Original Research

Impact of Psychiatry Clerkship Rotation in Attitudes Towards Mental Illness and Psychiatry as a Career Among Medical Students

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Abstract

Background
Stigma associated with mental illness (MI) permeates many professions, including healthcare. Recognizing and correcting bias is critical in delivering impartial and beneficial healthcare for all patients. Early educational interventions providing exposure to individuals with MI have shown to be effective at reducing MI stigma. The primary aim of our study was to assess the impact of a psychiatry clerkship on attitudes to MI. A secondary aim was to determine if the psychiatry clerkship influenced medical students' perceptions of psychiatry as a career.

Methods
A cohort of third-year medical students in Florida was invited to complete an online survey before and after participating in their first 4-week-long psychiatry clerkship during the 2021-2022 academic year. The voluntary, anonymous survey consisted of the Attitudes to Mental Illness Questionnaire (AMIQ) and a 3-item questionnaire on interest and knowledge in psychiatry. The Wilcoxon Sign-Rank test was used to determine statistical significance ($P < .05$) for pre- and post-clerkship values.

Results
Among 39 invited students, 22 participated before (56.4%), and 23 participated after their psychiatry rotation (59.0%). Overall, there was a statistically significant increase in the perceived level of general interest in psychiatry ($P = .027$), psychiatry knowledge ($P < .001$), and career interest in psychiatry ($P = .040$). There was also a significant decrease in the stigmatized attitude score for depression and self-harm after their psychiatry rotation ($P = .042$). Finally, the participants initially showed the highest stigmatized attitude score for intravenous drug abuse among the 4 mental illnesses presented, which also included depression and suicidal ideation, alcohol use disorder, and schizophrenia.

Conclusion
The findings suggest that a psychiatry clerkship provided a positive exposure to the field, enhanced medical students' overall interest in psychiatry, and positively impacted medical students' attitudes towards MI.

Keywords
attitudes; career choice; clerkship; medical students; mental illness stigma; psychiatry education

Introduction
Mental illness (MI)-associated stigma is a permeating paradigm in society, and healthcare professionals are not invulnerable to unconscious bias in this regard.[1] The MI stigma may also deter individuals with MI from seeking help, leading to poorer quality medical care.[2,3] Additionally, medical students identified the

stigma toward MI as 1 factor that deters them from pursuing psychiatry as a career, which likely contributes to the shortage of psychiatrists.[4,5] The evaluation and implementation of interventions to reduce MI stigma among current and prospective healthcare professionals is a priority to improve health outcomes among individuals with MI and to reduce barriers to entry for mental health professionals.

Early educational interventions that involve direct contact with individuals with MI were shown to be effective at reducing MI stigma among prospective healthcare professionals.[6-8] Additionally, several researchers have investigated changes in attitudes to MI among medical students after a psychiatry clerkship rotation, where the students get hands-on experience with patient care. However, nearly all of these studies (specific to changes in attitudes following medical student psychiatry clerkships) have been conducted outside the United States (US).[9-13] Given the likely differences in cultural attitudes toward MI and psychiatric care education, a similar study in the US would be valuable in verifying that these results would be consistent in the US. In this online, survey-based cohort study, we examined the influence of a month-long inpatient psychiatry rotation on attitudes to MI among third-year US medical students. We further determined whether the psychiatry rotation influenced US medical students' perceptions and interest in psychiatry as a career.

Methods

Study Setting

Nova Southeastern University Dr. Kiran C Patel College of Allopathic Medicine provides a 4-year graduate program that grants a Doctor of Medicine (MD) degree (Florida, US). During the program's third year, groups of 1 to 5 medical students rotate through 7 clinical clerkships for 4 to 8 weeks. During their psychiatry clerkships, students rotate through a psychiatric inpatient unit at either 1 of the 2 teaching hospitals for 4 weeks. At the involuntary commitment receiving facilities, students are exposed to both voluntary and involuntary patient populations and are directly involved in patient care, including but not limited to patient interviews, examinations, and collateral history taking. Clinical exposure is supervised by residents and attending psychiatrists. Students also attend weekly didactic education sessions with a curriculum focused on diagnosing and treating psychiatric illnesses.

Study Design

We included all third-year medical students at Nova Southeastern University Dr. Kiran C Patel College of Allopathic Medicine whose psychiatry clerkship was scheduled between August 2021 and March 2022 in our solicitation to participate in an online survey. The baseline survey was to be completed by email up to 4 days before their first day of psychiatry clerkship. The baseline survey, hosted on Microsoft Forms, contained 2 questionnaires: the Attitudes to Mental Illness Questionnaire (AMIQ) and a 3-item questionnaire on interest and knowledge in psychiatry.[11,14] During the final week of the students' psychiatry clerkships, they received a follow-up email with the same pair of questionnaires.

