

# Assessment of pharmacy student attitudes and beliefs toward patients with mental illnesses on inpatient psychiatric units

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## Abstract

**Introduction:** People with mental illness continue to face stigma, despite these illnesses being common. Previous studies have demonstrated reduced stigma in pharmacy students after various exposures and education, although results have been mixed. The primary objective of this study was to evaluate the effects of an advanced pharmacy practice experience (APPE) in psychiatric pharmacy on students' stigma toward patients with mental illness using the Opening Minds Stigma Scale for Healthcare Providers (OMS-HC) at 2 psychiatric hospitals.

**Methods:** This was a prospective, multicenter survey study of pharmacy students on an APPE rotation at an inpatient psychiatric hospital conducted during 3 academic years. Prior to starting and upon completion of their rotation, participants completed the OMS-HC and provided demographic and rotation information.

**Results:** A total of 26 students participated in the prerotation survey, with 88.5% (n=23) completing the postrotation survey. The primary outcome showed a significant decrease in total OMS-HC score (Z=-2.376, P=.017), indicating a decreased level of stigma at rotation completion. Analysis of the OMS-HC subscales for attitudes toward people with mental illness and attitudes toward self-disclosure of a mental illness also yielded significant decreases (Z=-2.425, P=.015; Z=-2.462, P=.014, respectively).

**Discussion:** This study showed that APPE rotations at inpatient psychiatric hospitals may help reduce stigma among pharmacy students. Pharmacy schools should consider increasing access to and encouraging completion of psychiatric pharmacy rotations to help reduce stigma prior to graduation.

**Keywords:** pharmacy student, stigma, mental health, advanced pharmacy practice experience

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## Background

Mental illness affects approximately 18.9% of the US adult population, with 4.5% of adults experiencing a serious

mental illness.<sup>1</sup> Despite this wide prevalence, significant stigma against persons with mental illnesses remains. The World Health Organization states that stigmatization and discrimination often lead to violations of or reduced human rights for persons with mental illness, and in some cases neglectful, harmful, or degrading treatment.<sup>2</sup> Stigma surrounding mental illness may also negatively affect care provided by a pharmacist.<sup>3-7</sup> Community pharmacists have reported that they were more uncomfortable discussing symptoms, had reduced follow-up monitoring, and were less likely to provide drug-related information to patients with mental illness compared with patients with physical health conditions.<sup>3,4,7</sup> Lack of

education was identified as a significant barrier to improving these services.

As future health care professionals, pharmacy students will inevitably serve patients with mental illness regardless of practice setting. However, several studies have shown that pharmacy students demonstrate stigma and negative attitudes toward these patients, including increased social distance (decreased willingness to engage in various social interactions) and misconceptions.<sup>8-11</sup> Because stigma can negatively impact patient care, it is important to consider methods of decreasing stigma during pharmacy school. Although traditional didactic education has not reduced stigma in pharmacy students,<sup>9,12</sup> lower social distance and increased positive attitudes have been seen in students who had previously been employed in a pharmacy, had personal experience with mental illness, or were members of a mental health–focused college organization.<sup>11,13</sup> Brief workshops focusing on direct and indirect contact with mental health consumers, including in-person discussions, viewing filmed interviews, or participating in role-playing, showed a positive impact on student attitudes and stigma.<sup>14-16</sup>

Elective courses in mental health are available in some curriculums. Activities used in these elective courses vary but have included training in motivational interviewing, working with peer support specialists, watching movies and/or patient videos, using a hallucination simulator, visiting various psychiatric settings, and interviewing psychiatric patients.<sup>17-19</sup> In all cases it was found that the elective psychiatric pharmacy course helped to improve pharmacy student viewpoints of patients with mental illness. Contact-based education, such as leading a medication group or attending an interactive class session including a person with a mental illness, has been shown to decrease stigma scores.<sup>20,21</sup>

