors prevention workshop utilizing a modified version of the validated Attitudes Towards Health Care Teams Scale.

Discussion: When comparing student attitudes among the three schools, statistically significant differences in student perceptions across the items and subscales (e.g., quality of care/process and physician centrality) captured in the instrument utilized were identified. Additionally, differences in the responses of pharmacy, medical, and physician-assistant students were found, highlighting the areas where healthcare education can be targeted to bridge the gap in opinion.

Implications: We demonstrated an overall positive impact of an interprofessional medication errors prevention-themed workshop on the attitudes of the participating healthcare students. Future directions and research initiatives focusing on the role of IPE and the influence of IPE workshops on team-based performance are indicated to validate the influence of this method of education on the attitudes of post-graduate healthcare trainees and healthcare practitioners.

Background

The National Coordinating Council for Medication Error Reporting and Prevention defines a medication error as “any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer”.¹ Estimates of the prevalence of medication errors suggest that annually more than 3.8 million

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inpatient errors and 3.3 million outpatient errors occur, resulting in approximately 7000 deaths and accounting for more than \$21 billion of wasteful healthcare spending in the United States alone.²⁻⁷ The sources of medication errors are often considered multifactorial and multidisciplinary, occurring from the initial ordering of medications to the administration and monitoring of response. Research has shown that interprofessional collaboration can significantly reduce the rate of medication errors, improve patient safety, and decrease healthcare costs.⁸⁻¹⁰ Team-based care draws on the expertise of various healthcare providers to potentially prevent medication errors and to ensure the provision of comprehensive and safer patient care.

Healthcare education has traditionally been structured such that students are taught with peers from their own professional programs of study. Since traditional training focuses on patient care within the boundaries of one particular discipline, students do not develop respect and awareness of the roles of other professions in the delivery of patient care.¹¹⁻¹³ With limited exposure to interprofessional collaboration during formal education, it is unrealistic to expect these students to work efficiently as members of interprofessional teams in clinical settings, during externships, and after graduation. This creates a disjunction between the isolated training in the classroom and the interprofessional skills and attitudes critical for effective and safe clinical practice.¹³⁻¹⁵ Hence, there is a clear need to increase interprofessional education (IPE) opportunities to students during their formal education. As a call for standardizing healthcare professional education to prepare learners to practice in an interprofessional world, the Interprofessional Education Collaborative (IPEC) has developed Core Competencies¹⁴ for IPE to include the following: values and ethics; roles and responsibilities; interprofessional communication; and teams and teamwork. Incorporating these skills into any IPE initiative is imperative to ensure student competency in this arena.

In 2015, the Institute of Medicine published a report, *Measuring the Impact of Interprofessional Education on Collaborative Practice and Patient Outcomes*, which describes a framework for the delivery and assessment of IPE initiatives.¹⁶ Evaluations of the impact of IPE beyond learning outcomes and into the quality and patient care arena have become endpoints of interest. Notably, in the work by Kirkpatrick and colleagues,¹⁷ there are a multitude of outcomes one can capture from IPE research, from measuring the learner's reaction and experiences through the acquisition of knowledge and skills or, ultimately, organizational change and benefits to patients and their families.

Periodic IPE workshops are one strategy for addressing IPE competencies at academic institutions, where more extensive training may not be feasible due to organizational or logistical constraints, particularly when IPE is imparted on existing curricula.¹⁴ Although the actual structure may differ between programs, IPE workshops generally incorporate students from different health professional schools including medicine, pharmacy, nursing, social work, and others.¹⁸⁻²⁰ Students work in interprofessional teams to solve patient cases under the guidance of interprofessional facilitators. A major goal of this exercise is for students to learn to work collaboratively with students from other disciplines and appreciate the unique input each discipline can provide in optimizing patient care decisions.

This survey study was conducted with medical, physician assistant, and pharmacy students participating in an IPE workshop on medication errors at a multidisciplinary healthcare campus at a large public university. The intent of this workshop was to expose learners to the IPEC competencies related to roles and responsibilities and teams and teamwork in the provision of patient care. The primary aim of the study was to compare pre- and post-workshop changes in student attitudes toward IPE and interprofessional patient care, both collectively and within each school cohort, in alignment with Kirkpatrick's outcomes of acquisition of skills and knowledge. Measurement of attitudinal change was most appropriate for this workshop, as learners of various levels in their education (medical students in their third professional year, physician assistant students in the second professional year, and pharmacy students in the fourth professional year) were included, each varying in their understanding of contributing factors related to medication error occurrence and strategies for evaluating errors once they occur.

Interprofessional education activity

Description of IPE workshop

As part of a large-scale IPE initiative including various case-based activities, the Ernest Mario School of Pharmacy (EMSOP) at Rutgers University created a three-hour interprofessional medication errors prevention workshop in conjunction with other schools within Rutgers Biomedical and Health Sciences, including the physician assistant program and medical school. All three programs had recently become members of a newly integrated health sciences campus, which also includes the nursing, dental medicine, public health and health professions, and the graduate biomedical sciences. The session was part of a required capstone course for EMSOP students and a *Patient-Centered Medicine* course for third-year medical students. Participation for students in the physician assistant program was considered voluntary. A total of 24 faculty volunteers from respective degree programs (six from medicine, 13 from pharmacy, five from physician assistant) served as facilitators for the individual breakout sessions, which occurred in 22 separate rooms and allowed the approximately 375 student participants to be broken down into groups of 15-17 for discussion. Materials were provided by e-mail to all faculty volunteers; the program preparation and logistics timeline is depicted in Fig. 1. A mandatory 45-minute facilitator training session was conducted immediately preceding the workshop, where the format of the program and materials were reviewed in detail, along with strategies and best-practices for the role of the facilitator in moderating group discussions and establishing ground rules for the breakout sessions.

The workshop was divided into three segments; the first two segments were in large lecture format while the third was conducted in small breakout sessions. In the first segment, a physician responsible for quality improvement at a large university hospital presented an introductory 30-min presentation on the prevalence and consequences of medical and medication errors, the role of interprofessional healthcare teams in preventing such errors, and the utilization of various analytic measures for the identification

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