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# Mental Health Attitudes and Stigma among Medical Students: An Evaluation of the Student Mental Health Initiative

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Philadelphia College of Osteopathic Medicine

Department of Psychology

MENTAL HEALTH ATTITUDES AND STIGMA AMONG MEDICAL STUDENTS:  
AN EVALUATION OF THE STUDENT MENTAL HEALTH INITIATIVE

By Jennifer Hess Kengeter

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Psychology

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DEPARTMENT OF PSYCHOLOGY

**Dissertation Approval**

This is to certify that the thesis presented to us by Jennifer Kengeter, on the 10 day of May, 2017, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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### **Abstract**

There is a plethora of literature on the formation and prevalence on mental health stigma; however, literature on anti-stigma programs is scarce. The current mixed method study evaluated an anti-stigma program for medical students that contained a peer testimony component. A total of 25 participants were included in the quantitative component of the study. Data were collected over 3 consecutive years. All participants attended the Student Mental Health Initiative (SMHI) and completed a pre- and post-survey examining stigmatizing beliefs and negative attitudes toward mental illness. The qualitative portion of the study was a focus group with two participants who examined the strengths and weaknesses of the event. Results indicated there was a significant difference in negative attitudes across mental illnesses. Results approached significance for attitude change. These results are likely due to low sample size, which lacked statistical power. Limitations and future directions are discussed.

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## **Chapter 1: Introduction**

### **Statement of the Problem**

Individuals with mental illnesses constitute one of the most stigmatized groups in the United States. Arboleda-Flórez and Stuart (2012) defined stigma as “a feeling of being negatively differentiated owing to a particular condition, group membership, or state in life” (p. 458). Stigmatization often leads to poorer healthcare, fewer occupational opportunities, and decreased access to housing (Baron & Salzer, 2002). Stigmatization, which is based on negative stereotypes, prejudice, and discrimination, often surrounds ideas that mental illnesses make people dangerous, lazy, and/or incompetent (Corrigan, 1998; Crisp, Gelder, Rix, Meltzer, & Rowlands, 2005; Wahl, 2003). Additionally, stigmatization is a product of misinformation and consists of a lack of knowledge, negative attitudes, and avoiding behaviors (Gyllensten et al., 2011). These avoidance behaviors serve to reinforce negative attitudes against those with mental illnesses.

Recently, there has been an increase in programs designed to decrease stigma and increase positive attitudes toward those with mental illnesses. Anti-stigma programs have been enacted both as large public education campaigns and local workshops and seminars (Lauber & Sartorius, 2007). Community-based anti-stigma programs are typically aimed at those who have frequent contact with individuals with mental illnesses (Pinfold, Thornicroft, Huxley, & Farmer, 2005). Specific efforts have been targeted toward police officers, healthcare workers, and students to improve treatment outcomes and interactions with individuals with mental illnesses (O'Reilly, Bell, & Chen, 2012; Pinfold et al., 2005). For example, it has been proposed that if healthcare workers hold less stigmatizing attitudes, those with mental health issues might seek medical care

earlier and receive the same quality of care as others (Corrigan, 2004; Rüsçh, Angermeyer, & Corrigan, 2005).

An estimated 46.6% of Americans will experience a mental illness during their lifetimes. Included in this statistic are a large percentage of postgraduate and graduate students, including medical students. Adjustment to the pressures of higher education often triggers mental health concerns. Within this student population, only a small proportion of these students will seek treatment (Halter, 2004; N. Quinn, Wilson, MacIntyre, & Tinkin, 2009). The decision not to seek help is impacted largely by stigma surrounding mental illnesses, or mental health stigma (MHS; Fuller, Healey, Bradley & Hall, 2004). Many students believe that mental health problems could be viewed as a sign of weakness (Chew-Graham, Rogers, & Yassin, 2003; Givens & Tija, 2002) or that mental illness could impact their future professions (Wimsatt, Schwenk, & Sen, 2015). This is especially true in high-achieving individuals such as medical students (Wimsatt et al, 2015). Medical students reported higher rates of mental disorders when compared to dentistry, nursing, and physical education students (Facundes & Ludermir, 2005). In contrast, Dahlin, Nilsson, Stotzer, and Runeson (2011) found medical students to have the same level of mental health problems as business students. Not only do medical students show negative attitudes toward others with mental illnesses, they harbor negative attitudes toward themselves as well when they experience mental health concerns.

To combat these attitudes, anti-stigma programs are beginning to target both types of stigma. Such programs have shown to influence significant changes in levels of stigma when they contain educational and direct contact components. The combination of these components has been shown to result in increases in knowledge about mental

illnesses, decreases in stigmatizing attitudes, increases in empathy, and behavior changes toward individuals with mental illnesses (Friedrich et al., 2013; O'Reily et al., 2012; Pittman, Noh, & Coleman, 2010). Nevertheless, direct contact in the form of mental health consumer testimonies has shown to be the most effective way to produce these changes (Corrigan, Larson, Sells, Niessen, & Watson, 2007; Fredrich et al., 2013). In addition, individuals with highly negative beliefs prior to these testimonies often show the greatest change in attitudes (Roth, Antony, Kerr, Downie, & Antony, 2000). Recommendations for improvements in future anti-stigma campaigns include programs aimed specifically at medical students. Medical school training has been found to do little to address change in stigmatizing attitudes, and such changes may result in improvements in overall patient care and the psychological wellness of the physicians (Fredrich et. al., 2013; Papish et al., 2013).

Medical professionals have been shown to display similar stigmatizing views toward individuals with mental illnesses as held by the public (Sartorius, 2002; Thornicroft, Rose, & Kassam, 2007; Totic et al., 2012). Perhaps if anti-stigma programs were part of medical school training, an overall reduction in stigmatizing views held by future medical professionals would take place. Attitude change in physicians is needed as healthcare moves toward an integrated healthcare approach. Often, medical practitioners are the first line of contact individuals seek for care. It is imperative that medical practitioners are unbiased and are sensitive to the treatment of mental illnesses. Negative attitudes and minimization of mental illness may cause individuals to be underdiagnosed and not treated properly, leading to increased health risks. If attitude change could occur during medical training, perhaps a shift in attitude would occur

among members of interdisciplinary teams. In contrast, research has shown that current medical training does little to change these stigmatizing attitudes, and there is evidence that medical students hold these views throughout the course of medical school (Ay, Save, & Fidanoglu, 2006).

To address this problem, anti-stigma programs are being introduced gradually as elective components to medical education (Aggarwal et al., 2013; Friedrich et. al., 2013). For example, *The Education Not Discrimination* project, offered at four English medical schools, demonstrated improvements in stigma-related knowledge and reduction in stigma (Friedrich et. al., 2013). A similar program, developed at University of California, San Francisco's (USCF) medical school, Mental Illness Among Us (MIAU), was presented by peer mental health user students for their classmates (Aggarwal et al., 2013). MIAU is a unique anti-stigma program, in that the mental health care users were also same-year peers in the medical school who disclosed their diagnoses, symptoms, and experiences to their peers as part of the program. The program produced increases in positive statements regarding mental illnesses. Although this program was designed originally to decrease internalized stigma and increase frequency of students' help-seeking behaviors, it is believed that this program could have wide reaching results, decreasing stigmatization that will extend toward future patients as well. Programs to reduce stigmatization in medical students may serve to enable students to become physicians who are more comfortable to treat and diagnose mental illnesses, especially because physical and mental health are so closely intertwined.

## Chapter 2: Literature Review

Historically, those with mental illnesses represent a marginalized population that experiences numerous barriers in everyday living. Lost housing and occupational opportunities (Baron & Salzer, 2002) and social exclusion (Anagnostopoulos & Hantzi, 2011) are just a few of the barriers that disproportionately affect this group. Those with mental illnesses frequently experience negative attitudes from others, prompting avoidance of behaviors which include seeking medical care and social opportunities (Kaufman, McDonell, Cristofalo, & Ries, 2012; Lauber, Nordt, Braunschweig, Rössler, 2006; Nash, 2013). Avoidance of medical care usually leads to exacerbated medical and mental health issues. When mental health care users seek medical care, they are at an increased risk to receive low quality of care (Thorncroft et al., 2007). One of the biggest issues this population faces--also contributing to the marginalization this population experiences—is stigma in the form of negative attitudes or discrimination directed toward them (Corrigan et al., 2014; Horsfall, Cleary, & Hunt; 2010; Kopera et al., 2014).

A brief historical review reveals long-standing discrimination and, at different times, persecution of those with mental health problems. The perceived dangerousness of mental illness stretches far into history, and was even depicted in Greek mythology (Arboleda-Flórez & Stuart, 2012). Often secluded from society, individuals with mental illnesses were forced into institutions or simply hidden by families. More recently, beliefs that the mentally ill are dangerous and incompetent often appear in the form of public stigma that is related to and reinforced by how the media has portrayed those with mental illnesses (Maier, Gentile, Vogel, & Kaplan, 2014; Wahl, 2003).

Although MHS is widespread in the general population (Pescosolido et al., 2010), research indicates the same negative attitudes are prevalent among medical professionals (Horsfall et al., 2010; Kopera et al., 2014). Healthcare professionals, including students receiving medical training, exhibit stigmatizing views toward those with mental illnesses. Stigma is higher in individuals who have had less contact with mental illness (Nguyen, Chen, & O'Reilly, 2012). Sociological research has shown that contact with an outgroup decreases forms of prejudice and discrimination (Dasgupta & Rivera, 2008). An outgroup consists of those with one or more characteristics that differ from the individual in some way. Thus, contact with mental health service users serves to decrease stigmatizing attitudes. Research with medical professionals and medical professionals-in-training has evidenced mixed results in attitude change because of contact with mental health care users (Kopera et al., 2014; Sadow & Ryder, 2008); however, through education and contact, anti-stigma programs hope to decrease negative, stigmatizing attitudes and, ultimately, discriminatory practices.

