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Fighting Health Care Provider Stigma: A Novel Approach to Understanding the Impact of Medical School Exposures

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Abstract

Background: Attitudes of healthcare professionals towards vulnerable patient populations decline throughout their training, and these negative attitudes have been shown to influence health outcomes and access to care. Little is understood about the factors influencing the development of these attitudes. While service-learning has been a proposed solution, there is heterogeneity in curricula, and it is unknown how varying types of exposures affect providers' stigma towards vulnerable patients.
Methods: Allopathic medical students completed a survey assessing attitudes towards four vulnerable patient populations: people with schizophrenia, people with major depressive disorder, people experiencing homelessness, and people with a history of intravenous drug use. Students also rated their level of exposure to three conditions (mental illness, homelessness, and addiction or injection drug use) in clinical volunteer, nonclinical volunteer, and observational and personal capacities. Analysis was conducted using Chi-squared tests and linear regression to assess for association(s) between the self-reported exposure(s) and attitudes towards the vulnerable populations.
Results: There were 278 survey responses. Clinical and non-clinical volunteer exposures were associated with less stigma towards three of the four patient populations studied. Personal exposures to mental health illnesses as well as addiction or injection drug use were also associated with a reduction in stigma towards vulnerable populations. When controlling for gender, year in school, and race, exposure to persons with a mental illnesses or addiction were each associated with less stigma towards multiple vulnerable populations.
Conclusions: Development of curricula for future health care providers should include, if not emphasize, opportunities for students to volunteer in a clinical capacity with vulnerable populations.

Introduction

Provider Stigma: A Barrier to Health Care for Vulnerable Populations

A stigma is an attitude that is deeply discrediting and associated with elements of labeling, stereotyping, separating, status loss, and discrimination.[1] Negative health provider stigmas towards conditions such as mental illness can greatly affect quality of care, health outcomes, access to care, and may contribute to health disparities.[2,3] Three examples of conditions that are often stigmatized in the health care setting include (1) mental illness such as schizophrenia and major depressive disorder, (2) homelessness, and (3) history of addiction or intravenous (IV) drug use.[4-10]

Only one in four adults who experience mental illness believe that others are caring and sympathetic towards persons living with mental illness.[11] Within the health care system, stigma toward mental illness can cause affected persons to deny symptoms, delay treatment, be excluded from

relationships and work, and interfere with recovery.[4] Stigmatizing attitudes from clinicians toward patients with mental illnesses can also decrease help-seeking behavior and worsen psychological distress.[5-7]

Individuals experiencing homelessness not only have an increased disease burden but also increased rates of early death.[12-14] A multi-center community-based survey of homeless veterans found that, despite needing medical services, these individuals were more likely to delay accessing primary care services because of concerns around stigma, trust, and care processes.[8] As a result, homeless individuals' sense of being unwelcome in health care settings is a major barrier for seeking care.[9]

People who inject drugs are also highly susceptible to provider stigma.[5] When patients diagnosed with hepatitis C virus (HCV) infection, a disease often transmitted through intravenous (IV) drug use, were surveyed about their experiences with physicians, a substantial number attributed communication difficulties to feelings of being stigmatized by their doctor.[10]

As evidenced by the aforementioned work, the existing body of research on health care providers' stigma primarily consists of studies that assess providers' stigma towards one condition. The reality, however, is that the conditions can co-occur, which suggests that providers may harbor multiple biases that impact care of vulnerable patient populations. Therefore, to better describe the scope of negative provider attitudes, it would be beneficial to evaluate multiple biases that a provider may have. This study aims to investigate future health care providers' attitudes towards three conditions that patients experience (people living with mental illness, people experiencing homelessness, and people with a history of IV drug use), which encompass four patient populations (breaking down mental illness into people who suffer from schizophrenia and people who suffer from major depressive disorder).

Addressing health care provider stigma towards these vulnerable, and sometimes overlapping, patient populations has the potential to improve access to care and health outcomes for these patients. To do so, however, we need a better understanding of how and why providers develop these attitudes.