The AMIQ is a validated and reliable self-reported questionnaire that is used to measure participants' attitudes to mental illness.[14] The survey contained 7 short case vignettes, each with the same 5-item questionnaire (5-point Likert scale). Four vignettes used psychiatric cases to measure participants' attitudes to psychiatric illnesses, while the other 3 vignettes used non-psychiatric cases as a control. The responses measured participants' attitudes to MI or non-psychiatric illnesses (eg, diabetes) and were scored from a minimum of -2 (eg, "strongly disagree") to neutral (0 score) to a maximum of +2 (eg, "strongly agree"). The scores were summed, resulting in a total score between -10 and 10, where lower scores signified stronger negative attitudes toward MI.[14]

Among the 7 vignettes described in the AMIQ, 4 vignettes presented psychiatric cases. Case 1 was a vignette on intravenous drug use history (IVDU); case 2 was on depression and suicidal ideation (SI); case 3 discussed alcohol use disorder (AUD); and case 6 involved schizophrenia. There were also 3 non-psychiatric vignettes presented: case 4, diabetes; case 5, criminal history; and case 7, Christian faith. Cases 4 and 7 were positive controls, and case 5 was a negative one. The median and interquartile range (IQR) of reported scores for each vignette were used to represent attitudes to each vignette,

where lower median scores represented a stronger stigma.

Each participant also completed an additional 3-item questionnaire.[11] This additional questionnaire was similar to the survey in a 2015 study conducted by Lyons et al that measured participants' level of interest, knowledge, and interest in psychiatry as a career. The response for each question was on a 1-10 scale; a score of 1 indicated low interest or knowledge, and a score of 10 indicated high interest or knowledge.

Statistical Analysis

Non-parametric statistical analyses, the Wilcoxon Sign-Rank test (R 4.2.0 software), were used to compare median scores for pre- and post-psychiatry rotation questionnaires. The alpha level was determined at a *P* value less than .05. The questionnaires were completed anonymously, and, therefore, the responses from baseline and follow-up surveys were unpaired for statistical analysis.

Ethical Consideration

This study was approved by the Nova Southeastern University Dr. Kiran C Patel College of Allopathic Medicine institutional review board (IRB Protocol Number 2021-303). Participants were informed that the survey was voluntary and anonymous and that they would not be identified.

Results

Demographics

Among the 39 medical students invited to participate, 22 completed the baseline survey, and 23 completed the follow-up survey, yielding 56% and 59% response rates for baseline and follow-up surveys, respectively. For the baseline survey, 36% of the participants were female, and the median age group was 25-28 years old, which included 50% of the participants. For the follow-up survey, 35%, 61%, and 4% of participants were female, male, and other, respectively. The median age group at follow-up was 25-28 years old, which accounted for 56% of the participants.

The number of participants in the survey pre- versus post-psychiatry clerkship differed, which impactsed the power of the test. We acknowledge this reduced power, so we report all elements (*P* values and summary statistics) that offer the reader information to interpret the differences.

Attitudes Toward Psychiatry

Before beginning the psychiatry rotations, the participants reported median ratings of 6.0 (out of 10) for the level of general interest in psychiatry, 5.0/10 for the perceived level of knowledge in psychiatry, and 4.5/10 for the level of interest in psychiatry as a career (**Table 1**). Median ratings were significantly increased after their psychiatry rotations for general interest in psychiatry (8.0/10, $P = .027$), perceived level of knowledge in psychiatry (8/10, $P < .001$), and level of interest in psychiatry as a career (7.0/10, $P = .04$) (**Table 1**).

Attitudes to Mental Illness Questionnaire

Prior to completing their psychiatry rotations, the participants revealed a more significant stigma towards psychiatric cases compared to the positive-control, non-psychiatric cases (**Table 2**). Overall, the median AMIQ score for the combination of all psychiatric cases was significantly lower than positive-control, non-psychiatric cases (2.16 points lower, 95% confidence interval [CI]: 0.67, 3.65, $P = .001$). IVDU and schizophrenia cases had particularly low median AMIQ scores (quartile 1, quartile 3) of -4.5 (quartile 1, quartile 3: -6.8, -2.2) and -2.0 (3.7, 1.0), respectively, compared to non-psy-

Table 1. Change in Perceived Level of Interest in Psychiatry After Psychiatry Rotation (1-10 scale)

Subject	Beginning of rotation (n = 22)*	End of rotation (n = 23)*	*P* value†
Level of general interest in psychiatry	6.0 (3.0, 8.0)	8.0 (7.0, 9.0)	**.027**
Perceived level of knowledge	5.0 (4.0, 6.0)	8.0 (7.0, 8.0)	**<.001**
Level of interest in psychiatry as a career	4.5 (3.0, 6.7)	7.0 (4.5, 9.0)	**.040**

*Median (quartile 1, quartile 3), †Wilcoxon rank sum test

Table 2. Change in Attitudes to Mental Illness After Psychiatry Rotation

Cases	Beginning of rotation (n = 22)*	End of rotation (n =23)*	*P* value†
Case 1 (IVDU)	-4.5 (-6.8, -2.2)	-3.0 (-6.0, -1.5)	.360
Case 2 (Depression and SI)	1.0 (-1.7, 3.7)	3.0 (1.5, 5.0)	**.042**
Case 3 (Alcohol use disorder)	2.5 (1.0, 4.0)	4.0 (-0.5, 5.0)	.470
Case 4 (Diabetes, positive control)	6.0 (4.2, 8.8)	6.0 (5.0, 8.5)	.570
Case 5 (Criminal history, negative control)	-6.0 (-9.0, -4.0)	-6.0 (-7.0, -3.5)	.540
Case 6 (Schizophrenia)	-2.0 (-3.7, 1.0)	0.0 (-1.5, 2.0)	.068
Case 7 (Christian faith, positive control)	4.0 (3.0, 7.0)	5.0 (3.0, 6.0)	.870