### **Stigma**

Stigma is a complex construct that is rooted in cues, stereotypes, prejudice, and discrimination (Corrigan, 2004). Goffman (1963) offered one of the first conceptualizations of stigma, explaining that it resulted from three conditions: physical deformities, tribal stigma, or character defects. He conceptualized stigma as a character defect imposed by those in the majority upon minority groups. Majority group members typically hold many advantages and are seen to have positions of power, in contrast to minority group members (Sachev & Bourhis, 1991). The cultural milieu of the majority group largely influences cognitions regarding the minority group (Link, Phelan,

Bresnahan, Stueve, & Pescosolido, 1999). Research has pointed out that stigma exists against many minority groups. More recently, research has examined the stigma held against individuals with HIV, Muslim Americans, and persons with mental illnesses. For example, Jefferies and colleagues (2015) found that the negative attitudes and discrimination males with HIV receive from healthcare providers greatly influenced treatment adherence. Males who perceived higher stigmatization were shown to be less adherent to treatment. Similarly, stigma toward Muslim Americans post-9/11 has led to increased rumination and avoidance of public places by Muslim Americans (Mosquera, Kahn, & Selya, 2013). Lastly, a focus group of individuals with schizophrenia reported that the public's lack of understanding of their illness influenced being socially excluded (Schulze & Angermeyer, 2003). There is a multitude of research that highlights the stigma that exists today.

The present study focused exclusively on the effects of MHS. MHS is widespread and has been documented among a large portion of individuals in society, including teachers, healthcare providers, service workers, and other professionals (Langston et al., 2010; Pittman et al., 2010; Sadow & Ryder, 2008). MHS is seen in individuals in all stages of the lifespan. Children and adolescents are reported to hold similar views as stigmatizing adults who describe those with mental illnesses using popular negative terms and negative emotional states (Rose, Thornicroft, Pinfold, & Kassam, 2007). MHS is a global problem that lessens the quality of life for persons with mental illness (El-Badri & Mellsoop, 2007). To more thoroughly investigate solutions to stigma, one must understand the process that creates stigma.

**Models of stigma.** Models of stigma can be divided into three groups: stigma conceptualized or explained as a cognitive structure, stigma described in terms of motivational models, and stigma conceptualized as a sociological model (Corrigan, Kerr, & Knudsen, 2005). Models are used to describe the stigma that individuals feel from others, known as public stigma, as well as internalized stigma that may result from these negative attitudes.

Cognitive models describe stigma as a construct rooted in stereotypes, prejudice, and discrimination. Stereotypes are social labels that often trigger discrimination (Schomerus et al., 2012). Typical stereotypes of individuals with mental illnesses involve viewing those persons as dangerous, unpredictable, childlike, and incompetent. When a stereotype elicits a strong emotional response, prejudice may occur (Gyllenstein et al., 2011). Corrigan (2005) explained prejudice as the acceptance of a stereotype. The behavioral response of prejudice is known as discrimination. Discrimination may follow as the response to a prejudice rooted in the endorsement of a stereotype. In one of the groundbreaking studies on perceptions of individuals with mental illnesses, Nunnally (1961) found that participants described a man with mental illness as dangerous, unclean, impulsive, and useless. Many years later, these negative views continue to exist and maintain avoidance of those with mental illnesses, a phenomenon which is also known as social avoidance, or social distance. Increasing public knowledge about mental illnesses is thought to change cognitive processes in hopes to change implicit and explicit stereotypes held by individuals; however, increasing public knowledge alone has not been shown to be effective in changing implicit attitudes of stigma.

Motivational models of stigma describe why people stigmatize others to protect themselves (Corrigan et al., 2005). They include theories of ego justification, group justification, and system justification. Ego justification explains stigma as a mechanism by which individuals in the majority protect the status quo by endorsing stereotypes about those in the minority (Corrigan et al., 2005). Research shows some support for group or system justification models of stigma (Corrigan et al., 2005). Group justification theories explain how most individuals promote ideals that support their own in-group identities and, ultimately, discriminate against groups that differ (Jost, Banaji, & Nosek, 2004). Institutionalized oppression and prejudiced attitudes are considered in-group justification theories (Sidanius & Pratto, 1993).

Research has shown the most support for system justification theory (Corrigan et al., 2003). System justification theory is a motivational model that is similar to group justification theory and describes stigma to occur, in large part, due to societal and institutional support for these ideals. This theory explains the reasons individuals support the status quo as fair and correct. Upholding laws and institutions as fair and correct gives individuals a sense of connection, but often at the expense of others (Jost et al., 2004). Unfortunately, these ideals often do not support the rights of the disadvantaged (Jost et al., 2004). According to this theory, when disadvantaged group members endorse stigmatizing institutionalized views, policies, and practices, the individual displays adjustment problems such as anxiety and depression (O'Brien & Major, 2005; D. M. Quinn & Crocker, 1999). In this way, system justification explains both public and self-stigmas.

Lastly, structural models of stigma discuss how MHS is reinforced by the institutions and structures that hold society together (Corrigan et al., 2005). Structural models describe the events that occur on large-scale levels to support faulty beliefs. Laws are created that either intentionally restrict the privileges of those stigmatized or produce consequences that have adverse effects on individuals (Corrigan, Markowitz, & Watson, 2004). Corrigan, Markowitz, and Watson (2004) found that almost one third of all U.S. states had laws that restricted the rights of those with mental illnesses. New federal policies have been enacted to decrease the amount of discrimination directed toward disenfranchised individuals. More recently, laws are beginning to uphold the rights of individuals with mental illnesses. For example, the American Disabilities Act (ADA) of 1990 protects the rights of those with mental illness and, thus, prohibits workplace discrimination against workers with mental illnesses (Cummings, Lucas, & Druss, 2013).

**Public stigma.** Public stigma is described as the negative attitudes that are projected by society onto others as a result of preconceived stereotypes (Arboleda-Flórez & Stuart, 2012). Public stigma is projected onto others by individuals who endorse negative stereotypes, and plays a role in decreasing quality of life and producing discrimination (Corrigan et al., 2005). Additionally, public stigma has been shown to impair social functioning for many individuals (Perlick et al., 2001).

**Negative beliefs and attitudes.** Although stigmatizing views are changing gradually, negative attitudes and stereotypes are still prolific (Mental Health Practice, 2013). One recent study concluded that although attitudes toward mental illnesses became more positive in the last 20 years, negative attitudes started to return in the last

decade (Wood, Birtel, Alsawy, Pyle, & Morrison, 2014). General domains that describe stigmatizing attitudes often include fear and exclusion, benevolence, and authoritarianism (Holmes, Corrigan, Williams, Canar, & Kubiak, 1999). Fear and exclusion surface as a form of discrimination. Benevolence and authoritarianism are crucial to a discussion of the negative attitudes and beliefs of MHS (Corrigan, Edwards, Green, Diwan, & Penn, 2001). Authoritarianism as a domain of MHS is explained as the belief that those with mental illnesses are inferior (Corrigan et al., 2001). For example, negative beliefs often involve perceptions that those with mental illness are dangerous, incompetent, and lazy (Angermeyer & Dietrich, 2006). Through an authoritarian lens, individuals with mental illnesses are often viewed as being personally responsible for their illnesses (Schomerus et al., 2012). This attitude was also described in research performed by Pescosolido and colleagues (2010). They found that 65% of participants believed alcohol dependence could be blamed on the “bad character” of the individual (Pescosolido et al., 2010). In the last decade, biological explanations of mental illnesses and substance misuse have become much more accepted, which suggests that there is a greater acceptance of mental illness as a “real,” treatable condition (Schomerus et al., 2012). Although the knowledge of the causes of mental illnesses has increased, beliefs in stereotypes continue to maintain stigma against those with mental illnesses.

Themes of benevolence continue to be an integral component of the negative beliefs that surround MHS (Holmes et al., 1999). Holmes and colleagues (1999) explain that benevolence is reflected in the false belief that those with mental illnesses need to be cared for by others, as though they were children. Often, these beliefs are shaped and reinforced through the media (Corrigan & O’Shaughnessy, 2007). Characters in movies

and television are often portrayed as childlike, unintelligent, labile, and untrustworthy (Stout, Villegas, & Jennings, 2004). One of the most frequently cited negative beliefs among the public is that those with mental illnesses are unpredictable (Angermeyer & Dietrich, 2005). Angermeyer and Dietrich (2005) report this to be attributed more often to those with schizophrenia and alcoholism than those with depression or anxiety. This attribute of unpredictability reinforces the perception that those with mental illnesses are incapable of self-care and need to be cared for.

Misconceptions and stereotypes of those with mental illnesses commonly include hallucinations and delusions as among the most common symptoms of mental illness (Sartorius & Schulze, 2005). Such symptoms may be descriptive of a person with schizophrenia. Research has shown that the psychotic disorders are the most commonly stigmatized disorders (Schulze & Angermeyer, 2003). Some theorize that MHS occurs due to generalizations extended from those attributed to psychotic disorders (Lauber & Sartorius, 2007). The negative attitudes toward those with positive symptoms of a psychotic disorder (e.g., hallucinations and delusions) have led many researchers to focus specifically on MHS toward persons with schizophrenia (Schulze & Angermeyer, 2003). The World Psychiatric Association (WPA) aimed its Open the Doors campaign specifically toward the stigma of those with schizophrenia for these reasons (Kadri & Saratorius, 2005).

Nevertheless, despite increased efforts to reduce stigma toward those with psychotic disorders, schizophrenia remains highly stigmatized. Recent literature has shown that negative attitudes toward those with psychotic disorders remain prevalent despite a decrease in frequency of such negative attitudes toward those with more

commonly occurring disorders such as anxiety and depression (Wood et al., 2014). It is theorized in the literature that high levels of stigmatizing attitudes may be influenced by the limited contact individuals have with persons with schizophrenia (Jorm et al., 1997).

**Internalized stigma.** Self-stigma, also referred to as internalized stigma, has been described as “the harm to self-esteem that results from internalizing stereotypes” (Corrigan, Rafacz, & Rüsch, 2011, p.341. Internalized stigma produces harmful results for individuals with mental illness. Although not everyone who experiences public MHS will experience self-stigma, stigma is internalized by many individuals with mental illnesses (El-Badri & Mellso, 2007; Livingston & Boyd, 2010). Individuals who experience internalized stigma have been shown to experience a poorer quality of life (El-Badri & Mellso, 2007). In addition, self-stigma has been shown to be related negatively to help-seeking behaviors (Vogel, Bitman, Hammer, & Wade, 2013) and positive factors such as hope and empowerment (Livingston & Boyd, 2010). In contrast, there appears to be a positive correlation between self-stigma and symptom severity (Livingston & Boyd, 2010).

