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RESEARCH ARTICLE

Student pharmacists' apprehensions towards psychiatry before and after an inpatient psychiatry rotation

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Abstract

Background: Student pharmacists enter Advanced Pharmacy Practice Experiences (APPEs) with varying levels of experience and self-confidence. **Objective:** To assess whether an inpatient psychiatric pharmacy rotation impacts student pharmacists' apprehensions about caring for psychiatric patients. **Method:** Student pharmacists in their final professional year completed a survey on the first and last day of an APPE in psychiatry to determine if their comfort levels regarding care for psychiatric patients changed. A total of 58 students completed the pre-survey, and 52 completed the post-survey. The same 13 questions were included in both the pre- and post-surveys. A Mann-Whitney U test was conducted on each question to evaluate differences in the median responses of participants before and after the psychiatric rotation. **Results:** Statistically significant improvements were observed in 12 out of 13 questions, indicating an increased comfort level in these scenarios. Question 13, which addressed interest in psychiatry, did not show a statistically significant change between the pre- and post-surveys. **Conclusion:** Student pharmacists' comfort levels in psychiatry improved over a five-week rotation in an inpatient psychiatric unit, with increases noted across various disease states and scenarios. Further research is needed to explore ways to enhance confidence and interest in psychiatry.

Introduction

Patients often face challenges in receiving the mental health care that they need. Barriers are multifactorial, including stigmatised beliefs, environmental factors, and affordability issues (Coombs *et al.*, 2021). Another barrier is a shortage of mental health care professionals, including psychiatrists (Miller & Peterson, 2015). Other health care providers, such as nurses, nurse practitioners, physician assistants, and pharmacists, play an important role in the care of patients with psychiatric disorders and can help improve access and care during the psychiatrist shortage. Assessing how to get students from various healthcare professions interested in behavioural health is important, as many healthcare professionals can now specialise in behavioural health. Some publications address medical student interest in psychiatry before and after a psychiatric experience (Amini *et al.*, 2013), and publications that address nursing students' fears of the psychiatric unit (Abraham *et al.*, 2018), but there are only a few studies that address student pharmacist interest in psychiatry (McLaughlin *et al.*, 2017; Cates & Wolley *et al.*, 2018; Diefenderfer *et al.*, 2020). Interest in clinical specialities can develop from different areas of pharmacy education. Pharmacy schools provide traditional classroom experiences as well as experiential education in the form of Introductory Pharmacy Practice Experiences (IPPEs), followed by

the Advanced Pharmacy Practice Experiences (APPEs) (ACPE, 2016).

Interest or lack of interest in a certain clinical area may develop based on various factors. Some challenges in psychiatry include unfamiliarity with the disease states and fears of workplace violence. Another consideration is stigmatised beliefs, as studies have shown increased social distancing in student pharmacists towards people with mental illnesses (Volmer *et al*., 2008; Seaton & Piel, 2018).

In-person rotational and experiential activities have been shown to benefit students in mental health awareness. Several studies highlight the positive impact of psychiatric training for student pharmacists. One study showed that training in medication education groups on psychiatric units increased students' self-efficacy and understanding of mental illness. Another found that psychiatric rotations improved attitudes toward schizophrenia, suicide prevention, and patient care (Cates & Woolley, 2018). A third study showed that a psychiatric rotation significantly reduced stigma toward people with psychiatric disorders (Diefenderfer *et al*., 2020). These studies emphasise the value of hands-on psychiatric experience for student pharmacists. Additionally, studies from Japan and Nigeria also found that pharmacy students generally have positive attitudes toward treating patients with mental illness. In one Japanese study, stigmatisation of patients decreased from the first to the third year of pharmacy school (Ono *et al*., 2013; Cates *et al*., 2015; Eze *et al*., 2021).

