

# Pharmacist-led review sessions with medical students and their impact

## Abstract

The Institute of Medicine (IOM) called for a new emphasis on interprofessional approaches to medical education suggesting the ever challenging and complex needs of patients can best be addressed by healthcare professionals communicating and working together as members of an interprofessional healthcare team. A number of different articles are published on the effects a pharmacist can have on medical education in the clinical years. Few articles detail the effect pharmacists could have on medical students in their pre-clinical years. The purpose of this study was to determine if an interprofessional educational approach, defined as having a pharmacist-led pharmacology review session(s), can impact medical student attitudes towards pharmacists. A pre-post survey design using a reliable and validated tool was performed. This study supports, using trending data, the premise that interprofessional education can impact attitudes of healthcare students towards each other. Pharmacist educating medical students in pre-clinical years was shown to have an impact of medical students' attitudes towards the role of pharmacist, especially in providing drug treatment decisions.

**Keywords:** Interprofessional education, Pharmacy and medical students, Pharmacist led teaching, pre-clinical teaching

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## Background

In 2001, the Institute of Medicine (IOM) called for a new emphasis on interprofessional approaches to medical education. The IOM's statement suggests that the ever challenging and complex needs of patients can best be addressed by healthcare professionals communicating and working together as members of an interprofessional healthcare team to improve healthcare outcomes.<sup>1-3</sup> It is important to educate health care students interprofessionally to learn about each other's roles, build collaboration skills, and impact attitudes towards each other. Attitudes towards other members of a healthcare team can impact its success when seeking the team goal of improved patient outcomes.

Clinical pharmacist are shown, in a systematic review of the literature, to positively impact patient outcomes by improving patient satisfaction, medication management, quality of life and economics related to drug costs.<sup>4</sup> Educators are currently trying to achieve similar goals as noted above in medical education.<sup>3</sup> Articles acknowledge students favored interprofessional education opportunities of both medical students and pharmacy students when presenting pharmaceutical education.<sup>5,6</sup> The effects a pharmacist can have on medical education in the clinical years has also been noted.<sup>7,8</sup> However, few articles detail the effect pharmacists have on medical students in their pre-clinical years.

The purpose of this study was to address attitude formation and determine if an interprofessional education approach, defined as having a pharmacist-led pharmacology review session(s) for pre-clinical second year medical students, can impact medical student attitudes towards pharmacists.

## Methods

The study design was a pre-post design. For an entire academic year, 2017-2018, two Chicago Medical School (CMS) students within Rosalind Franklin University of Medicine and Science (RFUMS), who are also registered pharmacists, led pharmacology review sessions for

second year (pre-clinical) medical students enrolled in the CMS course "Foundation of Medical Pharmacology". Lecture review sessions were held in person and occurred every three weeks. Additionally, recorded versions of the session were posted on the class social media page before examinations. Review sessions summarized the material for the upcoming exam and lecture notes were disseminated to the entire class using the class social media page. The method of recruitment was as follows: At the beginning of the academic year, an email was sent out to the CMS students enrolled in the "Foundations of Medical Pharmacology" course. To ensure that review session leaders were not involved in the direct recruitment of participants, the email was sent via a third-party faculty member. The email informed students of the study and asked them to participate. Participants were informed that review sessions would be held throughout the year before each combined exam for the pharmacology course.

An Informed Consent waiver was sought and approved by the Institutional Review Board at RFUMS, as well as receiving approval for this research study. Information about the study was presented in the email with a link provided to an anonymous Qualtrics survey entitled the "Scale of Attitudes toward Pharmacist-Physician Collaboration". If a student wished to participate in the study, they were asked to go to the link and complete the survey, which again provides study information. Also of note, no student was denied access to the review session materials posted due to refusal to participate in the research study. Prior to the first review session a second email was sent to the Class of 2020 by the third party faculty member again describing the study and the link was provided in this email similar to the first email described above. If the student chose to participate, they were asked to complete an anonymous survey. Students were advised participation was purely voluntary, that the two surveys are not associated with the pharmacology course and will have no effect on the class grades; and that they could withdraw from the study at any time.