Chronic stigma often creates both physical and mental health concerns for stigmatized individuals, which further exacerbate the effects of stigma (Link & Phelan, 2006). Current research documents the stigmatization of many minority groups, including ethnic groups, sexual minorities, obese individuals, and those with mental illnesses. Often, the stigmatizing individual internalizes these negative attitudes, which can result in damage to self-concept. Internalized self-stigma largely influences whether an individual decides to seek help (Teh, King, Watson, & Liu, 2014).

### **The Effects of Mental Health Stigma**

**Healthcare.** In the U.S., nearly half of all Americans will have a mental illness or mental health concern at some point in their lives (Sickel, Secat, & Nabors, 2014). Approximately half of these individuals will seek help for mental health concerns through primary care physicians (Pettersen, Miller, Payne-Murphy, & Phillips, 2014). There are several potential long- and short-term dangers if physicians hold negative attitudes toward those with mental illness. For instance, quality and effectiveness of care can be compromised when physicians hold stigmatizing views (Corrigan et al., 2014). Research has shown that general practitioners often look at mental disorders as burdensome and requiring more time and emotional investments (Fleury, Imboua, Farand, & Lambert, 2012). Nash (2013) described how diagnostic overshadowing is one of the most common barriers that mental health care users experience while receiving medical care. Diagnostic overshadowing occurs when symptoms of physical disease are attributed to mental illness. Often, practitioners fail to trust the complaints and concerns of mental health care users due to stigmatizing attitudes (Nash, 2013). McDonald et al. (2003) found that cardiac nurses were shown to ignore symptoms of a recurrent myocardial infarction in patients they believed were on anti-psychotic medications. Ignoring symptoms has disastrous results on the health of the individual.

Long-term, the health and mortality rates of those with serious mental illness (SMI) are worsening (Morden, Mistler, Weeks, & Bartels, 2009). The World Health Organization (WHO; 2005) reports those with SMI tend to have premature mortality rates twice that of the general population. Premature mortality in this population is due largely to physical medical conditions and poor physical care. WHO (2005) recommends that

physicians improve quality of care for this population. Researchers have documented numerous cases of poor care for those with mental illnesses (Morden et al., 2009; Nasrallah et al., 2006). Nasrallah and colleagues (2006) found that individuals with schizophrenia had high rates of untreated metabolic disorders despite being under a provider's care (30.2% diabetes, 62.4% hypertension, and 88.0% dyslipidemia) and providers' knowledge that side effects of anti-psychotics include metabolic disturbances. Similar results were seen in a population of mental health care users with cardiovascular issues and metabolic disorders, which were undertreated (Druss et al., 2000; Steylen, van de Heijden, Kok, Sijben, & Verhoeven, 2013). Not only has it been shown that physicians ignore physical symptoms of those with mental health illnesses, but there is less preventive care given to this population as well (Taylor et al., 2004). For example, although diabetes is known to have a higher prevalence among those with mental health problems, there is often a lack of diabetes screening (Taylor, Young, Mohamed, Paton & Walwyn, 2005). In addition, mental health care users have been found to be less likely to receive oral health care (Corrigan et al., 2014). Corrigan and colleagues (2014) found that primary care physicians believe that individuals with mental health issues were less likely to adhere to treatment and, subsequently, did not refer them to specialists or refill their prescriptions. Overall, poor quality of care was made worse by a decrease in recommendations and preventive care given to those with mental illnesses. It should be noted, however, that poor health outcomes not only stem from poor provider care but poor health behaviors in this population.

**Discrimination.** Behavioral activation of negative attitudes often manifests as acts of discrimination. Discrimination most often occurs in areas of employment,

education, and housing (Corrigan et al., 2003). Sadly, discriminatory employment practices are not decreasing for those with mental illnesses (Angermeyer, Matschinger, Carta, & Schomerus, 2014; Corrigan et al., 2003). For example, Glover, Corrigan, and Wilkniss (2010) found that 52.6% of participants in their study of individuals with SMI reported experiencing discrimination in employment. Another study revealed that participants were more likely to reject an individual with depression for employment than those polled 10 years earlier (Angermeyer et al., 2014). Additionally, one focus group of mental health care users revealed that upon returning from psychiatric inpatient stays, co-workers often made negative comments regarding their work.

The discussion of discrimination in education is skewed since it is documented that mental illness is underreported among college and graduate students for fear of stigma (Downs & Eisenberg, 2012). Individuals with mental illnesses often avoid disclosing a mental illness for fear of discrimination (El-Bardi & Mellsoy, 2007). For example, El-Bardi and Mellsoy (2007) found that 16 % of the participants in their study had difficulties gaining employment or education opportunities after they disclosed mental health concerns. A critical component of future anti-stigma endeavors is to determine which anti-stigma programs will bring about behavioral and attitude changes in students. Often, discriminatory behaviors occur overtly when individuals refuse to maintain social contact with individuals with mental illnesses.

***Social distancing.*** One of the most common discriminatory practices that results from stigma is social distancing or social exclusion (El-Badri & Mellsoy, 2007; Pescosolido et al., 2010). Individuals with mental illnesses often perceive and experience alienation by others (El-Bardi & Mellsoy, 2007; Thornicroft et al., 2007). Pescosolido

and colleagues (2010) reported that most study participants did not want to work with an individual, socialize, or have an individual with alcohol dependence marry into their families. One focus group of individuals with schizophrenia revealed a theme of being avoided by friends and family members (Schulze & Angermeyer, 2003), which is very common in MHS literature.

### **Healthcare Professionals and Mental Health Stigma**

Public and internalized stigma are common among healthcare professionals. Stigmatizing attitudes are held by many healthcare professionals despite the possibility of having knowledge of mental illnesses due to education and/or patient care. Healthcare providers are one of the specific groups targeted by anti-stigma campaigns, since attitude changes among medical and mental health providers could potentially have a large impact on MHS. Anti-stigma campaigns aimed at healthcare professionals hope to decrease the number of providers withholding services or participating in coercive treatment (Corrigan et al., 2005). In addition, it is theorized that targeting health workers might help bring about a greater attitude change (Arboleda-Flórez & Stuart, 2012). The majority of the literature presented focuses on those specifically trained as mental health professionals and medical doctors.

The literature examining mental health care providers' attitudes on mental health reveals mixed results. Mental health providers are not exempt from holding similar attitudes despite having knowledge of mental illnesses. For example, Lauber and colleagues (2006) found mental health care workers to possess the same stigmatizing attitudes as those in the general population, believing those with mental illnesses to be dangerous and "weird." Conversely, a review of 19 studies related to attitudes of mental

health providers revealed overall positive attitudes toward mental illness (Wahl & Aroesty-Cohen, 2010). This same review revealed that, in most of the studies, participants held some negative views, mostly occurring about social distance (Wahl & Aroesty-Cohen, 2010). A study of social work students found that those who have a significant amount of contact with individuals with SMI were shown to have less stigmatizing attitudes. Less contact with an individual with mental illness was indicative of a greater desire for social exclusion (Covarrubias & Han, 2011).

Research has also shown that professional graduate training does little to help decrease stigmatizing views (Covarrubias & Han, 2011). One study found no significant change in attitudes toward those with schizophrenia or severe depression in pharmacy students prior to mental health training when compared to pharmacy school students who had completed mental health training and graduated (Bell, Johns, & Chen, 2006). The graduate school's training had no effect on attitude change. A similar study of students pre- and post-mental health education in pharmacy school showed a slight but not significant improvement in stigmatizing attitudes toward those with mental illnesses (Cates, Neace, & Wooley, 2012).

In most medical schools, mental illnesses are discussed exclusively in relation to psychiatry units; however, it has been found that stigmatizing attitudes do not decrease following graduate education in psychiatry (Totic et al., 2012). Korszun and colleagues (2012) researched medical students' attitudes toward persons with depression, psychosis, or drug use over the course of medical school. Seven hundred sixty medical students participated in the survey, which found no attitude change toward individuals with depression, psychosis, or drug use. In contrast, the student group demonstrated the

highest level of regard toward individuals presenting with pneumonia. Regard is measured by the amount of patient interaction the physician finds to be enjoyable, treatable, and worthy of medical assistance (Christison, Haviland, & Riggs, 2002). The evidence of MHS among medical students and medical professionals-in-training supports the need for anti-stigma programs to be added to medical training, and has been recommended by many researchers (Korszun, Dinos, Ahmed, & Bhui, 2012; Kuhnigk, Strebel, Schilauske, & Jueptner, 2007; Magliano et al., 2013).

### **Medical Students**

**Public stigma among medical students.** There are many studies highlighting the stigmatizing views of medical students toward individuals with mental illnesses (Dixon et al., 2008; Magliano et al., 2013). In one such study, medical students reported working with patients who had mental illnesses was unappealing and stated that they would be less happy to see patients with co-occurring mental illnesses on their patient lists compared to patients solely with medical disorders (Dixon et al., 2008). Cutler and colleagues (2009) found that medical students negatively evaluated their patients on psychiatry rotations, believing their patients to be burdensome and frustrating. Although these studies have focused on medical students still in medical school, it is possible that their attitudes may change throughout the course of education.

Some research has shown that stigmatizing attitudes decrease toward the end of medical school, but this decrease does not lead to the elimination or even significant reduction of these attitudes (Ay et al., 2006). For example, in a study of 222 sixth-year Turkish medical students, 38.7% still perceived persons with schizophrenia as dangerous and 31% did not believe schizophrenia was curable (Ay et al., 2006). In a study of Italian

medical students, fifth- and sixth-year students endorsed more social distancing than first-year students despite medical training (Magliano et al., 2013). These studies provide evidence that suggests the ineffectiveness of medical education in reducing MHS in medical students.

It is possible that the training setting may play a role in the reduction of MHS in medical students. Medical students working in a primary care setting were shown to display negative views toward patients with schizophrenia or depression (Dixon et al., 2008). In contrast to the findings of Cutler et al. (2009), all students participating in a psychiatry rotation within primary care reported having positive attitude change because of their experiences (Walters et al., 2007). Students believed it was the emphasis on a patient-centered approach to care that influenced attitude change. Horsfall, Cleary, and Hunt (2010) explained that a patient-centered approach is necessary in the prevention of stigma. The cornerstones of patient-centered approaches emphasize seeing the person as a person rather than a diagnosis, emphasizing patient strengths and not solely his or her deficits or illness characteristics, and collaboration between the patient and the provider.