Student pharmacists may feel uncomfortable with psychiatric care due to the increasing rates of workplace violence in healthcare. The probability and severity of workplace violence in healthcare are higher in psychiatric care compared to other areas of medicine (Arnetz *et al*., 2014). This may be partially explained by patient factors such as intoxication, psychosis, paranoia, and delirium. Additionally, workplace violence in hospitals is twice as likely as compared to ambulatory care services, with psychiatric healthcare workers having ten times the risk of injury (Huckenpahler & Gold, 2022). Pharmacists are also at risk for workplace violence, with nearly half of pharmacists being affected by violence (Bhagavathula *et al*., 2023).

The objective and justification for completing this study were to see if an inpatient psychiatric pharmacy rotation changed student pharmacists' apprehensions towards caring for those with psychiatric illnesses and increased interest in working in a psychiatric setting. Apprehensions may be due to various reasons, such as fear of workplace violence or unfamiliarity with directly managing illnesses such as bipolar disorder or schizophrenia. The central hypothesis was that student pharmacists would have apprehensions towards the psychiatric unit and talking with psychiatric patients at the beginning of the rotation, and minimal apprehensions at the end of the experience. A secondary hypothesis was that student pharmacists may have more interest in psychiatry as a career choice at the end of the rotation.

Methods

In this observational study, a 13-question survey was sent to student pharmacists on the first and last day of a five-week psychiatry APPE rotation. Three sites were included in this trial, all of which offer an inpatient psychiatric five-week advanced pharmacy practice experience (APPE). The three hospitals offering psychiatric APPE rotations were large academic hospitals with inpatient psychiatric units varying in size from 24 to 116 beds. The hospitals had involuntary and voluntary patients presenting for a multitude of psychiatric illnesses. Students who took the rotation were in their fourth professional year of pharmacy school and had already completed in-class education on psychiatry during their third professional year of pharmacy school. Students ranked their preferences for rotations, but may have received rotations that they did not rank. Students could be scheduled to take a psychiatric rotation at any point during their fourth year.

APPE rotations vary based on site and preceptor. The rotations assessed in this trial have some commonalities, such as direct patient counselling responsibilities, student-led medication education groups, interdisciplinary rounds, and projects such as topic discussions and patient case presentations. Additional responsibilities included medication reconciliation and discharge medication counselling. All these activities helped expose learners to psychiatric educational content and direct patient care.

The survey was available between October 2021 and April 2023. The 13-question survey included qualitative questions that used a Likert scale to give quantitative value to the questions. The first 12 questions assessed the students' level of comfort in various patient scenarios, such as entering the psychiatric unit, talking to patients with depression, suicidality, an assaultive history, bipolar disorder, and schizophrenia. Question 13 addressed interest in pursuing a career in psychiatry. The research instrument used was a novel, unvalidated survey created to provide a broad overview of psychiatric

care. The authors designed the survey to analyse psychiatric APPE rotations within the university. The survey questions can be found below. The answer choices for the questions were strongly disagree, disagree, neutral, agree, or strongly agree.

Table I: Pre- and post-student pharmacist survey

Question number:	Survey question:
1	I am uncomfortable entering an inpatient psychiatric unit.
2	I am uncomfortable entering a patient's room in an inpatient psychiatry unit.
3	I am uncomfortable discussing a patient's medication regimen with them in a psychiatric clinical setting.
4	I am worried about being assaulted in the psychiatric unit.
5	I am uncomfortable talking to a suicidal patient.
6	I am uncomfortable talking to a patient with major depressive disorder.
7	I am uncomfortable talking to a patient with schizophrenia.
8	I am uncomfortable talking to a patient with bipolar disorder.
9	I am uncomfortable talking to a patient with an assaultive history.
10	I am uncomfortable talking to a patient with a substance use disorder.
11	I am uncomfortable talking to most patients in the psychiatric unit.
12	I am uncomfortable talking to most patients, even those outside of the psychiatric unit.
13	I am considering a career in psychiatry.

Participation in the survey was voluntary, anonymous, and not required to complete the rotation, and students could anonymously opt out. Surveys were completed using Qualtrics XM® software. Student pharmacists were provided with an electronic link to the survey before entering the psychiatric unit and then on the last day of the APPE rotation. The university's institutional review board (IRB) approved the methods, including the survey (IRB approval: Pro2021001096).