*Median (quartile 1, quartile 3), †Wilcoxon rank sum test

Abbreviations: IVDU = intravenous drug use; SI = suicidal ideation

chiatric cases of diabetes and Christian faith at 6.0 (4.2, 8.8) and 4.0 (3.0, 7.0), respectively. Individually, the psychiatric cases had lower median scores than positive controls, but these differences were not statistically significant.

As expected, the negative-control case for criminal history had the lowest median AMIQ score (quartile 1, quartile 3) at -6.0 (quartile 1, quartile 3: -9.0, -4.0) among all 7 cases (**Table 2**). After completing their psychiatry rotations, the participants' attitudes to non-psychiatric cases did not significantly change. However, the median score (quartile 1, 3) for depression and SI cases significantly increased from a baseline of 1.0 (-1.7, 3.7) to a follow-up of 3.0 (1.5, 5.0) (*P* = .042). Median scores for schizophrenia, IVDU, and AUD were also higher after the rotation but not significantly higher (**Table 2**). Specifically, the changes in median scores for IVDU, depression and SI, AUD, and schizophrenia were 1.5, 2.0, 1.5, and 2.0, respectively, on a score scale of -10 to +10 (**Table 2**). Though the degree of change in the median stigmatization score was 2.0 in depression and SI, and schizophrenia, the change in the median score for schizophrenia was not statistically significant.

Discussion

We found that medical students' direct exposure to individuals with MI through psychiatry clerkship had a positive impact on their attitudes toward at least 1 of the 4 mental illnesses that we investigated. Specifically, the AMIQ detected a significant improvement in the medical students' attitudes about a case vignette about a patient with depression and SI. In addition, the rotation appeared to improve medical students' general interest in psychiatry, their perceived level of knowledge about the specialty, and their interest in psychiatry as a career.

Previous studies, which were primarily conducted outside of the US, have shown similar patterns of improvement in attitudes to MI following a psychiatry rotation or specific programs directed toward reducing student mental health stigma.[9-13] For example, De Witt et al also observed a significant improvement in 112 South African medical students' attitudes toward MI after their 7-week psychiatry rotation using AMIQ. Notably, their students' AMIQ scores significantly increased only for case vignettes on IVDU and depression and SI but not for case vignettes on AUD and schizophrenia.[13] Our study, however, showed a significant increase only for a case vignette on depression and SI. A possible explanation for the difference in improved attitude towards IVDU is the longer duration of the psychiatry rotation (a 7-week rotation compared to a 4-week rotation in the present study), a larger sample size, and a potential difference in the patient population. Compared to this study that exposed the students to inpatient and outpatient settings in a hospital in South Africa, our study was limited to inpatient settings only and in the US, where cultural and geographical differences may have influenced the patient population. The lack of significant change in attitude to AUD and schizophrenia in both studies suggests a more persistent nature of stigmatizing attitude to AUD and schizophrenia.

Our results build on prior knowledge by indicating a significant positive effect of the US medical school psychiatry clerkship. The present study supports that psychiatry clerkship experience in the US improves medical students' attitudes to at least some MI, particularly toward depression and SI, even without a specific aim or intervention to change MI stigma.

Stigmatizing attitudes towards individuals with MI are common, even among healthcare professionals.[1] Similarly, our medical students began their psychiatry clerkships with more negative attitudes to psychiatric conditions, particularly schizophrenia and IVDU. Following their psychiatry rotation, the medical students showed significant improvement in AMIQ scores for depression and SI, while the remaining 3 of the 4 MIs presented had statistically non-significant improvement in their AMIQ scores. These results suggest that the experience our students had interacting with psychiatric patients and taking part in their assessment and treatment reduced negative attitudes toward at least some MIs. Thus, exposure to the treatment of psychiatric patients may be enough to decrease mental health stigma without the need for specific, targeted stigma reduction programs.

Among the limitations of our study was having a small sample size. However, over 55% of our cohort responded to the AMIQ and psychiatry interest surveys. We were also limited by the type and quality of training and exposure each medical student received at our hospital sites, where all students only had exposure to an inpatient psychiatry setting. Finally, all participants are from a single medical school in southeast Florida, US, limiting the generalizability of the findings.

Conclusion

Our findings suggest that a medical school psychiatry clerkship experience in the US provided a meaningful, positive change in attitudes toward at least some MIs and student perception of and knowledge about psychiatry. The feature of direct exposure to individuals with MI in the hospital setting can serve as a counterpoint to prevailing societal stigmas in medical education and promote career interest in psychiatry. We highlight the importance of further research in this matter to improve attitudes towards MI among future providers.

Conflicts of Interest

The authors declare they have no conflicts of interest.

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