**Self-stigma among medical students.** Research has shown frequent psychological and physical complaints in medical students (Biro, Balajti, Adany, & Kosa, 2010; Dyrbye et al., 2008; Fox et al., 2011). Studies report significant rates of burnout, depression, suicidal ideation, and anxiety (Chandavarkar, Azzam, & Mathers, 2007; Guille, Clark, Amstadter, & Sen, 2014; Hirata et al., 2007). In one recent study of seven U.S. medical schools, rates of approximately 10 % in each cohort reported suicidal ideation (Dyrbe et al., 2008). Hope and Henderson (2014) conducted a systematic review on rates of anxiety, depression, and psychological burnout in United Kingdom and

European medical students. The researchers reported great variability in all categories, with rates of anxiety and depression between 6% and 63% and psychological distress occurring in 12% to 96% of the population studied. These high rates of mental health concerns leave medical students open to experience stigmatization themselves.

Despite these statistics, only a small percentage of students will seek treatment for psychological distress (Dyrbye et al., 2015). In one qualitative study of medical students' help-seeking behaviors, students described stigma against mental illness as the most salient barrier for not obtaining help (Chew-Graham et al., 2003). Themes of embarrassment and shame also surfaced among the participants. Due in part to some of these feelings, research has shown that medical students are more likely to seek help and support from family members or friends than mental health professionals (Chew-Graham et al., 2003). In addition, a lack of cohesion between university and support services was described as a barrier for student mental health care (N. Quinn et al., 2009).

Medical students often do not seek psychotherapeutic services for mental health concerns. Ignoring mental health treatment often leads to a variety of problems for medical students. The literature documents numerous cases of attempted and completed suicides by medical students and physicians (Hussen & Al-Khalidy, 2103; Rubin, 2014). Untreated medical students are susceptible to both public and internalized stigma. Therefore, there is a need for effective anti-stigma programs to help both physicians and their patients.

### **Anti-Stigma Programs**

Six approaches to MHS reform have been identified in the literature: protest, education, contact-based education, legislative reform, advocacy, and stigma self-

management (Arboleda-Flórez & Stuart, 2012). It is beyond the scope of this study to review all approaches to stigma change; however, education and contact-based interventions are reviewed and discussed. It is important to note that large scale attitude change has been shown to be possible when federal policies support anti-stigma efforts (Cummings, Lucas, & Druss, 2013). Federal policies target MHS by addressing the discrimination of stigmatized and marginalized individuals. There are a number of federal policies that have been enacted to help end discrimination of mental illnesses, including the ADA of 1990 and The Mental Health Parity and Addiction Equity Act of 2008 (Cummings et al., 2013). Federal policies such as these provide structural support to end discrimination of those with mental illnesses and influence the impact of stigma.

**Global and national anti-stigma campaigns.** In 1999, the U.S. surgeon general recognized stigma as the most salient factor impeding recovery from mental illnesses. Recently, there has been an increase in large scale public anti-stigma campaigns. Corrigan and Gelb (2006) described the necessary components of large scale anti-stigma efforts to include protest, education, and contact. As federal policies change to uphold the rights of all, anti-stigma programs need to be enacted globally, both on large and smaller scales. Many countries, including Austria, Canada, Germany, Norway, and Croatia, have conducted large national campaigns (Beldie et al., 2012). One of the recommendations for sustained attitude change to effect a shift in perspective is to provide continuous national anti-stigma campaigns. Beldie and colleagues' (2012) efforts to track national anti-stigma campaigns provides evidence of the efforts in multiple European countries. In the U.S., similar efforts are being enacted by the National Alliance on Mental Illnesses (NAMI) "Stigma Buster" campaign (2015).

Although numerous campaigns have been enacted, there have been minimal outcome studies targeting the results of such campaigns (Beldie et al., 2012).

Globally, the WPA initiated the “Open the Door” campaign in 1996, which cited three program goals: increase the awareness and knowledge of the nature of schizophrenia and treatment options; improve public attitudes toward those who have or have had schizophrenia and their families; and generate action to eliminate discrimination and prejudice toward those with schizophrenia (Kadir & Sartorius, 2005). The WPA provides an online training manual with specific suggestions to implement the program. The “Open the Doors” campaign describes ways to work with specific populations and promote interest in the program. Beldie et al. (2012) reported on 14 national campaigns worldwide that produced stigma change. Many of these countries followed the “Open the Door Campaign” guidelines. Results of the campaign have been mixed. When compared with individuals in 1989, participants in one Austrian study reported higher levels of belief after the campaign that those with schizophrenia were dangerous and a greater need for social distance (Grausgruber et al., 2009). Similarly, a German outcome study showed that individuals endorsed the need for less social distance in transient relationships but increased social distance in close relationships with individuals who have SMI (Gaebel et al., 2008). One of the challenges faced by national anti-stigma program is that attitude and behavior change may require repeated exposure for long-term results (Kadri & Sartorius, 2005).

In addition, major cities are offering anti-stigma programs in the form of mental health first aid to healthcare professionals and the public. The program originated in Australia and has been adopted in many major cities in the U.S., and aims to increase

mental health literacy and decrease stigma (Morrisey, Moss, Nektarios, & Ball, 2017). Mental health first aid is available for adults, youth, elderly, law enforcement, veterans, and college faculty members, and results show a decrease in stigmatizing attitudes in these populations (Burns et al., 2017; Mohatt, Boeckmann, Winkel Mohatt, & Shore, 2017; Morrissey et al., 2017; O'Reily, Bell, Kelly, & Chen, 2011). It is a promising anti-stigma campaign that is being adopted throughout the world by being implemented in small campaigns.

**Local anti-stigma campaigns.** The most effective component of small scale anti-stigma campaigns has been found to be a combination of education and contact with mental health care users (Corrigan & Gelb, 2006; Pinfold et al., 2005). Education alone has been shown to produce small amounts of positive attitude change in a limited number of studies (Mino, Yasuda, Tsuda, & Shimodera, 2001). For example, a 1-hour mental illness educational program administered as a voluntary learning experience in a Japanese medical school produced change in medical students' attitudes on social distance and knowledge about the causes of mental illness (Mino et al., 2001). Pinfold et al. (2005) found the educational component of anti-stigma programs to be the most effective in knowledge and attitude change of police officers and a group of community adults. In this study, both groups were exposed to mental health care users but identified the educational component as most helpful; however, at a 4-week follow-up, the participant groups rated the personal experience talks as being most impactful (Pinfold et al., 2005).

Overall, improved attitudes toward those with mental illness and behavior changes are most often reported when programs contain a mental health care user component. For example, positive attitudes were noted among pharmacy students, social

workers, and medical students who attended a testimony and education anti-stigma program (Friedrich et al., 2013; O'Reily et al., 2012). The self-disclosure of the mental health care user is often beneficial to the presenter and his or her audience (Marino, Child, & Krasinski, 2016). Corrigan (2013) explained that disclosure of mental illness has been seen to increase self-esteem. In addition, anti-stigma programs hope to decrease public stigma by producing changes in social distancing, incorrect knowledge, lack of empathy, and stigmatizing views (Friedrich et al., 2013; Hansson & Markström, 2014; O'Reily, Bell, & Chen, 2012).

Several studies have shown that including participation by mental health care users is a critical component to the effectiveness of an anti-stigma program (Pinfold et al., 2005). In one literature review on anti-stigma programs, Stubbs (2014) noted that in every study with mental health care user contact, stigmatizing attitudes improved. There are a number of examples of such programs. NAMI's In Our Own Voice (IOOV) is a nationally implemented anti-stigma program led by two trained mental health care users (Brennan & McGrew, 2013). The program's goals are to educate and provide a message of recovery (Brennan & McGrew, 2013). The IOOV campaign has been shown to be effective in its goals with undergraduates, graduate-level helping professionals, and consumers (Brennan & McGrew, 2013; Pittman et al., 2010). Although the IOOV campaign has been shown to be generalizable to different populations, researchers did not measure the level of attitude change in program participants.

There is a need for anti-stigma programs aimed at medical students who will become the future providers for two main reasons. It is hoped that reducing stigma in medical students will lead to better outcomes for those with mental illnesses and decrease

self-stigma, thereby increasing the likelihood of help-seeking behaviors in students. Many medical students with mental illness first present to their general practitioner (Pettersen et al., 2014). In addition, stigmatization of those with mental illnesses has been shown to lead to poorer health outcomes and lessened quality of care (Dixon et al., 2008). Unfortunately, there have been only a few anti-stigma programs offered as a voluntary addition to medical school education (Friedrich et al., 2013; Mino et al., 2011). Nevertheless, when such programs are added as a component of medical school, they are often effective in increasing awareness of and knowledge about those with serious mental health concerns.

One anti-stigma program that addressed self-stigma and the mental health needs of medical students was conducted by Aggarwal and colleagues (2013). This anti-stigma campaign, MIAU, was developed at UCSF to improve mental well-being of the students and to reduce stigmatizing attitudes (Aggarwal et al., 2013). MIAU began in 2009 as a yearly adjunct to a first-year neuroscience course. The goals of the program were to provide students with an opportunity to reflect on personal mental illness and for medical students to come together in a supportive manner as a community (Aggarwal et al., 2013). MIAU produced positive attitude change and an increase in compassion among students. Although the aim of the program is optimal mental health of medical students, it is hopeful that the program will lead to better patient care as well.

One of the unique features of the MIAU program is that it is organized by and for first-year medical students. Peer-led programs have been shown to be effective means to disseminate knowledge and increase self-acceptance of several topics, including diabetes management and medical disorders, and have led to greater student satisfaction

(Furmedge, Iwata, & Gill, 2014). The literature on peer-led anti-stigma programs is scarce but growing. Connor, McKinnon, Ward, Reynolds, and Brown (2015) found a significant reduction in self-stigmatization among depressed older adults who participated in a peer mentoring intervention. Not only are the students running the program, but they also self-disclose their experiences with mental illness and recovery. MIAU is a unique anti-stigma program that requires further investigation into its utility and effectiveness.

The Student Mental Health Initiative (SMHI) is a one such replication. The SMHI includes a similar format to the original MIAU, although the program was designed so organizers could tailor the program yearly. The SMHI participants met in a large auditorium where students received a brief introduction on mental health with a focus on medical/academic settings by a psychology faculty member who disclosed personal experiences with depression and anxiety to the students. This brief presentation was followed by personal stories of the second-year cohort. The presenters volunteered to present their stories at a previous date. Presenters shared stories about depression, idiopathic sleep disorder, anxiety, and family members with mental illness. For example, one presenter's mother has bipolar disorder and another presenter's father committed suicide. Student presentations were followed by a few minutes of students' comments. This large group session was followed by small group sessions. Leaders of the small groups were volunteers who were provided with specific written instructions for the group and given topics to discuss.

