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# How Trustworthy Professional Activities in Pharmacy Are Perceived by Undergraduate Students

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## Abstract

**Introduction:** Efforts in pharmacy education are focused on attracting students by successfully communicating the pharmacist's value to the health care team, as the number of applicants continues to decline. To lay out the anticipated duties and obligations of recent pharmacy graduates, the American Association of Colleges of Pharmacy (AACP) released entrustable professional activities (EPAs). Whether or whether these claims strike a chord with the public and entice students to study pharmacy is an open question. **Innovation Overview:** A survey was administered to students using EPA statements in the online undergraduate course PHAR1001: Orientation to Pharmacy. Before and after taking an introductory pharmacy course for undergraduates, all students were asked to fill out the survey. Participants were asked to rate the expected frequency of each EPA activity in all pharmacy practice settings and if they thought the activity was relevant to pharmacy practice. **Results:** 283 students filled out the pre-course survey, while 258 students finished the post-course survey. Prior to the course, there was a high degree of agreement (>80%) about the practical significance of eleven out of fifteen EPA statements. Five EPA statements showed a considerable rise in the role's relevance and expectation in pharmacy practice, continuing the high level of agreement from the pre-course survey. **Results:** Even before finishing the pharmacy course, the majority of students identified the EPAs as examples of what a pharmacist does. This was true independent of their level of background knowledge in the field. A credible explanation of the pharmacist's professional activities could be a good way to let others know what a benefit they provide. Pharmacy recruiting, trustworthy professional activities, online pharmacy education, and pharmacy education

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## INTRODUCTION

The pharmacy profession is experiencing a shortage of qualified candidates, therefore educational institutions are trying to attract students by emphasizing the vital role that pharmacists play in patient care. Given the nationwide decline in enrollment and applications, this has been an important priority for the majority of pharmacy schools in the last several years. Achieving this objective has been a focus of the pharmacy education community, which has worked to define the scope of practice for pharmacists. The American Association of Colleges of Pharmacy (AACP) released a set of entrustable professional activities (EPAs) in 2017 that outline the core competencies and

duties that every pharmacy school graduate should have mastered.<sup>1</sup> The EPA statements seem to represent professional standards in practice, according to recent studies on how contemporary pharmacy students and pharmacy preceptors see them. Unfortunately, nobody knows whether these claims represent the public's or patients' expectations or knowledge of pharmacists' work. The literature also lacks an examination of undergraduates' views, expectations, and understanding of the pharmacist's function within the healthcare team. In this study, undergraduates enrolled in a pharmacy elective were asked to reflect on their own preconceived

notions and experiences in order to determine whether the AACP EPA statements successfully convey the function of pharmacists to those who do not work in the field. In addition, this experiment aimed to determine whether students' views on the pharmacist's function varied depending on whether they had prior experience with the profession or were interested in a healthcare career.

## **METHODS**

### *Study Setting*

Undergraduates from the University of Minnesota who were taking the two-credit asynchronous online pharmacy orientation course PHAR 1001 were the subjects of this research. Students will get a general understanding of pharmacy via this course, which aims to cover topics such as the pharmaceutical care practice model, different pharmacy practice environments, pharmacy education, and the possibilities and difficulties that exist in the field today. The course aims to cover topics such as the pharmacist's function in healthcare, the several paths to becoming a pharmacist, the many places they may work, the challenges they face, the education they get, and the effect they have on patient care. There has been prior reporting on specifics on the format and techniques of teaching for this course.<sup>4</sup> Institutional Review Board (IRB) approval was obtained for this research at the University of Minnesota.

### **People involved**

Both the 2018–2019 academic years were used to carry out the research. Both before and after the course ended, participants were asked to fill out a survey. No participant may be a student under the age of 18.