Data on changes in stigmatization after psychiatric clinical rotations are mixed.<sup>12,22,23</sup> An attitudinal survey of pharmacy students at the beginning and end of their curriculum did not see a difference in social distance scores when comparing students who had and had not completed a psychiatric clinical rotation.<sup>12</sup> One study<sup>22</sup> measured attitudes at the beginning and end of clinical rotations through a social distance scale. The study found that students had positive attitudes toward patients with mental illness both before and after completing clinical rotations. Another study<sup>23</sup> examined pharmacy student attitudes toward patients with mental illness directly before and after completing a 5-week elective acute care psychiatric clinical rotation. Postrotation scores showed significant reduction in stigmatization of patients with schizophrenia, provision of pharmaceutical care to patients with schizophrenia and depression, and attitudes toward suicide prevention. No significant changes were

seen for the dangerousness, social distance, or general mental illness and depression stigmatization scales.

There is a paucity of current information regarding changes in stigmatizing beliefs after prolonged contact with patients during a psychiatric pharmacy clinical rotation. Therefore, the aim of this study was to provide additional analysis of the effects of a clinical psychiatric rotation on pharmacy students' stigma toward patients with mental illness.

## Methods

This was a prospective, multicenter survey study consisting of 27 consenting fourth-year pharmacy students completing an Advanced Pharmacy Practice Experience (APPE) at 2 inpatient psychiatric hospitals between August 1, 2016, and November 30, 2018. The research was approved by the University of Missouri–Kansas City Institutional Review Board.

On the first day of their rotation, students met with a study investigator who was not their preceptor. The study was explained, and willing participants provided informed consent. Participants were e-mailed a link to complete the prerotation survey that included the Opening Minds Stigma Scale for Healthcare Providers (OMS-HC) and demographic questions. The OMS-HC is a self-report questionnaire evaluating stigma and attitudes held by health care providers toward people with mental illness.<sup>24</sup> The provider is asked to rate a series of 20 statements from strongly agree to strongly disagree.<sup>24</sup> Each item is scored 1 through 5, with 5 indicating the most stigmatizing response. Total scores range from 20 to 100, with 100 being the most stigmatizing.<sup>24</sup> All students were secluded from their preceptor for approximately 20 minutes to complete the survey and to maintain blinding from the preceptor regarding participation. After this time period, students were provided with their APPE and facility orientation. Of the 4 study investigators, 3 were preceptors working at 1 of the 2 study hospitals, covering a separate patient care unit, including forensics, extended care, and acute care. During their rotation experience, students were only placed at 1 hospital and on 1 patient care unit but may have participated in medication groups at either hospital or on a different patient care unit than where their primary rotation responsibilities occurred. The acute care unit was located at one hospital, whereas the extended care and forensic units were located at the other hospital. At the end of the 1- or 2-month rotation, participants were e-mailed a link to complete a postrotation survey. Included in the postrotation survey was an optional reflection where participants were asked to “Provide a small reflection on which part of the rotation was most helpful for your professional growth.” Partici-

pants were contacted via e-mail one additional time if they had not completed the postrotation survey.

Study data were collected and managed using REDCap (Research Electronic Data Capture; Vanderbilt University Medical Center, Nashville, TN) electronic data capture tools hosted at University of Missouri–Kansas City.<sup>25</sup> REDCap is a secure, web-based application designed to support data capture for research studies.

The primary objective was to compare total OMS-HC scores before and after completing a 1- or 2-month APPE. Planned secondary analyses included differences in OMS-HC subscale scores, impact of primary unit assigned, if the student had a previous psychiatric pharmacy experience, whether the student requested the rotation, and activities participated in during the experience. Post hoc analyses included whether scores varied based on self-reported gender, age groups, or if the student had personally known someone with a mental illness. Statistical analysis was conducted using Wilcoxon signed rank test for the primary outcome, the assessment of the subscale scores, and differences in age groups, whereas Kruskal-Wallis *H* test and Mann-Whitney *U* test were used for all other secondary outcome measures.