**Purpose of Study**

The present study investigated the changes in attitudes of medical students who attended a student-led workshop, SMHI, which was modeled after UCSF's MIAU. The program was designed to decrease public and internalized stigma. The effects of the SMHI were examined through both a quantitative and qualitative study at a northeastern U.S. osteopathic medical school. Change in attitudes toward those with mental illness following peer disclosure when amount of contact with individuals with mental illness is a controlled variable were examined pre- and post-SMHI. Prior contact with individuals with mental illnesses was a controlled variable, because contact with mental illnesses has been shown to decrease stigmatizing perceptions (Corrigan & O'Shaughnessy, 2007; O'Reily, Bell, & Chen, 2012). In addition, change in perceptions of individuals with schizophrenia was examined pre-/post-SMHI to determine whether medical students have persisting negative attitudes toward them in comparison with persons with other mental disorders. Some believe anti-stigma programs will be more effective in the long-term when they are targeted specifically to medical students (Friedrich et al., 2013). In addition, attitude change seems to be more significant when a person is in contact with a mental health care user who is in mental health recovery rather than acutely symptomatic (Reinke, Corrigan, Leonhard, Lundin, & Kubiak, 2004). Additionally, a focus group was held with volunteer participants of the SMHI to discuss reactions of participants to the SMHI and explore how participants perceived and received the workshop. This mixed method design examined attitude and expressed stigma changes in those who attended the SMHI. The information for this study was obtained from data collected as a pre- and

post-intervention survey, and a prospective focus group held at a northeastern U.S. osteopathic medical school

### **Chapter 3: Hypotheses**

#### **Hypotheses**

1. It was hypothesized that there would be a statistically significant decrease in stigma, as measured by the Opening Minds Stigma Scale, from pre- to post- SMHI intervention.
2. It was hypothesized that there would be a statistically significant improvement in attitudes toward mental illness, as measured by the Community Attitudes on Mental Illness scale, from pre- to post-SMHI intervention.
3. It was hypothesized that participants would express significantly more negative beliefs and attitudes about individuals with schizophrenia as compared to other mental health diagnoses both pre- as well as post-SMHI intervention.

#### **Qualitative Research Questions**

The following interview questions were explored in a qualitative focus group study with volunteers who presented in the SMHI:

1. In your opinion, what is the purpose of the SMHI?
2. What was the experience like to hear from your peers about their mental health issues?
3. What did you get out of the Student Mental Health Initiative?
  - a. Did you learn anything new? If so, what?
  - b. How did your participation in SMHI affect the way you think about individuals with mental health issues?
4. What elements of the SMHI would you change in order to make it more effective?
5. Would you feel comfortable seeking psychological help from a professional for your mental health concerns?

## **Chapter 4: Method**

### **Study Design and Justification**

This study used a mixed-methods approach containing a quantitative and qualitative component to examine the SMHI. Gelling (2014) explained that a mixed-methods approach is appropriate and encouraged when neither a qualitative nor a quantitative study solely would add to the depth of the findings. This mixed methods design was implemented to explore attitude change of attendees and provide a more in-depth look at their reactions and thoughts. The quantitative component of the study accessed data collected among medical students. The data were obtained from pre- and post-SMHI surveys conducted to evaluate the effectiveness of a peer-led anti-stigma program designed to reduce MHS among medical students. The focus group adds detailed information about the most and least helpful components of the SMHI.

The quantitative component of the study was a repeated measures design. Although the quantitative component provided critical information about the effectiveness of the SMHI on stigma and attitude change, there were explanatory benefits that may have come from a qualitative piece of the design. Given the content of the SMHI, this study included a focus group design with several open-ended questions to examine the perceived effectiveness of the SMHI. The WPA recommends the use of focus groups as a means of monitoring anti-stigma programs and better understanding the needs of a specific group such as medical students (WPA, n.d.).

### **Participants**

In the quantitative component of this study, potential participants included all students from the Doctor of Osteopathic Medicine Program (D.O.) classes of 2017, 2018,

and 2019 during their second year at a northeastern medical school. The second-year cohorts each consist of approximately 250 students. Data were collected for three years of cohorts, as study participation was low from year to year. Out of approximately 750 potential participants, 129 participants completed the pre-SMHI survey prior to attending the program.

Potential participants were contacted by e-mail through a listserv for the D.O. classes of 2017, 2018, and 2019. The student organizers of the SMHI from the D.O. classes of 2017 and 2019 dispersed pre- and post-SMHI survey e-mails requesting voluntary participation; the class of 2018 was contacted through e-mail by a faculty advisor to participate. Five participants were excluded for not completing both surveys. The final study sample included nine students from the class of 2017, seven students from the class of 2018, and nine students from the class of 2019, contributing to a total of 25 participants included in this study.

The quantitative component received approval from the medical school's Institutional Review Board. Participants who met the inclusion and exclusion criteria were selected for the study. Inclusion criteria included being a second-year D.O. student at the medical school who was 18 years of age or older at the time of the SMHI event. Exclusion factors consisted of nonattendance at the SMHI regardless of completing the pre-SMHI survey, and completing the pre-SMHI survey and attending the event without completing the post-SMHI survey.

In the qualitative component of the study, a focus group was composed of two members of the D.O. class of 2019. For the class of 2019, participants could indicate whether they were interested in participating in a focus group discussing the strengths

and weakness of the SMHI at the end of the post-SMHI survey. Four participants volunteered and were sent a brief survey determining a convenient time for all participants to meet for the focus group. Two participants did not respond after two e-mail requests. Two participants indicated similar convenient times and participated in the focus group. Participation was voluntary and the focus group lasted 30 minutes. Both participants of the focus group were presenters at the SMHI.

**Measures**

**Demographic information.** Participant demographics are listed in Table 1.

Participants reported their age, gender, race, ethnicity, and undergraduate majors at the beginning of the pre-SMHI survey to provide demographic information. Most the study’s participants identified as Caucasian (88.0%) and female (68.0%).

Table 1

*Descriptive Statistics of Pre-SMHI Survey Participants (N = 129)*

Class	Gender		Age		
	Male	Female	18 to 24	25 to 34	35 to 54
2017	17	42	22	35	2
2018	21	23	19	24	1
2019	11	15	12	14	0
Total	49	80	53	73	3

**Social Distance Scale for Medical Students.** The Social Distance Scale for Medical Students (SD-MS) is a 6-item scale used to measure the amount of social distance between medical students and individuals with five different mental illnesses. The SD-MS was developed by the responsible investigator and a psychology faculty member for the purposes of this study, to be used as a brief scale to determine whether level of desired social distance changed after an anti-stigma program, and whether the change would be less significant for certain disorders, particularly schizophrenia. Responses on the SD-MS are measured by a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*completely OK*). The scale includes questions such as, “Would you be OK with your neighbor having managed schizophrenia?” and “Would you be OK with your physician having managed schizophrenia?” Each item is composed of these questions for each of the following mental health illnesses: depression, anxiety, bipolar disorder, schizophrenia, and substance abuse. In this way, each question had five different components when answering the question. The SD-MS had acceptable reliability for this sample, Cronbach’s  $\alpha = .79$ .

**Community Attitudes Towards the Mentally Ill.** The Community Attitudes Towards the Mentally Ill (Taylor & Dear, 1981) is a 40-item scale used to measure stigmatizing attitudes toward individuals with mental illness. The CAMI was developed from the Opinions of Mental Illness (OMI) scale, which examines attitudes toward those with mentally illness, and the Community Mental Health Ideology (CMHI) scale (Taylor & Dear, 1981). The CMHI examines an individual’s commitment to community mental health ideals. The CAMI incorporates three of five of OMI’s factors: authoritarianism, benevolence, and social restrictiveness. Because the CAMI was created to expand on the

OMI and include attitudes about the community, it was necessary to incorporate ideologies regarding community mental health. Responses on the CAMI were measured on a 5-point Likert scale that ranged from 1 (*strongly agree*) to 5 (*strongly disagree*). Items from the Authoritarian subscale include, “There is something about the mentally ill that makes it easy to tell them from normal people” and “Virtually anyone can become mentally ill.” The Benevolence subscale include items such as, “Mentally ill are a burden on society” and “It is best to avoid anyone who has mental problems.” Items from the Mental Health Ideology subscale include, “The best therapy for many mental patients is to be part of a normal community.” The Social Restrictiveness subscale was not included in this study because a previous study examined social distance attitude change through the SMHI program (Aggarwal et al., 2013). Each of the subscales has been shown to have good internal consistency (authoritarian,  $\alpha = 0.68$ , benevolence,  $\alpha = 0.76$ , social restrictiveness,  $\alpha = 0.80$ , and community mental health ideology,  $\alpha = 0.88$ ; Taylor & Dear, 1981). Taylor and Dear (1981) recommended the CAMI to be used with adults in the assessment of MHS. Cronbach’s alpha for this revealed scale revealed acceptable reliability, Cronbach’s  $\alpha = .85$ .

**Opening Minds Stigma Scale-for Health Care Providers.** The Opening Minds Stigma Scale-for Health Care Providers (OMS-HC; Modgill, Patten, Knaak, Kassam, & Szeto, 2014) is a 15-item self-report scale designed to evaluate anti-stigma interventions focused on healthcare practitioners. This scale was chosen because it has been shown to be effective to detect stigma change among healthcare providers and was developed specifically for this population. In addition, the OMS-HC has acceptable internal consistency when taken by medical students ( $\alpha = .75$ ). Respondents rate each item using

a Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Higher scores indicate a higher level of stigmatizing attitudes. Parallel analysis revealed three subscales: Attitude, Disclosure and Help-Seeking, and Social Distance. Items within the Attitude subscale include, “There is little I can do to help people with mental illness” and “I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness.” Items from the Disclosure and Help-Seeking subscale include, “I would be reluctant to seek help if I had a mental illness” and “I would see myself as weak if I had a mental illness and could not fix it.” The Social Distance subscale includes items such as, “I would still go to a physician if I knew that the physician had been treated for a mental illness” and “Employers should hire a person with a managed mental illness if he/she is the best person for the job.” The overall internal consistency of the scale was acceptable ( $\alpha = 0.79$ ; Modgill et al., 2014). The subscales all showed effective responsiveness among practicing healthcare professionals (Modgill et al., 2014). In addition, factor analysis has shown acceptable reliability and validity on all subscales (Struening & Cohen, 1963). Internal consistency for OMS-HC for the current study was moderate ( $\alpha = .66$ ).