## Instrument

The instrument used; the "Scale of Attitudes Toward Pharmacist-Physician Collaboration" is a validated and reliable instrument for

measuring attitudes toward physician–pharmacist collaborative relationships for administration to students in medical and pharmacy schools.<sup>9</sup> The instrument is a questionnaire consisting of 16 questions using a Likert scale (1-strongly disagree, 2-disagree, 3-agree, 4-strongly agree). The questionnaire was sent to study participants before lecture sessions commenced and again after the final review session at the end of the academic year. The survey was meant to assess medical school students' attitude towards pharmacists after participating in review sessions.

## Results

**Table 1:** Scale of Attitudes toward Pharmacist-Physician Collaboration shows the questions found on the instrument used in the survey. A two-tailed T test was used to analyze the data. The number of participants who participated in the pre-intervention survey was 44 and the post 29 (66%). A p-value for each question was obtained (Table 1).

Question 15, Physicians should be made aware that pharmacists can help in providing the right drug treatment, reached statistical significance (Pre: 3.61 (0.49) and Post: 3.89 (0.31)  $p=0.004$ ). Question 13, Physicians and pharmacists should be educated to establish collaborative relationships, trended closely towards statistical significance (Pre: 3.59 (0.49) and Post: 3.78 (0.41)  $p=0.07$ ). It is worthy to note there were positive trends in several questions. Of note, the results from Question 9 The primary function of the pharmacist is to fill the physician's prescription without question, indicate medical students have a better appreciation of the role of the pharmacist by recognizing their value and need to question orders as they are able to lend their expertise regarding drugs and their interactions and not merely fill prescriptions as the question alludes to stating.

## Discussion

Chicago Medical School (CMS) is part of a greater university, Rosalind Franklin University of Medicine and Science (RFUMS). RFUMS's mission is to 'serve humanity through the interprofessional education of health professionals.' In following this mission, the curriculum is filled with foundational experiences geared towards interprofessional medical education. Our study population was likely heavily influenced by culture cultivated at RFUMS.

Our study utilized a previously validated questionnaire entitled the 'Scale of Attitudes towards Pharmacist-Physician Collaboration.' The questionnaire is a 17 question Likert scale which ranged from a score of 1 = strongly disagree to 4 = strongly agree. Excluding question 9, the average score for our respondents in the pre-intervention survey was approximately 3.5-3.6; which is in-between agree and strongly agree.

Our pre-intervention results indicate that our study population had a positive attitude towards the pharmacist-physician collaboration prior to the intended intervention. Therefore, a lack of statistical significance could be explained by a baseline which was high at its onset. Had the study been conducted at an institution that did not have interprofessionalism heavily integrated into its curriculum, a greater change may have occurred.

## Conclusion

This study supports, using trending data, the premise that interprofessional education can impact attitudes of healthcare students towards each other. Pharmacist educating medical students in pre-

clinical years was shown to have an impact of medical students' attitudes towards the role of pharmacist, especially in providing drug treatment decisions. A limitation of the study include participants in this study population were already being trained at an institution that heavily integrates interprofessional education at its core. Still, the literature indicates an interprofessional approach to healthcare can improve patient outcomes. Also, those educators are attempting to achieve goals in medical education to train healthcare students interprofessionally so they can learn about each other's roles and practice with understanding and respect of other healthcare team members. This will help to build relationships early in a student's career so that collaborative efforts can be achieved once they are practicing physicians.

Best practices would suggest healthcare professionals, such as pharmacist, should be involved in delivering content they are experts in, so that not only didactic education on the subject is provided in the best way possible, but having the actual healthcare provider, such as the pharmacist, deliver that content may positively impact attitudes and behaviors of healthcare students towards other healthcare providers. This may lead to their functioning as an optimal healthcare team member with the unique goal of improving patient outcomes.

## Acknowledgements

None.

## Conflict of interest

The author declares that there has no conflict of interest to publish this manuscript.

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