## Results

A total of 27 students consented to participate in the study, and 26 (96.4%) of those students completed the prerotation survey. Baseline demographic information is displayed in Table 1. The postrotation survey was completed by 23 students (88.5% of those who completed the prerotation survey). Participation in rotation activities was reported as follows: community meeting (general meeting held on some units with the patients to start their day), 10 (43.5%); treatment team, 23 (100%); medication group, 18 (78.3%); individual patient counseling, 19 (82.6%); discharge medication counseling, 17 (73.9%); and on-unit socialization (playing cards, assisting with group projects, etc), 8 (34.8%) students.

Total OMS-HC score significantly decreased ( $Z = -2.376$ ,  $P = .017$ ), indicating a decreased level of stigma at the completion of the APPE rotation. Significant reductions were also seen in the subscales for attitudes toward people with mental illness ( $Z = -2.425$ ,  $P = .015$ ) and attitudes toward self-disclosure of a mental illness ( $Z = -2.462$ ,  $P = .014$ ).

Secondary analyses for previously completing a psychiatric pharmacy clinical rotation, amount of unit activities participated in, self-reported gender, and age were all not significantly different. Statistical tests were not able to be run on the variable of whether the rotation was requested

**TABLE 1: Baseline prerotation demographic information (n = 26)**

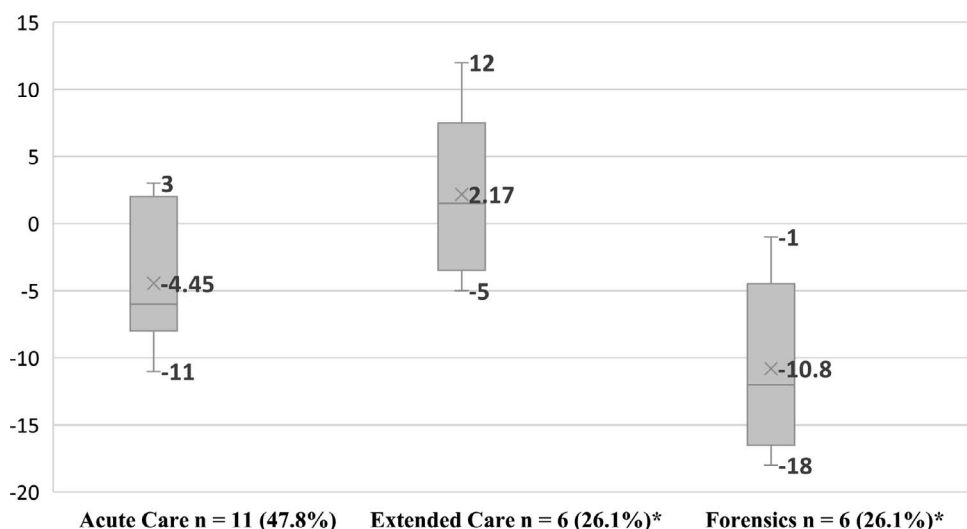
Characteristic	Percent (n)
Self-reported gender	
Male	42.3 (11)
Female	57.7 (15)
Age, y	
21-25	53.9 (14)
26-30	42.3 (11)
31-35	3.8 (1)
Requested an advanced pharmacy practice experience in psychiatric pharmacy	
Yes	96.2 (25)
No	3.8 (1)
Previous psychiatric pharmacy clinical rotation	
Yes	19.2 (5)
No	80.8 (21)
Had or personally known someone with a mental illness	
Yes	88.5 (23)
No	11.5 (3)

because the overwhelming majority of students had requested the experience, which resulted in unequal group sizes. There were only 2 students during the study period who experienced a 2-month rotation, so there was no analysis of scores comparing these students to the 1-month rotation group because of unequal group sizes. There was a significant difference in OMS-HC scores between patient care units ( $P = .029$ ). Students assigned to the forensic unit had a larger reduction in stigma than those assigned to the extended care unit (adjusted significance  $P = .028$ ; Figure). There were no significant differences between the other units.