**Level-of-Contact Report.** The Level-of-Contact Report (Holmes et al., 1999) is a 12-item checklist to determine level of contact the individual has had with severe mental illness (Holmes et al, 1999). For this study’s purpose, *severe mental illness* was changed to *mental illness*. Items were adapted by the scale authors from other scales used in stigma research and varied in level of contact from most intimate (“I have a severe mental illness”), to a low intimacy level (“I have observed, in passing, a person I believe may have had a severe mental illness”), to no contact whatsoever. Low levels of

contact were given low scores (1, 2), whereas an individual with a mental illness would receive 12 points for checking that item. Higher scores are indicative of a high level of contact with severe mental illness. Three experts ranked the level of situations with an inter-rater reliability of .83 (Holmes et al., 1999). Lastly, the phrase “my job” was changed to “my future job,” because the subject population consisted of medical students. This scale was administered to control for different levels of exposure and contact that could also explain attitudes of medical students toward individuals with mental health problems.

### **Procedure**

An e-mail requesting participation in this study was sent to all members of the D.O. class of 2017 on December 10, 2014 and was open for completion 1 week prior to the completion. This procedure was repeated for the second and third administration of the SMHI for the classes of 2018 and 2019. One exception was that potential participants from the class of 2019 were offered the option to enter a raffle for one of four Amazon e-gift cards for completing both the pre- and post-SMHI surveys. The e-mail was sent out 2 days before the events for the classes of 2018 and 2019. For the class of 2017, the e-mail was sent by the medical students who organized the SMHI, asking their peers to participate in a voluntary evaluation of the program run by a faculty member of the psychology department. The e-mail contained information about the purpose of the study, the possible risks and benefits of the surveys, and that the completion of the surveys was anonymous and de-identified. Potential participants accessed the survey by clicking on a link in the invitation e-mail. Students received explanations about the possible risks and benefits of the survey on its first page. Students who chose to

participate completed the pre-SMHI survey prior to attending the program, which took place in December 2014. Following the SMHI, students who attended and had completed the pre-SMHI survey were invited to complete a post-SMHI survey. The post-survey was available online for 2 weeks following the SMHI and distributed in an e-mail sent by the student organizers of the SMHI for the classes of 2017 and 2019. A faculty advisor sent the post-SMHI survey in the second year of data collection. The pre- and post-surveys were linked through an unidentifiable code the participants had created and used on both surveys. The code was created by the participant from the first two letters of the individual's mother's maiden name followed by month and date of the individual's birthday. The code was to be recognized easily by only the participant. In addition, the participants were asked to contact the lead investigator if they had an interest in participating in a follow-up focus group in 2018. No individuals volunteered from the class of 2018. In 2019, a link was provided for an Amazon gift card and an opportunity to volunteer for a focus group as well. The focus group was conducted with the class of 2019 in January 2017.

The responsible investigator was present for the SMHI held for the class of 2017 only. As the SMHI may change from year to year, the following was the procedure that occurred for the class of 2017. The SMHI for the class of 2017 was held in an auditorium on the medical school's campus. The morning began with a presentation by a psychology faculty member at the university. The presentation outlined the rates of mental illness and resources for those with mental health concerns. The faculty presenter acknowledged that she has had personal experiences with depression and anxiety and noted how much she would have appreciated a program such as the SMHI when she was

a graduate student. After her presentation, six student presenters from the cohort disclosed their personal experiences with mental health and what they had done to feel better. Students presented on depression, idiopathic sleep disorder, anxiety, and general mental health concerns. Two students shared about family members with mental illness and the impacted their lives. At the end of the peer testimonies, students were invited to ask questions. Next, the students were provided a break and were asked to reconvene in small groups to discuss the SMHI.

The small groups were led by peer volunteers who were given instructions for leading small discussion groups. Students were asked to reflect on their own experiences with mental health and their feelings regarding the SMHI. The responsible investigator did not attend the events for the class of 2018 or 2019, as the students were uncomfortable with anyone besides class members being present. Therefore, a detailed description of what stories were shared during those years was unavailable. It is known that peer presenters and an education component were included in all years of the SMHI, as confirmed by organizers of the event.

The qualitative component of the study was held in one focus group session. The focus group participants attended the SMHI and were a sample of convenience. Potential participants responded to a request of interest located at the end of the post-SMHI survey for the focus group by contacting the lead investigator. Participants met as an informal focus group regarding the effects of the SMHI and its limitations. The focus group included two program participants, both of whom were presenters at the event. The students met with the responsible investigator, who served as facilitator of the group. Before beginning the focus group, the responsible investigator read through the informed

consent form and addressed any questions before asking them to provide consent to participate in the focus group session. The session was audio-taped while the facilitator also recorded notes to capture any themes discussed in the focus group, as close to verbatim as possible. Proposed research questions were chosen by the responsible investigator to gain information about the most important aspects of the program, including participant perceptions and experience, program strengths and weaknesses, and outcomes. Questions about observed or projected behavior change as a result of the SMHI were also included in the focus group interview. Open-ended and probing questions were used to elicit the most detailed information possible. The following were the questions used for the focus group discussion:

1. In your opinion, what is the purpose of the SMHI?
2. What was the experience like to hear from your peers about their mental health issues?
3. What did you get out of the SMHI?
  - a. Did you learn anything new? If so, what?
  - b. How did your participation in SMHI affect the way you think about individuals with mental health issues?
4. What elements of the SMHI would you change in order to make it more effective?
5. Would you feel comfortable seeking psychological help from a professional for your mental health concerns?

The questions were determined prior to the event and no questions were changed because both participants were presenters. The main reason was that the investigator did not ask the participants whether they had been presenters prior to the event. The second

reason was that the information was still valuable, as the participants discussed how listening to their peers helped decrease the amount of internalized stigma they felt. The data collected from the focus group component of this study were examined using content analysis. Content analysis is a means to examine written and verbal communication with the purpose of gaining new ideas and concepts related to topic of choice (Krippendorff, 1980). Onwuegbuzic, Dickinson, Leech, and Zoran (2009) explained that classical content analysis is suitable for analyzing data from a focus group. This type of analysis is suggested when not much is known about a topic (Hsieh & Shannon, 2005). Because there was very little information regarding the effectiveness of peer-led anti-stigma programs prior to this study, content analysis was used with hopes of enhancing the knowledge gained through the quantitative component of this study.

## Chapter 5: Results

### Data Analysis

This study employed a repeated measures design. All statistical analyses were performed using SPSS statistical software, version 24. Descriptive statistics were used to describe the participant population. Chi-square analyses were used to determine cohort differences in specific demographics. The dependent variables for this study were responses on two measures that examine MHS and attitudes toward mental illnesses as measured by the CAMI, OMS-HC, and SD-MS. Two different statistical analyses were used to examine this data. Both tests were examined at an alpha level set at  $\alpha = 0.05$ . A mixed design univariate of variance (ANOVA) was used to analyze the first two study hypotheses. The mixed design ANOVA was selected to test the effect of the intervention on stigmatizing beliefs and attitudes about mental illness and any interaction or effect for level of contact to mental illness.

The dependent within-subjects variables for these analyses were measured by the CAMI and OMS-HC, which measured stigmatizing attitudes at a pre- and post-intervention time period. The between-subjects factor is level of contact. Originally, level of contact was to be a cofounding variable; however, due to low statistical power, level of contact was divided into low and high level categories. The groups were separated by score, with those scoring under 44 in the low level of contact group and those scoring 44 or above in the high level of contact group. The categories were divided at a score of 44 based on the mean of the sample,  $M = 43.76$ . Fourteen participants fell in the high level of contact group and 11 fell within the low level of contact category. A factorial repeated measures ANOVA was used to test the third hypothesis. The two-way

repeated measures ANOVA was selected to examine change in social distancing attitudes toward individuals with different mental illnesses, including depression, anxiety, bipolar, schizophrenia, and substance abuse disorders. An a priori power analysis conducted using G\*Power indicated that 35 participants were needed to find a medium effect size of .25 with .80 power.

### **Demographics**

Participants in the quantitative portion of the study included 25 second-year medical students at a northeastern U.S. osteopathic medical school. The surveys were collected from participants in the classes of 2017, 2018, and 2019. The pre-SMHI survey was completed by 129 participants. Nineteen percent of the 129 pre-SMHI survey participants completed both pre-and post-SHMI surveys. Thirty-three participants who did not complete the entire pre-SMHI survey and eight who completed the pre-SMHI survey did not complete the post-SHMI survey. Participants included 17 females and 8 males. Twenty-two participants (88%) identified as Caucasian; one participant (4.0%) identified as African American; and two participants (8.0%) identified as Asian. Fifteen participants of the study were in the 18 to 24-year age range and 10 participants reported to be aged 25 to 34 years. To determine whether there were significant differences in demographics from year to year, chi-square tests were performed. Pearson chi square analysis was used to determine whether the cohorts were significantly different. Because over 20% of cells had an expected count under 5, the likelihood ratio was analyzed. It was determined that there were no significant differences between the cohorts based on gender ( $\chi^2 (2) = 1.01, p > .59$ ), age ( $p > .48$ ), or race/ethnicity ( $p > .42$ ). Therefore, no

significant differences were found in the sample between class cohorts in the study.

Table 2 illustrates the sample demographics.

Table 2

*Descriptive Statistics of Sample (n = 25)*

Class	Gender		Age		Race/Ethnicity		
	Males	Females	18-24	25-34	White	African American	Asian
2017	2	7	4	5	8	1	0
2018	2	5	5	2	6	0	1
2019	4	5	6	3	8	0	1
Total	8	17	15	10	22	1	2

**Hypothesis 1**

To test the hypothesis that there would be a decrease in stigma as measured by the OMS-HC, a mixed design ANOVA was conducted. The original design was to be analyzed using a one-way multivariate of analysis of covariance (MANCOVA). The MANCOVA was selected to test the effect of the intervention on stigmatizing beliefs and attitudes about mental illness while controlling for level of contact the participants may have had with individuals with mental illnesses. The dependent variables for this analysis were measured by the CAMI and OMS-HC. Due to low participation and insufficient power, a mixed design ANOVA was employed. There was no significant effect of SMHI on stigma as measured by the OMS-HC,  $F(1,23) = .148, p = .704$ . In

addition, level of contact (high or low) did not have a significant effect on decreasing stigma,  $F(1,23) = 3.38, p = .079$ .