The "Pathogenesis" of Provider Stigma and the Need for a Protective Model

What is the origin of health care providers' stigma towards vulnerable patients, and when does this stigma develop? On one hand, young adults today have more pessimistic attitudes about treatment outcomes and quality of life for people living with mental illnesses when compared to other generations.[15] With only one quarter of young adults believing that a person with a mental illness can eventually recover, incoming medical students may already harbor a generational bias towards mental illness.[16,17]

In addition to potential generational differences among adults in the United States (US), longitudinal studies of medical student cohorts have revealed that graduating physicians are less idealistic, less empathetic, and more cynical than when they entered medical school.[18,19] In fact, attitudes towards the homeless population continue to decline as physicians progress through medical school, residency, and into later clinical practice.[20,21] In parallel, while stigma increases, the satisfaction of caring for patients with psychiatric conditions diminishes over the course of training.[22,23] Early interventions may therefore protect student-clinicians from developing biases or stigmas that could affect their clinical decision-making, especially regarding these vulnerable populations.

Such trends are especially alarming in the context of US teaching hospitals and hospitals affiliated with academic health science centers providing a disproportionate share of care towards underserved patient populations.[24] This suggests that exposure to vulnerable patients during traditional medical education is not enough to protect students from developing negative attitudes and may even contribute to the development and/or reinforcement of bias.[25] Yet, little is understood about how different types of exposures during medical school promote or protect future physicians from developing negative attitudes towards vulnerable patients.

Medical Education and Service-Learning

Service-learning is a pedagogy of engagement wherein students address a genuine community need by engaging in volunteer service that is connected to the academic curriculum.[26] Service-

learning, especially through avenues that promote empathy, has been suggested as a solution to protect future physicians from developing negative attitudes towards vulnerable patient populations.[25,27] However, systematic review of service-learning programs at US medical schools reveals a large degree of heterogeneity in structure and types of exposure, such as clinical and non-clinical exposures, that students experience.[26] Therefore, when assessing service-learning's impact on stigma, it would be worthwhile to classify the experience by the type of exposure. Studies of nursing and dental students found that clinical service-learning with stigmatized patient populations decreases corresponding negative attitudes toward the respective population.[28-30] However, there has been minimal research with medical students and the effect of observational, nonclinical, and clinical service-learning experiences on multiple stigmas that may exist within providers.

At the allopathic US medical school in this study, there is a service-learning requirement for all medical students. First-year students must complete 30 hours of service-learning, and second-year students must complete 20 hours. To satisfy this requirement, students can choose from a large variety of pre-approved service-learning activities that range from non-clinical (e.g. building homes with Habitat for Humanity) to clinical (e.g. shifts at student-run free clinics). The student-run clinic opportunities include weekly preceptor-modeled, student-organized free clinics at two emergency homeless shelters and two residential substance treatment programs. Other clinical experiences at these and other sites include human immunodeficiency virus (HIV)/hepatitis C virus (HCV) screening, tuberculosis (TB) screening, and patient education programs.

Some medical students may be more or less inclined to volunteer with vulnerable patient populations, and this may affect the development of negative attitudes among different student groups. However, as a result of this school's service-learning curriculum, all students graduate from medical school with at least 50 hours of clinical and/or nonclinical volunteer exposures to supplement their more-traditional medical education. This creates a unique study environment that may partially compensate for students' varied interest in participating in service-learning itself.

We sought to characterize the attitudes of these allopathic medical students towards three stigmatizing conditions—people who suffer from the mental illnesses such as schizophrenia and major depressive disorder, people experiencing homelessness, and people with the history of addiction or IV drug use—with respect to their experiences working with vulnerable populations. By asking students to classify the type and extent of their exposure to each condition, we aim to better understand the types of exposures that may be associated with decreased stigma towards the three conditions studied.

We hypothesize that students who report a greater extent of volunteer exposure to patients living with at one of the three studied conditions will have less negative attitudes towards that corresponding patient population(s). Furthermore, participants' categorization of these volunteer exposures as personal, clinical, or non-clinical will potentially better inform the types of service-learning interventions to combat the development of health care provider stigma towards vulnerable patient populations.

Methods

Assessment Tools

The Health Professionals' Attitudes Toward the Homeless Inventory (HPATHI) is a validated survey that measures providers' attitudes toward people experiencing homelessness.[31-33] The HPATHI consists of 19 statements, to which respondents mark the degree that they agree or disagree on a 5-point Likert scale. An individual's score is presented on a scale from one to five, with a higher score reflecting less stigma. For this study, a score below 4 was considered positive for stigma.