Participants' responses to the 5-point Likert scale survey were treated as continuous variables. For each question, a Mann-Whitney U test was conducted to test the difference in the median of participants' responses before and after the psychiatric rotation. Median values were used to account for non-normal distribution. Values were assigned to the different answer choices to calculate the median. "*Strongly disagree*" was assigned one, "*disagree*" was assigned two, "*neutral*" was assigned three, "*agree*" was assigned four, and "*strongly agree*" was assigned five. The authors calculated that a sample of 42 participants would provide the study with 90% power (at a two-sided alpha error of 0.05).

Results:

A total of 58 students completed the pre-survey, and 52 completed the post-survey. Six students completed the pre-survey but did not complete the post-survey. All completed pre- and post-surveys were included in the results analysis. Student demographics such as age, gender, and race/ethnicity were not collected in this study. Statistically significant improvements were seen in twelve out of thirteen questions, indicating a higher level of comfort in these scenarios ($p < 0.005$). The score for question 13, which assessed how strongly students were considering a career in psychiatry, improved from pre- to post-rotation, but the change was not statistically significant ($p = 0.0913$). The relationship between the psychiatric rotation and the survey results is shown in Table II.

Table II: Analysis results for the pre- and post-surveys

Questions	Pre-Survey, median	Post-Survey, median	*p*-value
Q1	2	1	< 0.0001
Q2	3	2	0.0007
Q3	3	2	< 0.0001
Q4	2	2	0.0059
Q5	3	2	< 0.0001
Q6	2	1	< 0.0001
Q7	3	2	< 0.0001
Q8	3	1.5	< 0.0001
Q9	3	3	0.0037
Q10	2	1	< 0.0001
Q11	2	1	< 0.0001
Q12	2	1	0.0022
Q13	3	3	0.0913

The psychiatric rotation significantly affects participants' responses to the first 12 questions, with *p*-values < 0.05. However, there was no significant difference between participants' responses to question 13 before and after the psychiatric rotation (Table III).

Table III: Pre- and post-survey responses

Questions	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-	Pre-	Post-
Q1*	4	31	30	16	15	3	9	1	0	0
Q2	2	12	19	22	20	10	15	8	2	0
Q3	3	25	22	24	18	2	15	1	0	0
Q4	4	11	26	27	15	8	9	6	4	0
Q5	5	19	17	21	15	10	18	2	3	0
Q6	9	35	29	17	13	0	7	0	0	0
Q7	4	18	17	25	16	7	18	2	3	0
Q8	5	26	22	23	14	2	14	1	3	0
Q9	1	6	14	15	15	19	22	12	6	0
Q10	11	31	26	19	15	1	4	1	2	0
Q11	7	28	26	21	15	3	8	0	2	0
Q12	21	32	24	17	5	3	6	0	2	0
Q13	4	2	12	6	27	25	13	15	2	4

*51/52 survey participants responded to the post-survey

Discussion

A five-week experiential inpatient psychiatric experience improved pharmacy students' comfort level in managing multiple psychiatric disease states and situations. Increases in comfort level were broadly seen, indicating that many disease states were likely encountered frequently throughout the rotation, though increased interest in psychiatry as a career was not seen. These results coincide with studies conducted in medical schools. A study by Khajeddin and colleagues (2012) addressed medical students' attitudes and interest in psychiatry before and after a psychiatric experience. The study showed that students' attitudes towards psychiatry improved, but did not show an increase in career intention toward psychiatry, which is

similar to the survey findings in this trial. Another study of medical students in China found similar results, with improvements in attitudes but limited change in career choice after a clerkship in psychiatry. Students in this trial did not have prior psychiatric training, which differs from this trial (Shen *et al*., 2014). This study adds to the literature by addressing the interests of student pharmacists. The role of clinical pharmacists continues to evolve, and finding ways to interest students in the psychiatric field is important.

