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Longitudinal Assessment of Pharmacy Student Attitudes Towards Mental Illness

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Abstract

Background: Mental health stigma in providers is one of the greatest barriers in effective care in psychiatric patients. When patients feel stigma towards them, they have lower levels of self-esteem and lower medication adherence. When training healthcare providers, specifically pharmacists, it is important to assess the effectiveness of training at reducing stigma levels. Previous studies have shown that didactic teaching does not significantly decrease stigma in pharmacy students. However, other studies have shown that students who participated in psychiatric rotations have less stigma surrounding mental health following the rotation. Currently there are no studies that assess the same students' stigma following both didactic teaching and clinical rotation teaching.

Objectives: The objective of this study is to assess the degree of mental health stigma among pharmacy students in a longitudinal fashion and identify the degree to which different teaching modalities impact stigma in the same individual student.

Methods: Pharmacy students will take a survey up to four times during their time in pharmacy school to assess how their stigma levels towards mental health change due to different types of teaching. The survey will ask them to express their opinions about mental illness through multiple choice, ranking, and "slider" type questions. Questions will be both from validated scales as well as created by the researchers. In the first phase of the trial, they will take it pre- and post-didactic teaching of a psychiatric module class. In the second phase, students will take the same survey pre- and post-clinical rotations of psychiatric pharmacy and internal medicine.

Outcomes: How much stigma was reduced in each student following different modes of teaching will be reported. Data will be reviewed to potentially modify pharmacy schools' curriculum to better lower mental health stigma levels in pharmacy students.

Introduction

Mental health stigma among medical professionals is one of the most significant barriers to effective care in psychiatric patients. When patients detect stigmatizing attitudes, they may consequently develop lower levels of self-esteem and lower medication adherence.[1] In addition, patients with mental illnesses are often undertreated for physical conditions.[2] Healthcare professionals may not have adequate training in the management of psychiatric disorders, and often associate physical symptoms with a known mental illness diagnosis, even when the two have no evidence they are connected.[2] Patients with mental illnesses consistently experience lower health outcomes compared with patients with physical diagnoses.[2] Patients may not seek care because they anticipate being treated negatively by their healthcare professionals.[2] Patients who do seek treatment may not receive optimal disease state management due to professionals' lack of understanding of the unique needs of a patient with mental illness. According to the World Health Organization, a healthcare professional's stigma or discrimination can influence patient care and may include a violation or reduction of the patient's human rights.[1] For example, all humans have a right to "inherent dignity," which protects an individual's rights to make their own decision, and those decisions do not take away their worth as a human being.[3] In healthcare, the patient's right to autonomy might be violated when healthcare providers do not use people-first language. When terms like "addict" are used, as opposed to "a person with a substance use

disorder," the patient is stripped of his or her right to be seen as a person instead of labeled only by their condition.[3] It is important to assess the effectiveness of training on levels of stigma in future healthcare professionals so that clinicians are more prepared to treat patients with mental health and/or substance use disorders.

Recent data has shown that healthcare professionals have demonstrated varying levels of mental health stigma.[4] For example, a 2000 literature search looked at studies that reported nurses' perception of substance use disorder. Many found that nurses had negative views of patients receiving treatment. One 1964 study that was looked at found that about half of the nurses considered alcohol use disorder treatment "discouraging and hopeless."[5] In addition, healthcare professionals may unconsciously attempt to distance themselves from patients with mental illness or may view those patients as a lower status level than those without mental illness.[6] Pharmacists are in many different care settings and regularly interact with patients with mental illnesses. In a community pharmacy setting, patients with mental illness are less likely to receive adequate care than those with a physical illness. For example, community pharmacists have reported they are less likely to discuss symptoms of the psychiatric disorder with patients or provide resources or follow up care compared with patients receiving treatment for a physical illness.[1,7] An increased level of stigma exists among pharmacy students as well. One study demonstrated that pharmacy students were more likely to increase their social distance from people with mental illness.[4] Examples of increased social distance looked at in the study were unwillingness to share a living space with someone with mental illness, not recommending someone for a job because he or she was previously hospitalized with a severe mental illness, or not introducing someone with a mental illness to his or her family member or friend.[4] When these pharmacy students enter the workforce, they could still hold onto this stigma and not

engage with patients with mental illness. Another study found when pharmacy students were surveyed about their attitudes towards patients with mental illness, many students thought patients with schizophrenia and severe depression are difficult to talk to. A negative attitude towards patients with mental illness might result in the future patients of these students not receiving adequate counseling regarding their prescription.[8]