The Medical Condition Regard Scale (MCRS) is a validated, non-condition-specific scale used to quantify anticipatory feelings about treating patients with various medical diagnoses among future professionals.[34] It consists of 11 statements, which are also responded to using a 5-point Likert-type scale. An individual's score is presented as a cumulative score, with a higher score

reflecting less stigma. The MCRS has been used and validated across multiple disciplines and training levels.[34-36]

We applied the MCRS to previously-validated vignettes describing common comorbid conditions among the homeless population of New Orleans, Louisiana, specifically: mental illness, randomly assigned as either major depressive disorder (MDD) or schizophrenia, and confirmed HCV diagnosis with history of IV drug use.[37,38] By combining the HPATHI and MCRS within one survey tool, we hoped to better understand the interaction of medical students' experiences and the development of stigma towards four vulnerable patient populations.

Data Collection and Analysis

All medical students enrolled at an allopathic medical school in New Orleans, Louisiana were emailed an invitation to participate in December 2016. Participants completed an anonymous Qualtrics-based online survey that included the HPATHI and the MCRS (Online Appendix). Students were asked the extent (on a 5-point Likert scale from "never" to "very often") to which they were exposed to persons experiencing each of the three previously-mentioned conditions in clinical volunteer, nonclinical volunteer, and observational capacities. Clinical exposure refers to acting in a medical capacity, while nonclinical exposure refers to acting in any non-medical capacity (such as providing social care, educating about non-medical topics, etc.). Students that responded "very often" or "often" to these categories were considered exposed to that population. The survey also assessed whether students themselves or their friends and family members (friends and family assessed as one combined category) experienced these conditions. Students received reminder emails to complete the survey two, six, and eight weeks after their initial invitation, and the survey was closed after twelve weeks.

The Chi-squared test and linear regression were applied to the HPATHI and MCRS respectively in order to evaluate the association between the students' self-reported exposure to each of the three studied conditions and their attitudes towards the four vulnerable patient populations. Basic respondent demographics were controlled for including year in medical school, gender, and race/ethnicity.

This study received approval from the home institution's Institutional Review Board.

Table 1. Participant demographics by reported gender, year in school, and race/ethnicity

Demographic	N	%
Gender		
Male	123	44.1
Female	151	54.1
Other	4	1.4
Year in School		
1st	78	28
2nd	77	27.6
3rd	61	21.9
4th	61	21.9
Race/Ethnicity*		
White	206	73.8
Black	6	2.15
Hispanic	10	3.58
Asian	68	24.4
Middle Eastern	7	2.51
Other	11	3.9

**Respondents could identify as more than one race/ethnicity.*

Results

Just over one-third of 720 enrolled medical students completed the survey (n = 278). As shown in Table 1, participants were 44% male and ranged in age from 21 to 38 (mean = 26). Nearly three-quarters of participants identified as Caucasian, and almost one-quarter considered themselves Asian. They were equally distributed by year in medical school. The average respondent had completed 21 student-run free clinic shifts, one of the primary opportunities for medical student clinical volunteering at the institution.

Exposure to persons with a history of mental health issues and persons suffering from addiction was associated with less stigma in multiple settings (Table 2). Medical students with either clinical or non-clinical volunteer experience in sit-