**Contents** The fifteen assertions that make up the Core Entrustable Professional Activities for New Pharmacy Graduates and four statements that come from other health professional disciplines were used to develop a survey.<sup>1</sup> Two questions followed each sentence, asking participants to indicate whether they agreed or disagreed with the following: 1) "Should pharmacists be expected to perform this activity in most practice

settings? (e.g. community, hospital, student health clinic, etc.)?" and 2) "A pharmacist should be entrusted to \_\_\_\_." Among the four groups represented by the EPA's declarations, two were for medical school graduates, one for pediatric medical residents, and one for psychiatric medical residents.<sup>7</sup> We also wanted to know how old the students were, why they were taking the class, and how much they knew about pharmacy. Please feel free to request a copy of the whole survey.

### **Procedure**

The survey was sent via the online learning management system of the course and was conducted using Qualtrics®XM (Qualtrics, LLC, Provo, UT). The electronic link was included in the list of needed course materials as well as in reminder notices. Before and just after the course ended, participants were to fill out the survey. Anonymity was maintained throughout the survey process. Using a Chi-square test for each EPA statement question, primary data analysis compared student answers before and after the intervention. The before and post replies were deemed to have significantly different meanings when the p-value was less than 0.05. Students' motivations for taking the class were examined in the secondary data. Enrollment reasons were categorized as "interested in a health professional career" or "not interested in a health professional career" for this study. This course was offered to students who indicated an interest in "interested in a health professional career" or "interested in potentially applying to the College of Pharmacy" respectively. For students who were deemed "not interested in a health professional career," the reasons for enrolling may be attributed to "needed a 2 credit flexible elective" or other. Additionally, student answers based on their current knowledge or experiences linked to pharmacy were compared in the secondary analysis. Any student who checked out "currently or have worked as a pharmacy technician," "have a close friend or family who are pharmacist(s)" or "interacted with the pharmacist as part of my care team" was considered to have prior knowledge of pharmacy. To compare the pre-

and post-test results for these two groups of pupils, chi-square analysis was used.

### **FINDINGS**

The pre-course survey had a response rate of 95% and the post-course survey had a response rate of 97% among the 229 students who took part in the courses offered in the 2018–2019 school year. Of the students who filled out the pre-course survey, 91% were in the age bracket of 18–23. When asked why they enrolled, 69% of students said they wanted to become health professionals, while the other 5% said they required a 2-credit online elective. The majority of participants admitted to having little to no background in pharmacy (57%). The remaining individuals either had personal experience working as a pharmacy technician (3%), had dealt with pharmacists as part of their healthcare team (18%), or had a close relative or friend who was a pharmacist (22%).

Statements from the Pharmacy and the Environmental Protection Agency

To determine if students' views on the statements' applicability and expectations had changed, we examined their survey answers (Table 1). Following the completion of the course, students were much more inclined to concur that statements 1, 3, 4, and 5 (Patient Care Provider Domain) and 15 (Practice Manager Domain) were pertinent to the field of pharmacy and that these tasks should typically be carried out by pharmacists. In addition, after finishing the course, the applicability of EPA assertions 7, 10, and 13 to pharmacy practice in the Population Health Promoter Domain, Information Master Domain, and Practice Manager Domain, respectively, rose dramatically. Finally, following the training, a far larger number of participants thought that EPA statement 11 ("Information Master" domain) was a requirement in the majority of pharmacy practice contexts.

Based on students' past knowledge or exposure to pharmacy, there were no significant changes in either relevance or expectations in the secondary analysis. On the other hand, students who were thinking about a future in healthcare differed from those who weren't in a few key ways. When

asked about the applicability of EPAs 2 (Patient Care Provider Domain), 8 (Population Health Promoter Domain), and 10 (Healthcare Career Interest) to pharmacy practice, students with a healthcare career aspiration were far more likely to provide positive responses. A higher percentage of students who expressed an interest in health-related careers also said that they expected EPA 4 (Patient Care Provider Domain) to be applicable in various practice contexts and relevant to pharmacy practice. Restrict EPA Announcements In terms of how relevant they were to actual pharmacy practice, answers to all four control statements went up significantly. A notable rise in the number of individuals indicating it was expected of pharmacists in different practice contexts was seen in just two EPA control statements, 17 (Medical School Graduates) and 19 (Psychiatric Medical Residents). Regarding expectations and relevance, no significant changes were found in any of the control statements.