### **Hypothesis 2**

To test the hypothesis that there were increased positive attitudes toward mental health as measured by the CAMI, a mixed design ANOVA was conducted. This change may differ with high or low contact with mental illness of the participant. Mauchly's test of sphericity revealed significant results that indicated variances were not significantly different. To correct for this violation of the sphericity assumption, the Greenhouse-Geisser correction was used. The mixed design ANOVA revealed no significant effects of the SMHI on positive attitudes,  $F(1,23) = 2.17, p = .154$ . The SMHI did not have a significant effect on either the high or low contact of mental illness groups,  $F(1,23) = 3.26, p = .084$ .

### **Hypothesis 3**

To test the hypotheses that participants would express more negative attitudes about individuals with schizophrenia from pre-to post SMHI, a repeated measures 5 X 2 factorial ANOVA was conducted. Mauchly's test of sphericity revealed significant results that indicated variances between groups were not equal. To correct for this violation of the sphericity assumption, the Greenhouse-Geisser correction was used for analyzing the main effect of mental illness. A significant main effect of negative attitudes between type of mental illness was found,  $F(2.24,58.002) = 36.34, p < .05$ . These results indicate a significant difference of social distance imposed between the five mental illnesses: depression, anxiety, schizophrenia, substance abuse, and bipolar disorder. Follow-up comparisons indicated that pairwise differences for schizophrenia

differed between mental illnesses, ( $p < .01$ ) except for when compared to substance abuse. Attitudes toward bipolar disorder and substance abuse were significantly different than those toward anxiety or depression. Additionally, a significant main effect for social distance from pre- to post-test ( $F(1,24) = 7.76, p < .05$ ) was found, indicating that SMHI had an effect on change in social distance scores. Lastly, results indicated a significant interaction between mental illness and the pre- and post-test attitudes of the survey,  $F(4,96) = 6.16, p < .05$ . Table 3 depicts the pre-SMHI and post-SMHI means and standard deviations for each of the diagnoses. Figure 1 displays the pre- and post-test social distance scores for all five mental illnesses. Lower scores indicate higher social distancing.

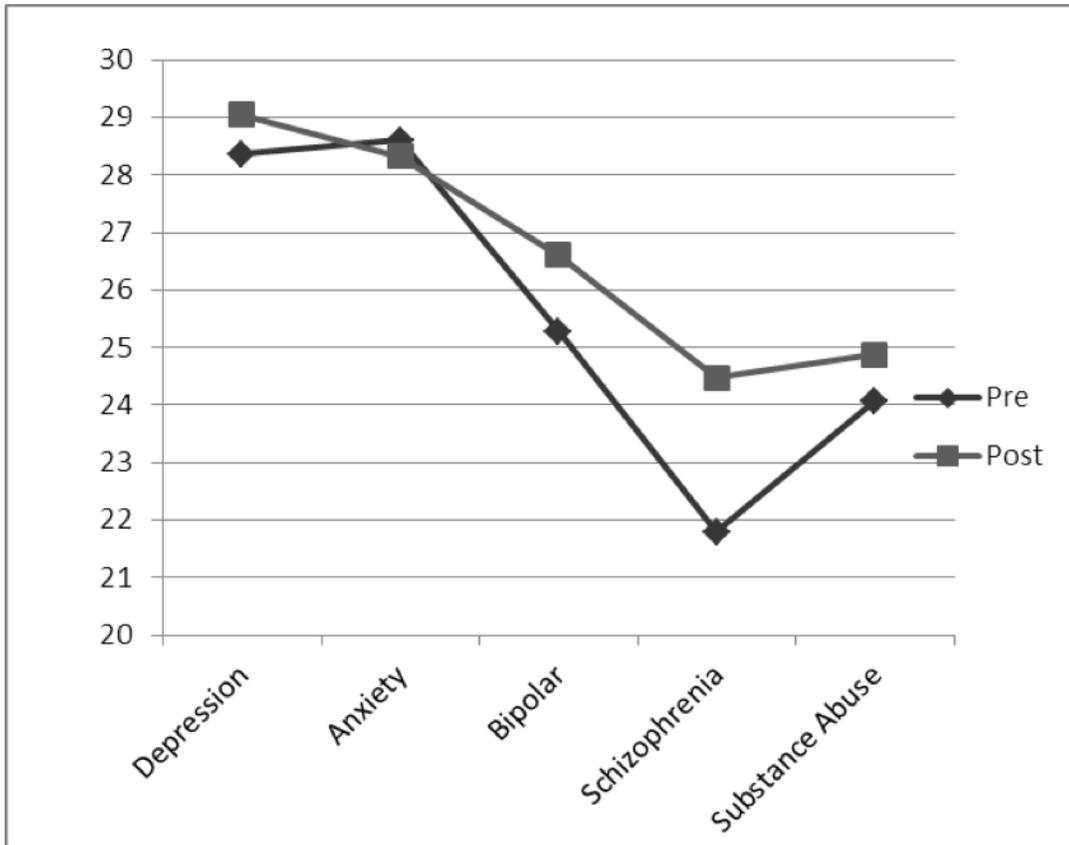
Table 3

*Mean Scores at Pre- and Post- Test (n = 25)*

	Pre-SMHI Mean (SD)	Post-SMHI Mean (SD)
OMS-HC	31.64 (5.43)	30.92 (6.47)
CAMI	58.44 (9.30)	56.12 (11.77)
SD-Anx	28.60 (2.10)	28.32 (3.06)
SD-Schiz	21.80 (3.89)	24.48 (4.18)
SD-BiD	25.28 (2.67)	26.60 (3.29)
SD-SubAb	24.08(4.17)	24.88 (4.69)
SD-Dpr	28.36 (2.06)	29.04 (1.97)

Figure 1

*Social Distance Change from Pre- to Post- by Mental Illness*



### **Qualitative Data Analysis**

A conventional content analysis approach was used in this study to gain more information about the effects of a peer-led anti-stigma program. The investigator transcribed the focus group session and read the transcription for chunks of information that could be grouped together. After information was chunked in small groupings, groupings were given a code. Next, it was determined how many times each code was discussed in the focus group.

Four themes emerged after analyzing the data. Codes were recorded as (a) increase in empathy, (b) increase in knowledge, (c) reduction in stigma, and (e) ways to change the SMHI. The first code was increase in knowledge of mental illness. Both participants, who had also been presenters at the SMHI, agreed that they gained new information from the SMHI. Narrative descriptions included, “I learned a lot of information that I didn’t know about bipolar disorder and schizophrenia and even when we got to them, the professors didn’t really do them justice” and “I got out of it in terms of a broader understanding to see how many people this affects.”

The next code was labeled as reduction in stigma, which can be defined as a decrease in negative attitudes and beliefs related to the self and others. Both participants shared that the event helped to normalize mental illness. Narrative descriptions included, “It was empowering to me, because we all had similarities” and “let go a little bit of the stigma associated with some of the other more stigmatized mental health issues.” One participant explained that he stigmatized certain mental illnesses more than others, and this was reflected in the quantitative results as well.

Another code created was increase in empathy, as both participants spoke of being more compassionate toward peers and patients. Narrative descriptions included, “I feel like I am more empathetic” and “become more empathetic.” Empathy was aimed at both patients and peers, and it is a construct studied often in literature on stigmatizing others. Research has shown that a decrease in stigma is correlated with an increase in empathy.

Lastly, the participants of the focus group commented on weaknesses of the SMHI, which is defined as areas of improvement for the anti-stigma event. Participants noted that the event was voluntary and this seemed to minimize its importance. Participants explained that faculty advisors did not feel comfortable making this mandatory due to the sensitive nature of disclosure and since disclosers were members of the same cohort.

## Chapter 6: Discussion

MHS significantly affects the treatment of individuals with mental health issues in medical settings. Anti-stigma programs that decrease stigmatizing attitudes and beliefs aimed at healthcare professionals are needed to combat this problem, as most medical school graduate programs do not include efforts to reduce stigma. It was hypothesized that the SMHI would decrease stigmatizing attitudes as measured by the OMS-HC and improve attitudes toward mental illnesses as measured by the CAMI. Scores on both the CAMI and OMS-HC were similar to other healthcare professionals' baseline scores and were less stigmatizing than the public (Modgill et al., 2014). The results of this study revealed no statistically significant difference in stigmatizing attitudes found from pre- to post-SMHI survey in a sample of medical students attending an anti-stigma program, as analyzed by three measures. One possible reason that scores did not change was that the stories shared were not under control of the investigator. For example, one medical student shared about idiopathic sleep disorder. Self-disclosure from this presenter most likely did not decrease stigmatizing attitudes in the same manner as someone who shared about a mental illness. Also, because the format changes from year to year, there is no way to standardize this event. Focus group participants shared that there was a video on schizophrenia during the SMHI they attended; however, there was no way to know whether a similar video was viewed by the class of 2018 cohort. Annual variability may produce different results from year to year.

Effective anti-stigma programs are needed in graduate and professional schools, and this study aimed to learn what components are most effective to change attitudes, beliefs, and behavior. One program that is beginning to yield positive results in students

is mental health first aid training, which aims to increase knowledge, help-seeking behavior, and decrease self-stigma (Burns et al., 2017). Mental health first aid is similar to the SMHI, as it targets both public and self-stigma. Although this study did not analyze change in help-seeking specifically, a review of the four items of the OMS-HC that have been correlated previously with help-seeking showed an increase, though not statistically significant, in self-reported help-seeking pre- to post-SMHI. One of the goals of the SMHI was to help promote more help-seeking among medical students, as research has shown that the impaired physician often does not seek medical help (Brooks, Gerada, & Chalder, 2011). Although some research points to personal testimonies as effective in decreasing stigmatizing attitudes, the SMHI was unique because presenters were members of the medical student cohort. Medical students can be considered a vulnerable population, as students do not engage in help-seeking behaviors out of fear of stigmatization (Hankir, Northall, & Zaman, 2014). Nonetheless, it is important to consider that the SMHI may be effective in decreasing stigmatizing beliefs in a larger sample size.