Table 2. Respondents with Exposure and Bias Towards Populations of Interest

Type of Exposure		Students with Exposure, N (%)	HPATHI Score < 4, N (%)		MCRS Score, Median (IQR)					
			Homelessness (N = 278)		Depression (N = 135)		Schizophrenia (N = 143)		HCV & IV Drug Use (N = 276)	
			Exposed	Not Exposed	Exposed	Not Exposed	Exposed	Not Exposed	Exposed	Not Exposed
Mental Health	Volunteer	25 (9.0)	12 (48.0)†	177 (69.7)	32 (29-34)	31 (30-33)	33 (31-35.5)*	32 (30-34)	32 (30-34)	32 (30-34)
	Clinical	83 (29.8)	41 (49.4)‡	148 (75.5)	32 (29-34)	31 (30-33)	33 (31-35)*	32 (30-34)	33 (30-34)	32 (30-33)
	Friend/Family	5 (1.8)	2 (40.0)	187 (68.3)	32 (31-33)	31 (30-33)	33 (31-36)	32 (30.5-34)	32 (31-32)	32 (30-34)
	Self	14 (5.0)	6 (42.9)†	183 (69.0)	30.5 (29.5-32)	31 (30-33)	34.5 (33-38)†	32 (30-34)	31.5 (30-33)	32 (30-34)
Homeless-ness	Observe§	257 (92.1)	175 (68.1)	14 (63.6)	31 (30-33)	32 (30-34)	32 (31-34)	32 (31-34)	32 (30-34)	33 (30-34)
	Volunteer	39 (14.0)	23 (59.0)	166 (69.2)	31 (30-32)	32 (30-33)	32 (31-34)	32 (30-34)	32 (30-34)	32 (30-34)
	Clinical	111 (39.8)	73 (65.8)	116 (69.1)	31 (29-33.5)	32 (30-33)	32 (31-34)	32.5 (30-34)	33 (30-34)	32 (30-33)
	Friend/Family	4 (1.4)	2 (50.0)	187 (68.0)	32 (31-33)	31 (30-33)	32 (31-33)	32 (31-34)	32 (28-32.5)	32 (30-34)
	Self	4 (1.4)	2 (50.0)	187 (68.0)	32 (31-33)	31 (30-33)	32 (31-33)	32 (31-34)	32 (28-32.5)	32 (30-34)
Addiction	Volunteer	38 (13.6)	21 (55.3)*	168 (69.7)	31 (30.5-34)*	31 (30-33)	33 (31-35)	32 (30-34)	33 (31-34)	32 (30-34)
	Clinical	114 (40.9)	66 (57.9)†	123 (74.6)	31 (29-34)	32 (30-33)	33 (31-35)†	32 (30-33)	33 (31-34)†	32 (30-33)
	Friend/Family	6 (2.2)	3 (50.0)	186 (68.1)	31 (30-33)	31 (30-33)	33 (31-36)	32 (30.5-34)	32 (31-33)†	32 (30-34)
	Self	8 (2.9)	3 (37.5)*	186 (68.7)	30 (29-32)	31 (30-33)	34.5 (32-38)*	32 (30-34)	32 (30.5-33.5)	32 (30-34)

HPATHI: Health Professionals' Attitudes Toward the Homeless Inventory; MCRS: Medical Condition Regard Scale; HCV: hepatitis C virus; IV: intravenous; IQR: interquartile range

**p<0.1; †p<0.05; ‡p<0.001; §The HPATHI instrument includes an exposure of observation because observing homeless individuals can be impactful and varies depending on where one has lived, worked, and visited. This was not extended to the other exposure populations as they tend to be less visible.*

uations with exposure to persons with a history of mental illness were less likely to show stigma towards persons suffering from homelessness as measured by their HPATHI scores. These same medical students also had higher adjusted MCRS scores relating to patients with schizophrenia (1.29 points and 1.02 points higher, respectively, $p<0.1$). A personal history of mental health issues was also associated with a lower rate of stigma towards homelessness as well as a three-point increase in the student's MCRS score relating to patients with schizophrenia ($p<0.05$).

Medical students with non-clinical volunteer exposure to persons suffering from addiction were less likely to show stigma towards persons suffering from homelessness; additionally, they showed a 1.46-point increase in their MCRS score relating to patients with major depression compared to their non-exposed counterparts ($p<0.1$).

When the exposure to addiction happened in a clinical setting, the association with decreased stigma towards homelessness was still present; however, the higher MCRS scores were seen in patients with schizophrenia and HCV (1.11 and 1.09 point increase, respectively, $p<0.05$).

Medical students with a friend or family member who had a history of addiction had a slightly higher (0.77 points higher, $p<0.05$) MCRS score for patients with HCV than their non-exposed counterparts.

Similar to personal history with mental illness, a personal history with addiction was associated with less stigma towards persons suffering from homelessness as well as a 2.6-point increase in the respective MCRS score relating to patients with schizophrenia ($p<0.1$).

No other significant associations with decreased stigma were found between specific service-learning activities or self-reported exposure to the three conditions studied.