Previous studies aimed as assessing levels of mental health stigma among pharmacy students have tended to focus on a single teaching modality within a pharmacy curriculum and its ability to reduce stigma. The focus of these studies include assessment of stigma levels before and after a didactic class, before and after an elective psychiatry advanced practice pharmacy experience (APPE), or how student engagement influences stigma level.[1,2,4] Some studies have shown that didactic teaching does not significantly decrease stigma in pharmacy students.[2] However, other studies have shown that students who participated in psychiatric rotations have less stigma surrounding mental health following the rotation.[1] While curriculums vary among pharmacy schools, didactic learning might be the only form of psychiatric training many students receive. However, didactic learning may not be adequate preparation to treat patients with mental illness. Additional interventions, such as mental health first aid, psychiatric elective classes, or student interviews with patients with mental illness have been found to reduce stigma in pharmacy students but may not be offered at all pharmacy schools.[4]

Currently there are no studies that assess the same students' stigma levels following both didactic teaching and hands-on teaching. This study will longitudinally assess the same students throughout their time in pharmacy school to see how these different teaching methods impact stigma levels. Our hypothesis is that hands-on experiences, specifically a four-week clinical rotation in the psychiatric setting, will decrease student stigma more than the didactic psychiatry

course. The objective of this study is to assess mental health stigma levels in pharmacy students at several time points during their academic careers at the University of Connecticut School of Pharmacy. The impact of both didactic teaching via a five-credit psychiatric pharmacy course as well as the impact of an elective psychiatry APPE rotation will be assessed with regards to student stigma. Identifying the teaching strategies that are most effective at reducing mental health stigma in pharmacy students can be used to create a common curriculum that can be implemented at all pharmacy schools. A change to curriculums may help to decrease stigma levels in future pharmacists in all areas of the country and create better health outcomes for mental health patients.

Methods

The study was a longitudinal study that included an assessment of stigma levels following both didactic teaching and experiential teaching among students starting in their second professional year (P2) of pharmacy school at the University of Connecticut during the fall 2021 semester. This study was approved by the IRB at the University of Connecticut in March 2021. The first part of the study took place from August to December 2021. Before the beginning of the fall semester, students in the psychiatric pharmacy course were asked to view a 3-minute video which included a description of the study. Students interested in participating were asked to complete an online survey using testing methods to evaluate mental health stigma. The anonymous electronic survey link was provided to the students via Blackboard and students' school emails. The first part of the survey provided the students with the informed consent form; if the student indicated the desire to participate in the study and provided consent, the survey

could then be opened. Participants were asked to complete the survey within a 4-week period. Students received two "reminder" emails during that 4-week period. Students were also verbally reminded in class. The survey was created using QualtricsXM. It consisted of multiple choice, ranking, and "slider" type questions (See Figure 1). The Opening Minds Stigma Scale for Health Providers (OMS-HC) was included in the survey. The OMS-HC scale is a validated self-reported questionnaire that can be used to evaluate mental health stigma in healthcare professionals.[1,2] The OMS-HC scale has been used in similar studies to access changes in stigma over a period time, such as before and after a didactic psychiatric course, or before and after a psychiatric advanced practice pharmacy experience (APPE).[1,2] Participants were able to skip any questions that they did not want to answer. Students were then asked to complete the same survey again at the end of the semester to assess changes in stigma levels following completion of the five-credit didactic course. Demographic information was also collected (see Table 1). Participants were included if they were current P2 students and enrolled in the required five-credit pharmacy psychiatry course. Students were excluded from the study if they did not complete the psychiatry class for any reason, such as withdrawing from the class or taking an academic leave of absence.