Results of this study revealed significant main effects of type of mental illness and SMHI, as well as interaction effects on amount of social distance reported by participants. The results were consistent with recent research findings. Reavley and Jorm (2011) found that individuals wanted more social distance when speaking about individuals with schizophrenia when compared to individuals with depression, social anxiety, and posttraumatic stress disorder. Other studies have yielded similar results, with participants wanting more social distance from individuals with schizophrenia (Anagnostopoulos & Hantzi, 2011) The current study supported these results except

when compared to substance abuse. One interpretation of these results could be that substance abuse remains very stigmatized in the media. Also, students may not have grouped substance abuse in with other mental illnesses prior to attending the SMHI. Results may have differed if there was a presenter or video clip of an individual recovering from substance abuse.

Research has shown that contact with individuals with mental illness often decreases stigma. In this study, low and high level of contact was divided into a between-subjects variable to determine the impact of level of contact with mental illness prior to the event. Results approached statistical significance, indicating that with greater power, level of contact may have impacted the change in stigma attitudes from pre- to post-SMHI survey.

Literature in which anti-stigma programs contain peer presenters is scarce. Peer presenters aimed to help decrease depression and anxiety and increase overall well-being did not produce significant results (Moir, Henning, Hassed, Moyes, & Elley, 2016). Nevertheless, one program, “The Wounded Healer Intervention” in England, that featured a physician with mental health problems yielded positive results; however the data have not been analyzed using standardized sigma measures (Hankir, Zaman, & Evans-Lacko, 2014). One notable result of Wounded Healer Intervention was that medical students came forward to self-disclose with the intent of breaking barriers. This action resulted in the process of reducing self-stigma (Hankir, Northall, et al., 2014). Self-disclosure often brings a sense of relief for the discloser (Moir et al., 2016). This was reflected in the current study as a sense of empowerment and reduction in self-stigma reported by presenters in the focus group portion of this study.

One barrier to the effectiveness of anti-stigma events or campaigns, including in the current research, was the voluntary nature of the event. As one participant of the focus group described, “by making it not a required thing, they made it less important.” The other participant added, “they continued to stigmatize.” The voluntary nature of the SMHI likely contributed to the nonsignificant results in the quantitative component, given the low level of participation. The low level of participation was especially evident in the current study’s focus group. Only two students elected to participate in the focus group and both had also been student presenters. Indeed, not making the SMHI mandatory may have signaled to students that participation in the initiative and its current evaluation was not as important as some of the rigorous expectations of medical school. Further, the low rate of participation in the evaluation component of the SMHI may have been a signal of a low level of interest in the topic of mental health concerns in the general medical school body. A review of the literature supports the idea that anti-stigma programs are usually a voluntary addition to training (Friedrich et al., 2013; Mino et al., 2001). It may be that individuals who attended voluntarily were individuals who were already more aware of mental illness or who have had personal experience with it. Medical students with more stigmatizing attitudes may be underrepresented, thus creating a bias in the current study.

Further, focus group participants explained that medical school faculty advisors to the SMHI feared that students could be affected negatively or “triggered” if all students were forced to go to the event and that, perhaps, the program could feature professionals in the field if this was a valid concern. Nevertheless, as one focus group participant

stated, “still, such stigma exists and if students never have the opportunity to hear about it, how are they ever going to talk to their patients about it?”

Findings of anti-stigma programs among medical students with personal testimonies have yielded similar results to this study. Results of such studies often yield mixed or nonsignificant results. Kassam and colleagues (2011) found an increase in knowledge and no significant effects for changes in attitudes or beliefs about mental illness. Although knowledge was not analyzed in this study, the qualitative component revealed findings that indicated an increase in knowledge after attending the event; however, this study does not support the literature that has found significant effects when medical students attend anti-stigma programs with user testimony and education components. The original study of the SMHI, which was titled MHAU, resulted in a decrease in reported social distancing and an increase in positive attitudes toward mental illness, which indicates the need for replications of the current study with a larger sample (Aggarwal et al., 2013).

### **Limitations**

One limitation of this study was the small sample size. The study was limited to medical students from one university who attended the SMHI. An additional contribution to the small sample size may have been the time and date of the SMHI. The voluntary event was held on Friday afternoons, a time when students typically were not required to be on campus. The small sample size led to limited statistical power, which significantly affected the detection of smaller effects in the quantitative component of the study. The qualitative portion only consisted of two participants who were both presenters and had experiences with mental illnesses.

Additionally, the qualitative component of this research was limited due to the self-selected nature of the participants. Individuals in the focus group included volunteers who may feel comfortable speaking about the study and were student presenters at the SMHI. The original goal of the focus group component was to help determine the strengths and weaknesses of the event. Because the group only included presenters, there was a significant bias, as presenters were likely to have less stigma and express less stigmatizing attitudes. These individuals are more likely to seek help for mental health issues because they have in the past. In addition, it is unknown whether the 25 participants included in the sample were presenters, thus creating additional bias in the quantitative component of the study. It is possible that the group of students in the cohort with more stigmatizing beliefs were underrepresented because they did not attend this voluntary event or elected not to participate in the evaluation research of the SMHI.

Another limitation of the current study is that it used a sample of convenience. All participants were from the same northeastern osteopathic medical school. Thus, there is a chance this sample of convenience does not represent the entire population of medical students. Therefore, the results may not be generalizable to other medical schools with different cultures. In addition, all medical schools present mental health in different formats and in different years of schooling. It is impossible to predict the level of exposure of medical students from school to school.

### **Implications for Future Research**

There are several implications for future research because evidence-based anti-stigma programs are necessary to decrease MHS and increase optimal patient care and help-seeking behaviors in medical students. It is beyond the scope of this study to

determine whether the SMHI will lead to behavior change among the medical students beyond the conclusion of the study. This pre/post study design did not include a longitudinal component necessary to determine any long-term effects of the SMHI program. Much of the literature reviewed stated the need for research examining the long-term effects of anti-stigma programs (e.g., Hankir, Zaman, et al., 2014). As one focus group participant noted, “I mean I feel like now, maybe it’s because I’m hyper aware right now, two weeks after the patient perspective. I feel like I am more empathetic, but that may be because I am in the situation of post talk.” It is imperative for future research to include a long-term component looking at behavior change. In addition, future quantitative and qualitative studies should examine the influence of initiatives such as the SMHI on help-seeking behaviors of medical students. Papish and colleagues (2013) found evidence of attitude change at a 3-month follow-up, but few other local anti-stigma programs have provided longitudinal follow-up data collection in their designs. No studies to date have looked at how decreased stigmatizing attitudes result in physician behavior change following medical education or during the individual’s residency. Longitudinal studies are needed to provide evidence of the lasting effects of anti-stigma programs, not just on possible attitude changes, but also to examine whether attitude changes also translate into actual behavior changes.

In addition, future research is needed to determine what influences student disclosure of mental illnesses and any lasting effects of that disclosure. Research has shown that some students are reluctant to disclose mental health issues due to the fear that it will hurt them professionally; however, the ADA of 1990 was intended to protect the rights of those with disabilities including mental illnesses. The law requires one to

show that this disability impedes one or more life activities and that one can perform the functions of one's duties with reasonable accommodations. Unfortunately, there is little research that documents whether Americans are fully aware of this law and what disabilities it protects. Research has shown that physicians often fail to seek treatment for fear of professional repercussions (Brooks et al., 2011). Likewise, MHS continues to affect medical students adversely. A recent meta-analysis revealed 27.2% of medical students endorsed symptoms of depression, with approximately 15% seeking help for these symptoms (Rotensein et al., 2016). In addition, healthcare professionals, including medical students, continue to stigmatize those with mental illnesses (Totic et al., 2012). If medical students were informed of their rights, research could examine whether more students were willing to disclose their mental illnesses prior to being in practice. The rationale would be that this research may help more individuals self-disclose and, in turn, decrease stigma and increase optimal patient care.

Lastly, future research is needed to examine the negative attitudes held by medical school faculty members. Because the SMHI is a peer-led initiative, there is no direct faculty involvement. The rationale is that students would learn from modeling by their clinical educators. If educators are willing to disclose mental illnesses, perhaps more students would feel comfortable disclosing as well. Research is needed to examine the level of stigmatizing attitudes of these educators and effectiveness of anti-stigma programs aimed at such professionals.

### **Implications for Future Training and Practice**

The reduction of MHS among healthcare professionals is essential for the proper treatment of those with mental illnesses. Individuals who are stigmatized often internalize negative attitudes, which results in self-stigma and decreases the chances of seeking help. If general practitioners are uncomfortable or are failing to assess for mental illness, perhaps the correct referrals to mental health treatment will be missed. The hope is that if physicians displayed non-stigmatizing attitudes, more individuals would receive proper care and seek treatment. It is important for psychologists working in interdisciplinary teams to educate and expose physicians to anti-stigma programs. If medical doctors ignore or mistreat mental illnesses, the result could be an increase in medical appointments and an increase in medical problems.

There is a need for anti-stigma programs to be a component of medical school training. The addition of anti-stigma programs to medical curriculum may allow for sustained change. Research on the OMS-HC scale showed the most sustained change after individuals were exposed to anti-stigma programs over the course of multiple years rather than one exposure (Modgill et al., 2014). Anti-stigma programs are typically offered as voluntary extensions of training. If attitude change can be sustained throughout graduate training, then hopefully this can translate to change in the workforce. Research is needed to determine whether there are any long-term effects of such programming. Perhaps if anti-stigma programs were part of training requirements, there would be a noticeable shift in attitude in future practitioners. Adding these programs to training for medical students is a system-wide problem, as it is important to have the backing of larger organizations that dictate the requirements for medical training.

**Conclusions**

There is a need for effective anti-stigma programs to combat MHS among medical students and for the added benefit of the future patients they serve. As the problem of mental health stigma becomes more visible in research and practice, there is a need for interventions that address these beliefs and attitudes. Little is known about which programs are most effective for medical students.

In addition, because programs are often voluntary, universities inadvertently continue to minimize the importance of such programs, which continues to stigmatize mental health as unimportant to medicine. As medicine moves toward integrated healthcare models, it is critical that medical students are trained to be competent to assess and work with those with mental illnesses.

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