### **DISCUSSION**

All four control EPA statements from other health professions, along with the bulk of the pharmacy EPA statements, demonstrated importance for being relevant to pharmacy practice. As a pharmacist is anticipated to hold, almost half of all EPA remarks indicated importance. Based on the AACP EPA remarks, it seems that participants fully embrace and anticipate the pharmacist's duties. There was no discernible difference in response rates between those with extensive or present pharmacy expertise and those with less or no such background. This shows that the EPA remarks are generally well-received, even by persons with little to no understanding of medicine. When asked whether certain EPA claims were applicable in various pharmacy practice contexts, those with a strong interest in healthcare were more inclined to provide a positive response, especially in the areas of Patient Care Provider and Population Health Promoter. Curiously, the results imply that other health professionals' EPA comments can be seen as responsibilities that pharmacists are obliged to fulfill. This shows that the public at large, and maybe even

undergraduates, have high expectations of pharmacists beyond what is required by the AACP EPA guidelines. By way of illustration, EPA statements taken from the medical field indicate that pharmacists should be able to identify patients in need of immediate attention and distinguish between illnesses that can be treated at home and those that necessitate further evaluation.

Furthermore, the "Patient Care Provider" category had the greatest number of statistically significant changes between the pre- and post-course assessments. Taking all of this into account, it's clear that pharmacists have a responsibility to push for more opportunities for advanced training and broader practice, especially when it comes to direct patient care. In addition, the findings' consensus could persuade professionals to use these EPA statements in their communication efforts. When describing the pharmacist's position to those who aren't familiar with the field, EPAs might help professionals emphasize the pharmacist's importance as a team player in patient care.

#### **Limitations**

Results may not apply to the general public due to the study's small sample size and lack of demographic diversity in terms of age and education level, even though research did find some notable variances. Although the course is not officially used to attract students into the college of pharmacy, it is likely that students who choose to enroll in it had a more positive attitude of pharmacists conducting EPAs than the broader population. The community of pharmacy educators is also involved in the formulation of the EPA statements. The AACP Academic Affairs committee updated and revised the existing EPA statements in 2021, offered recommendations for their incorporation into the proposed ACPE standards and guidelines, and offered guidance on their use by pharmacy stakeholders. Reduced entrustability levels to three (Level 1: Only Allows Observation, Level 2: Requires Constant Supervision, and Level 3: Provides Intermittent Guidance) are the most notable modifications. Also, the core EPAs went down from 15 to 10, and there were less CAPE

domains as a consequence of merging the CAPE results with the EPA statements. The CAPE Educational Outcomes and EPAs were amended by the 2022–2023 AACP Academic Affairs committee to make sure they are up-to-date and relevant to new clinical and scientific breakthroughs, as well as practitioner responsibilities. The key modifications were decreasing the number of core EPAs from fifteen to thirteen, decreasing the number of domains from four to three, and substituting a description that centers on supervision for numerical degrees of entrustability.<sup>8</sup> Although these are significant updates, they do not affect how this survey was interpreted. The study aimed to identify statements that aligned with the existing knowledge and expectations of non-pharmacist participants toward pharmacists.<sup>8</sup>

#### **CONCLUSIONS**

Even among students with little to no prior understanding of pharmacy practice, the majority of students in this survey held the belief that the claims made in the AACP Core Entrustable Professional Activities for New Pharmacy Graduates accurately reflect the activities that pharmacists engage in every day. They also had higher expectations and were more likely to think that the activities were useful after finishing the course. The results of the research provide credence to the idea that EPAs may help educate the general public about the vital role that pharmacists play in patient care.

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