The second part of this study will occur when the same cohort of students are participating in APPE rotations from June 2023 to April 2024. All students who were previously included during the didactic section and who plan to complete their APPE rotations during the 2023-2024 school year will be eligible to participate in the APPE section of the study.. Students will be separated into two groups: the internal medicine/control group and the psychiatry rotation group. All students at the University of Connecticut School of Pharmacy are required to compete an internal medicine (also known as general medicine) rotation. Students also complete five elective rotations during the year. Students can request a psychiatry rotation as an elective, or

they might be randomly assigned to one based on elective availability. Students who are not completing a psychiatry rotation will be assigned to the internal medicine group, and those who are completing a psychiatry rotation will be assigned to the psychiatry rotation group. Students in the internal medicine group will be assessed during faculty-led rotations. Students who have non-faculty internal medicine preceptors or are not taking a psychiatry elective will be excluded from the study. Students who are in the internal medicine group will compete the study survey immediately before and after their internal medicine rotation; students who are in the psychiatry group will complete the survey immediately before and after their psychiatry rotation. APPE schedules are subject to change throughout the year. Students can switch from the internal medicine group to the psychiatry group if their schedule changes to add a psychiatry rotation, given they have not completed their internal medicine rotation yet. If they have completed their internal medicine rotation, they will stay in the internal medicine group, and the surveys they completed corresponding to that rotation will be used for analysis. Students can switch from the psychiatry group to the internal medicine group if their schedule changes to remove a psychiatry rotation, given they have not completed their internal medicine rotation yet. If they have completed their internal medicine rotation, they will be excluded from the study because they did not complete surveys with their internal medicine study.

Results

The survey was open to 62 students. For the didactic section, 32 students consented and filled out the pre-survey. 26 students consented and filled out the post-survey. Four of the post surveys were not included in the statistical analysis because their unique participant code did not

match a code provided in in the pre-survey. To account for human error, two unique participant codes were considered a match if they had two or less character differences between the pre-survey and post-survey. The final number of participants included in the statistical analysis of the didactic section was 22. Most subjects were white females between the ages of 20 and 21. The following OMS-HC questions had a change in means of 0.5 or more towards reduced stigma:

- I would see myself as weak if I had a mental illness and could not fix it myself.
- I would be reluctant to seek help if I had a mental illness.
- There is little I can do to help people with mental illness.
- More than half of people with mental illness don't try hard enough to get better.

Students reported feeling more comfortable treating patients with major depressive disorder, schizophrenia, and opioid use disorder with means increasing from 36.1, 44.5, and 41.3 to 50.3, 53.6, and 51.9 respectively. Full results are reported in tables 1 and 2 in the appendixes.

Discussion and Limitations

The major limitation of this study was sample size. The study was open to 62 students, already a small sample size, and the response rate was lower than anticipated. The study would be stronger if expanded to other pharmacy schools to increase sample size or looked at more than one class of students. We were unable to recruit more students at the University of Connecticut due to the pharmacy school curriculum, which has all students take the psychiatry module in their second professional, unless there are some extraordinary circumstances that would prevent this.

Another limitation to the study was due to human error with the identifiers. It was assumed that students struggled to correctly enter their identifiers, because there were many mismatches between the pre- and post-survey. If we only analyzed complete matches between the pre- and post-survey, there would only be data from eight participants. To increase the sample size, we decided to account for human error, and considered two surveys a match if there were two or less character differences in the identifiers. The mismatch in identifiers decreases the validity of the study because there is no way to tell if an identifier with any character differences is in fact the same person.

Conclusion

The study is the first of its kind acting as a longitudinal study. The sample size was a major limitation that limits the validity of this study. Future studies can expand upon this work to study a widespread sample. Future directions of this study include expanding to other pharmacy schools or more classes within the UConn School of Pharmacy.

Appendix

Figure 1: Survey Questions

Section 1: Demographic Questions

What is your current year in pharmacy school?

With which gender do you identify?

What is your current age in years?

With which race do you identify?

Please indicate if you:

- Have a close friend with a mental illness
- Have a family member with a mental illness
- Have a mental illness yourself
- None of the above

Please indicate if you are a current member of any of the pharmacy organizations listed below, or if you are a current student chapter member.

- CPNP
- AphA
- ASHP
- AAPS
- ACCP
- Other
- None of the above

Please rank the following types of APPE clinical rotations in order from the one you are most likely to request (#1) to the rotation you are least likely to request (#10). If you have already submitted your APPE requests, please indicate that order.