Discussion

This study of allopathic medical students' attitudes towards people who suffer from mental illnesses such as schizophrenia and major depressive disorder, people experiencing homelessness, and people with a history of IV drug use with respect to the students' prior experiences found that a variety of types of experiences were associated with lower levels of stigma towards these patient populations. Clinical volunteer exposures were associated with less stigma towards three of the four patient populations studied. Non-clinical volunteer exposures were also associated with less stigma toward three of the four patient populations.

A particularly noteworthy result was the association of clinical volunteer exposure with reduced negative attitudes towards multiple patient populations. Clinical volunteer exposure to addiction was associated with significantly less stigma towards three of the four patient populations (homelessness, schizophrenia, and HCV), while clinical volunteer exposure to mental illness was associated with lower levels of stigma towards two patient populations (homelessness and schizophrenia). This overlap may indicate that these conditions co-occur in the patient populations students were exposed to. However, it is also noteworthy that the overlap was not present to the same degree with non-clinical volunteer exposures to the same conditions. Combined, these findings suggest that clinical volunteering experiences, as opposed to non-clinical volunteer exposures, may better help students understand the complex scope of conditions that underserved patient populations experience.

It is also worth acknowledging that exposure via one's own experiences or the experiences of one's friends or family members was associated with significantly less negative attitudes towards patient populations studied in some cases. However, given the low number of students who reported such exposures, it is difficult to compare their impact to that of observational, non-clinical volunteer, and clinical volunteer exposures. Better understanding this intersection has the potential to inform ongoing conversations about how diversity contributes to medical education and, ultimately, health care provider attitudes and behaviors.[18,19]

This study is not without limitations. For example, the survey was conducted at a single institution, which may limit external validity. The cross-sectional nature of this study is also limited in its ability to draw directional conclusions. While the distribution of participants' demographics and year in school suggest the result may be representative of the student body, the survey

response rate may impact internal validity. The role of potential student response bias is also worth acknowledging. While results suggested differences exist between "clinical" and "non-clinical" volunteering experiences, confounding variables may still exist. While all participants are required to complete 50 service-learning hours, it is possible that biases influence the type of exposure chosen or extent of exposure beyond 50 hours.

Although many medical school curricula include service-learning, a systematic review of service-learning programs reveals an enormous degree of heterogeneity, and further research is needed to design and implement effective programs.[26] As a whole, the results of this study suggest that the development of curricula and service-learning opportunities for future health care providers should include, if not emphasize, opportunities for medical students to volunteer in a clinical capacity with vulnerable patient populations. These opportunities may function as powerful educational tools making future health care providers less likely to hold multiple negative attitudes or biases that may ultimately affect their clinical performance. The current medical education model is continuously evolving, and further study should be centered around innovative programs that use service-learning to increase and enhance exposure to populations that include those living with mental illness, those experiencing homelessness, and those with a history of substance use earlier in the development of future clinicians.

Finally, this study's unique combination of two pre-existing, validated survey tools provides a novel framework for measuring the impact of experiences on health care provider stigma towards multiple conditions. This survey was developed to assess how negative attitudes change among health professionals during training, and it could also be administered on a longitudinal basis to better identify how stigma develops. Such a longitudinal study could also shed light on how students' pre-existing biases influence their choice in service-learning activities, a potential cofounding variable that could not be assessed here. Better understanding the impacts of volunteer clinical experiences, such as service-learning, on the long-term development of provider attitudes has the potential to inform further interventions and curricular development. Understanding changes in attitudes of medical school faculty is also worth evaluating as these providers act as examples, teachers, and mentors for a spectrum of health care providers in training. Studying individual negative attitudes towards different stigmatized conditions with a unified tool may allow for a more comprehensive understanding of attitudes towards these underserved populations. Such understanding has the potential to better prepare future health care providers to provide optimal care for some of their most underserved and vulnerable patients.

Disclosures

This study was approved by the Tulane University Institutional Review Board. The datasets generated and/or analyzed during the current study are not publicly available at this time but are available from the corresponding author on reasonable request. All authors have made meaningful contributions to the study, consent to publication and have no conflicts interest to disclose. They, nor their institutions, have received commercial support for the submitted work.

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