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Philadelphia College of Osteopathic Medicine  
School of Professional and Applied Psychology  
Department of Clinical Psychology

DOES KNOWING THE MENTAL HEALTH HISTORY OF A MASS SHOOTER HEIGHTEN  
STIGMA AND NEGATIVE ATTITUDES TOWARD MENTAL ILLNESS?

By Lianna Artessa

Submitted in Partial Fulfillment of the Requirements for the Degree of  
Doctor of Psychology

November 2020

**PCOM SCHOOL OF  
PROFESSIONAL AND  
APPLIED PSYCHOLOGY™**

**DISSERTATION APPROVAL**

This is to certify that the thesis presented to us by Lianna Artessa, MSW, LSW, MS

on the 23rd day of April, 2020, 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.

**COMMITTEE MEMBERS' SIGNATURES**

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**ABSTRACT**

Mass-shooting incidents are an ongoing epidemic that continues to take countless lives. Despite the prevalence of gun-related mass-shooting events, the research on this phenomenon is scarce. Following these events, individuals often receive news from differing media outlets and programs. The current media portrayal of mass-shooting events often appears to support a widely accepted connection between mass shootings and mental illness. This portrayal may reflect an existing and perhaps growing misunderstanding and negative stigma toward individuals diagnosed with a psychiatric disorder. This experimental study sought to determine the degree to which individuals' attitudes toward and opinions of a perpetrator of a mass shooting are impacted by the shooter's diagnosis of a serious mental illness. Two hundred individuals were randomly assigned in equal proportions to read one of two vignettes involving a mass shooting act in which the perpetrator had a mental illness (MI, experimental condition) or perpetrator did not have a diagnosis of mental illness (NOMI, control condition). It was hypothesized that participants who were exposed to the mental illness (MI) vignette would have significantly higher negative attitude scale scores, as measured by the CAMI, toward those with mental illness as compared to individuals exposed to the non-mental illness (NOMI) vignette. Additionally, it was hypothesized that participants who read the MI vignette would suggest a more severe penalty than that suggested by participants who read the NOMI vignette. Results did not support these hypotheses, as there were no significant between-group differences found. The hope is that this research will offer insights for better understanding stigma associated with mental illness and perhaps ways to mitigate it.

## CHAPTER 1: INTRODUCTION

### Statement of the Problem

Despite the growing acceptance of mental illness as a chronic condition that can be treated, research suggests mental illness is still among the most stigmatized health conditions. According to findings from the most recent nationally representative study of public attitudes toward mental illness in the United States, 42% of Americans aged 18 to 24 years believe people with mental illness can be successful at work, 26% believe that others have a caring attitude toward those with a mental illness, and 25% believe that people with mental illness have a chance at recovery (National Alliance for the Mentally Ill- Greater Chicago, 2013). Negative attitudes toward mental illness are most apparent in the attributions that people make about criminal behavior.

People often receive inaccurate and negative information from the media regarding mental illness, thus reinforcing bias against people with mental illness and cultivating new negative associations about having a mental illness (Stuart, 2006b). Stigmatizing information concerning mental illness can be especially powerful in shaping individuals' stereotypes and attitudes regarding mental illness when first-hand experience or knowledge is lacking (Parrott & Parrott, 2015). Such information is especially problematic because stereotypes represent an initial step in stigmatization, informing attitudes and subsequent prejudicial behavior (Link & Phelan, 2014). Mental illness labels in particular have been connected with perceived threats of violence, resulting in an increased desire for social distance from these individuals (Link et al., 1987).

Media and public descriptions of perpetrators of mass shootings often describe these individuals as mentally ill (Fox & DeLateur, 2014). Studies indicate that the media often

presumes that perpetrators have a mental illness because of a willingness to commit mass murder conforms to popular, yet unsupported, understandings of a mental disorder (Duxbury et al., 2018). Assumptions of mental illness following a crime fills in for abnormal or inexplicable behavior, perpetuating negative stereotypes that may lead to bias (Duxbury et al., 2018). Some researchers argue that recent attention to the mental health of mass shooters may be a cultural reaction to heightened sensational events during which victims are injured or murdered in shared public spaces (McGinty, Webster et al., 2014).

Mass murder is a crime that often creates much public interest and results in numerous attempts to understand exactly who typically commits such crimes and what their motivations are (Taylor, 2018). In recent years, mental illness has emerged as a leading narrative for mass shooting and extreme gun violence incidents (Fox & DeLateur, 2014). Previously, coverage after mass shootings discussed potential causes of the events as domestic terrorism, reactivity to environmental stressors, and retribution for bullying. However, following such events as the Sandy Hook shooting in 2012, the narrative appeared to shift its focus primarily to mental health (Fox & DeLateur, 2014).

Conversations following a mass-shooting incident often center on mental health. Unfortunately, these discussions are often rife with inaccurate information that may lead to bias or negative stereotypes. For example, mental illness has been overstated as a reason to strengthen gun control and is often conflated in both press and academic literature (Fisher & Lieberman, 2013). Media images of mental illness, both in news and entertainment, often portray those with mental illness as dangerous, violent, or unpredictable (Hoffner et al., 2017). News coverage of violent crimes committed by individuals alleged to have a mental illness may perpetuate negative public stigma and bias (McGinty, Webster et al., 2014). Information that



portrays mentally ill individuals as disturbed often garners public attention and reinforces the popular belief that mental illness results in violence (Swanson et al., 2015). Metzl and MacLeish (2015) noted that “Issues become obscured when mass shootings come to stand in for all gun crime and when ‘mentally ill’ ceases to be a medical designation and becomes a sign of violent threat” (p 242).