Emergency medicine

Pediatrics

Psychiatry

Oncology

Industry

Specialty pharmacy

Transplant

Academia

Medication safety

Neurology

Section 2: Opening Minds Stigma Scale for Health Providers (OMS-HC)

These questions ask you to agree or disagree with a series of statements about mental illness. There is no correct answer. Please mark the box that best fits your opinion. (Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness.

If a colleague with whom I work told me they had a mental illness, I would be just as willing to work with him/her.

If I were under treatment for a mental illness I would not disclose this to any of my colleagues.

I would see myself as weak if I had a mental illness and could not fix it myself.

I would be reluctant to seek help if I had a mental illness.

Employers should hire a person with a managed mental illness if he/she is the best person for the job.

I would still go to a physician if I knew that the physician had been treated for a mental illness.

If I had a mental illness, I would tell my friends.

Despite my professional beliefs, I have negative reactions towards people who have mental illness.

There is little I can do to help people with mental illness.

More than half of people with mental illness don't try hard enough to get better.

I would not want a person with a mental illness, even if it was appropriated managed, to work with children.

Healthcare providers do not need to be advocates for people with mental illness.

I would not mind if a person with a mental illness lived next door to me.

I struggle to feel compassion for a person with mental illness.

Section 3: Slider questions

Please rank how uncomfortable you would feel treating a patient with the following conditions. (0 = Extremely comfortable, 100 = Extremely uncomfortable)

Type 2 diabetes

Acute kidney injury

Major depressive disorder

NSTEMI

Hypertensive urgency

Schizophrenia

Bipolar disorder

Opioid use disorder

COPD

Section 4: Ranking questions

Please rank the following situations from most stressful (#1) to least stressful (#5) if you were asked to do them during an APPE rotation

Administer chest compressions during a Code Blue

Obtain a medication history from a homeless patient with schizophrenia

Administer a flu vaccine to a patient with HIV

Talk with a patient about his active suicidal thoughts during an outpatient diabetes appointment

Demonstrate to a patient with opioid use disorder how to shoot heroin in a way that minimizes infection risk

Figure 2: Timeline of Study

August 2021	Members of the class of 2024 (Current P2 students) took a baseline survey to access their stigma prior to completing the 5-credit psychiatry module course (PHRX 4040).
December 2021	Members of the class of 2024 took the same survey to access their stigma levels following completion of PHRX 4040.
April/May 2023	Members of the class of 2024 will now take it at the end of their P3 year if they are completing a psychiatry rotation or internal medicine rotation during their P4 year. They will take the survey prior to completing their rotation. Researchers will compile a list of eligible students based off

	their rotation schedule published to their CoreELMS profile.
June 2023-April 2024	Students who participated in a psych or internal medicine rotation will take the survey a fourth time immediately following their rotation

Table 1: Baseline Demographic Information (n=22)

Characteristic	Percent (n)
Gender	
Male	31.8 (7)
Female	68.2 (15)
Transgender	0 (0)
Other	0 (0)
Prefer not to say	0 (0)
Age	
20-21	68.2 (15)
22-23	22.7 (5)
≥24	9.1 (2)
Race	
White	63.6 (14)
Asian	27.3 (6)
Black or African American	4.5 (1)
Other	4.5 (1)

Had a family member with a mental illness	
Yes	50 (11)
No	50 (11)
Had a close friend with mental illness	
Yes	63.6 (14)
No	36.4 (8)
Had a mental illness themselves	
Yes	22.7 (5)
No	77.3 (17)
Involvement in pharmacy organizations	
ACCP	4.5 (1)
AphA	9.1 (2)
AZO	18.2 (4)
CPNP	4.5 (1)
IphO	4.5 (1)
LKS	4.5 (1)
PDC	4.5 (1)
None	50 (11)

Key: ACCP: American College of Clinical Pharmacy, AphA: American Pharmacists Association, AZO: Alpha Zeta Omega, CPNP: College of Psychiatric and Neurologic Pharmacists, IphO: Industry Pharmacists Organization, LKS: Lambda Kappa Sigma, PDC: Phi Delta Chi