Although the primary outcome was significant for decreased scores, there were 7 students (30.4%) who had an increase in total score at the end of their APPE rotation. Of the 23 students completing the postrotation survey, 13 (56.5%) filled out the optional reflection. A total of 7 of these students (53.8%) identified participating in treatment teams and/or interdisciplinary collaboration as most helpful, whereas other students identified patient interactions and counseling opportunities as beneficial for their professional growth. Specific quotes from students are listed in Table 2.

## Discussion

Completion of an inpatient psychiatric APPE decreased stigma overall in pharmacy students. Activities were varied at both hospitals and included one-on-one patient interactions and team-based interdisciplinary meetings as



**FIGURE:** Changes in Opening Minds Stigma Scale for Healthcare Providers per patient care unit (\* $P = .029$ )

well as time for working on projects and presentations. This study adds to the body of evidence that shows positive effects on decreasing stigma by exposing students to a psychiatric clinical rotation.

Despite the decreased stigma overall, there were several students who experienced an increase in stigma after

completion of their rotation. No immediate trends could be found to determine why scores increased in these students because they are evenly split on self-reported gender, assigned unit, age, and number of activities in which they engaged. However, the students with the 3 largest increases in stigma scores had their APPE rotation on the extended care unit (increases of 5, 6, and 12 points), which tended to have more treatment-refractory patients. This unit also had the smallest decrease in scores compared with the other 2 units. Additional studies with a larger sample size would be necessary to determine whether an extended care setting leads to increased levels of stigma and what factors contribute to these increases.

**TABLE 2:** Student responses to the optional reflection

Student No.	Response
1	“The part of the rotation that allowed me to experience the most growth was the counseling opportunities I had with patients. Each patient was unique, which provided great learning opportunities to allow me to expand my communication skills with patients.”
2	“I think that interacting with patients was the most helpful on this rotation. Talking with patients helped me to better understand why they were non-adherent to their medications, with some reason[s] including affordability, side effects, and lack of knowledge about their medications.”
3	“This entire rotation was helpful to not only my professional growth, but my growth as a person. I learned a lot from being around the patients, because this is a side that many people don’t get to see. I enjoyed seeing patients progress from very psychotic on admission to a much lesser degree after some time spent on the unit with medications and therapy, etc.”
4	“All of the aspects I participated in were useful in helping me get a good insight to mental illnesses and their treatments [in] different ways, much more than what I’d imagined and learnt in the classroom.”
5	“The unique patient population helped me become much better at direct patient interaction.”

Limitations of this study include the small sample size with smaller subgroups exposed to each type of inpatient unit. There was no way to quantify the amount of direct patient interaction or where the interactions occurred and what sort of impact this had on OMS-HC scores. The impact on stigma of experiences occurring on a different unit than that to which they were primarily assigned, such as medication group, is unknown. These experiences likely did not exceed 4 hours in duration, and the impact may be limited, but it should be investigated or controlled for in future studies. A variety of measures have been used to evaluate pharmacy student attitudes, whereas our study only examined stigma. Because of the fact that most students requested the experience, stigma changes were not able to be assessed in students who did not request the rotation. Finally, there was no way to assess specific events (such as differing levels of patient agitation on the unit, extremely intrusive patients, decreased number of accepted interventions from physicians, etc) that may have influenced the responses on the postrotation survey.

## Conclusion

Future pharmacists may have stigma toward patients with mental illnesses, which could impact provided care. The APPE rotations at these two inpatient facilities decreased stigma held by fourth-year pharmacy students against patients with mental illnesses. Differences may be seen in reduction in stigma based on the type of psychiatric pharmacy rotation experience and patient population. Participation in interdisciplinary treatment team was recognized by pharmacy students as helpful for their professional growth. Pharmacy schools should consider increasing access to and encouraging completion of psychiatric pharmacy experiences to help reduce stigma prior to graduation. Additional research may be needed to determine whether exposure to a treatment-refractory population results in increased levels of stigma.

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