Another important consideration is fear of being assaulted in patient care activities. Question 4 of the survey asked students, "*I am worried about being assaulted in the psychiatric unit*," and the results showed a significant change after the completion of the psychiatric rotation. This shift suggests that exposure to real-world psychiatric environments, where students gain firsthand experience, may alleviate some of the initial fears related to workplace violence. Addressing concerns about workplace violence is critically important in the healthcare setting, as such fears can be a significant barrier, potentially discouraging students from pursuing rotations or careers in fields like psychiatry.

Workplace violence in healthcare settings is a well-documented issue that can have a serious impact on both employee well-being and career choices. A comprehensive meta-analysis of 253 studies found that 61.9% of healthcare workers report experiencing some form of workplace violence, with 24.4% of those incidents involving physical violence (Liu *et al*., 2019). The prevalence of these incidents may understandably influence students' perceptions of psychiatric settings and could deter them from considering psychiatric care as a potential career path. Healthcare institutions need to implement effective preventive measures to address these challenges and reduce the impact of workplace violence on students' career decisions. These measures could include comprehensive training programmes to help staff recognise and de-escalate potentially violent situations, and the adoption of safety protocols and technologies that ensure the protection of healthcare workers. By creating safer and more supportive environments, it may be possible to increase student interest in psychiatry and ensure a more robust future workforce for this essential area of healthcare.

Potential variables that may affect survey results are the students' baseline interest in clinical care and psychiatry, previous clinical work and inpatient counselling experience, knowledge base, and confidence. The project's goal was to obtain students' overview of comfort and interest in psychiatry and to see if interest increased in working in psychiatry following the APPE rotation.

A strength of the trial was that it was conducted at three hospitals within three different health systems with three primary preceptors. This shows that the benefit was not specifically due to a certain health system or preceptor, and the benefits of a psychiatric rotation may broadly apply. Another strength was that the sample size was large enough to show statistical significance. Finally, the survey broadly asked about psychiatric conditions and histories, such as comfort in talking to patients with suicidality, major depressive disorder, bipolar disorder, schizophrenia, and patients with an assaultive history. These diagnoses are commonly seen within inpatient psychiatric units.

This information may be generalisable to other schools of pharmacy, as multiple health systems and preceptors were included in the trial. The variability between health systems and precepting styles contributes to the potential generalisability. Additionally, all pharmacy schools require APPE rotations for graduation. New Jersey, where this study was conducted, requires 1440 APPE hours to sit for the North American Pharmacist Licensure Examination (NAPLEX). Most states have similar amounts of required hours, further contributing to the generalisability. This study showed that exposure to a psychiatric unit may improve comfort level in treating patients with various mental illnesses, but did not show an increase in interest in having a career in psychiatry. Further studies are needed to determine strategies to increase student pharmacists' interest in working in the field of psychiatry following graduation.

Limitations:

A potential weakness of the trial is selection bias, as students taking a psychiatric rotation may have more interest or desire to work with psychiatric patients. That being said, many students select rotations based on location and other factors. Interest level may not be a primary reason the rotation was selected. Another weakness of the trial is that not every student completed the pre- and/or post-surveys, leading to 58 pre-surveys and 52 post-surveys being included in the analysis. Due to the trial's anonymous and voluntary nature, students with certain beliefs may have completed the surveys more frequently. Additionally, the study used a non-validated novel survey, so the full impact of the information is not known.

Conclusion

In conclusion, student pharmacists had apprehensions towards the psychiatric unit and talking with psychiatric patients at the beginning of their acute care inpatient

psychiatry rotation, which improved across 12 domains by the end of the five-week experience. A psychiatric rotation may also increase student pharmacists' interest in pursuing psychiatric pharmacy as a career, though this finding was not statistically significant. Further research is needed to explore effective strategies for boosting pharmacy students' confidence and interest in psychiatry.

Conflict of interest

The authors declare no conflict of interest.

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