Table 2: Survey Question Results

	Pre-Survey Means	Post-Survey Means
Ranking of psychiatry in APPE preferences when asked to rank 10 different potential rotations	3.91	3.95
Do you agree or disagree with the following statements? 1 = Strongly disagree 5 = Strongly agree		
I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness	3.29	3.41
If a colleague with whom I work told me they had a mental illness, I would be just as willing to work with him/her.	4.29	4.64
If I were under treatment for a mental illness, I would not disclose this to any of my colleagues.	3.57	3.91

I would see myself as weak if I had a mental illness and could not fix it myself.	2.90	2.27
I would be reluctant to seek help if I had a mental illness.	3.14	2.45
Employers should hire a person with a managed mental illness if he/she is the best person for the job.	4.48	4.45
I would still go to a physician if I knew that the physician had been treated for a mental illness.	3.90	4.14
If I had a mental illness, I would tell my friends.	3.52	3.77
Despite my professional beliefs, I have negative reactions towards people who have mental illness.	2.19	1.73
There is little I can do to help people with mental illness.	2.00	1.50

More than half of people with mental illness don't try hard enough to get better.	2.24	1.45
I would not want a person with a mental illness, even if it were appropriately managed, to work with children.	2.24	2.00
Healthcare providers do not need to be advocates for people with mental illness.	1.43	1.36
I would not mind if a person with a mental illness lived next door to me.	4.00	4.05
I struggle to feel compassion for a person with mental illness.	1.67	1.32
Please rank how uncomfortable you would feel treating a patient with the following conditions. (0 = Extremely comfortable, 100 = Extremely uncomfortable)		
Type II Diabetes	23.4	44.2
Acute Kidney Injury	24.5	43.5
Major Depressive Disorder	36.1	50.3

NSTEMI	27.6	38.9
Hypertensive urgency	26.7	45.9
Schizophrenia	44.5	53.6
Opioid Use Disorder	41.3	51.9
COPD	25.2	39.8
Please rank the following situations from most stressful (#1) to least stressful (#5) if you were to be asked to do them during an APPE rotation.		
Administer chest compressions during a Code Blue	2.33	2.27
Obtain a medication history from a homeless patient with schizophrenia	2.95	3.59
Administer a flu vaccine to a patient with HIV	3.67	3.05
Talk with a patient about his active suicidal thoughts during an outpatient diabetes appointment	2.76	2.64
Demonstrate to a patient with opioid use disorder how to shoot heroin in a way that minimizes infection risk	3.29	3.45

References

1. Diefenderfer LA, Iuppa C, Kriz C, Nelson LA. Assessment of pharmacy student attitudes and beliefs toward patients with mental illnesses on inpatient psychiatric units. *Mental Health Clinician*. 2020;10(1):1-5. doi:10.9740/mhc.2020.01.005
2. Sherwood DA. Healthcare curriculum influences on stigma towards mental illness: Core psychiatry course impact on pharmacy, nursing and Social Work Student attitudes. *Currents in Pharmacy Teaching and Learning*. 2019;11(2):198-203. doi:10.1016/j.cptl.2018.11.001
3. Wogen J, Restrepo MT. Human Rights, Stigma, and Substance Use. Health Hum Rights. 2020;22(1):51-60.
4. Harris SC, Yates D, Patel M, Patel K. Student engagement and perceptions of stigmatizing views in a mental health–focused collegiate organization. *Mental Health Clinician*. 2017;7(5):187-193. doi:10.9740/mhc.2017.09.187
5. Howard MO, Chung SS. Nurses' attitudes toward substance misusers. I. Surveys. *Substance Use & Misuse*. 2000;35(3):347-365. doi:10.3109/10826080009147701
6. Modgill G, Patten SB, Knaak S, Kassam A, Szeto ACH. Opening minds stigma scale for Health Care Providers (OMS-HC): Examination of psychometric properties and responsiveness. *BMC Psychiatry*. 2014;14(1). doi:10.1186/1471-244x-14-120
7. Phokeo V, Sproule B, Raman-Wilms L. Community pharmacists' attitudes toward and professional interactions with users of psychiatric medication. *Psychiatric Services*. 2004;55(12):1434-1436. doi:10.1176/appi.ps.55.12.1434
8. Bell JS, Aaltonen SE, Bronstein E, et al. Attitudes of pharmacy students toward people with mental disorders, a six country study. *Pharmacy World & Science*. 2008;30(5):595-599. doi:10.1007/s11096-008-9211-x