Significant national attention has been given to people with apparent mental illnesses who commit acts of gun violence. These violent acts have enormous implications for the public’s view of people with mental illness, often by increasing stigma and discrimination, as well as for the creation of mental health policy and gun legislation. Public policies and perception are shaped by highly publicized and highly unusual incidents of gun violence, which are unhelpful for people with mental illnesses, as well as counterproductive for the formation of sound, effective policy and legislation (Steadman et al., 2015).

On average, gun violence ends the lives of nearly 100 people every day in the United States (Krisberg, 2018). According to the Centers for Disease Control and Prevention (CDC), firearms were responsible for more than 36,000 deaths in 2015, 1,300 of which were of children (Krisberg, 2018). In 2016 alone, firearms were responsible for 38,658 deaths (Barry et al., 2018). Gun violence is an ongoing epidemic that continues to take lives. Yet, despite the prevalence of gun violence, both scientific data and research and federal funding to further study and understand the nation’s gun violence problem are lacking (Krisberg, 2018).

Advocates for legislation on mental illness and firearms argue that smart, comprehensive gun legislation is warranted for the protection of individuals with mental illness and for public safety. Some states are not required to report mental health information to the agencies performing background checks, and there is no standard regarding the information that must be

reported (Bramble, 2014). Most state laws regarding mental health reporting are limited to individuals who have been committed to inpatient psychiatric treatment, thereby omitting a large portion of individuals who struggle with mental illness but who have not been involuntarily committed to a psychiatric facility (Gifford's Law Center to Prevent Gun Violence, 2018). Only a handful of states, including California, Hawaii, Illinois, Michigan, Pennsylvania, Vermont, and Wisconsin, specifically mandate the reporting of individuals ordered to receive outpatient mental health treatment (Gifford's Law Center to Prevent Gun Violence, 2018).

Gun violence continues to tragically impact the United States. Each year there is an average of 24 mass shootings, during which four or more individuals are killed by a gun (Everytown for Gun Safety, 2014). After such events, legislators, the media, and the public struggle to make sense of the violence and seek solutions to prevent future violence (Horwitz et al., 2015). Proposed policy often focuses on mental illness, based on the unsupported connection between mass shootings and mental illness, and an unsubstantiated attribution of dangerousness to people with mental health disorders (Horwitz et al., 2015). Regarding gun violence prevention policy, for which federally funded research has been halted for nearly 20 years, evidence regarding the public-health implications of firearm violence is imperative (Rivara, 2013). Data-driven interventions and legislation played a large role in reducing motor vehicle deaths, and the same opportunity exists for firearm deaths (Rivara, 2013). Conducting research and communicating findings to stakeholders and policymakers may help to facilitate evidence-based policy, improve public safety, and save lives. This study was designed to examine the degree to which information about mass shooters and implications of mental illness generally impact individuals' attitudes about mental illness.

### **Purpose of the Study**

Shock, outrage, confusion, sorrow. In the aftermath of mass shootings individuals often experience an array of emotions. Mass shootings have become commonplace in the United States: the Las Vegas music festival in 2017 where 59 were killed and 527 were injured, the Texas church shooting in 2017 where 26 were killed and 20 were injured, the Orlando night club massacre in 2016 where 49 were killed and 53 were injured; San Bernardino in 2015 where 14 were killed and 21 were injured; the list goes on (Jurkanin, 2018). Mass-shooting incidents are an ongoing epidemic that continues to take lives. Despite the prevalence of gun-related mass-shooting events, research on this phenomenon is scarce (Krisberg, 2018). The current media portrayal of mass-shooting events appears to support a widely accepted connection between mass shootings and mental illness that is critically important to explore (Horwitz et al., 2015). This portrayal may reflect an existing and perhaps growing misunderstanding and negative stigma toward individuals diagnosed with a psychiatric disorder. The objective of this research was to examine some of the attitudes, beliefs, and opinions held by individuals toward those who commit mass murder, as well as to better understand individuals' attitudes and levels of empathy toward those with mental illness. This study was designed to examine the degree to which individuals' attitudes toward, beliefs regarding, and opinions of a perpetrator of a mass shooting are impacted by the shooter's diagnosis of a serious mental illness.

This study assigned individuals to read one of two vignettes depicting a mass-shooting incident. The vignettes, written in a news report style, depicted identical scenarios, with the only difference being that the first vignette indicated that the perpetrator had a diagnosis of schizophrenia (mental illness, MI). The second vignette did not state a diagnosis of schizophrenia (no mental illness, NOMI).

## Hypotheses

### Hypothesis 1

H<sub>1</sub>: Participants who are exposed to the MI vignette will report significantly greater stigmatizing attitudes toward MI as compared to individuals in the NOMI vignette, as measured by the CAMI Social Restrictiveness Scale.

Rationale for H<sub>1</sub>: Mental illness receives significant attention in the United States' dialogue on gun violence, despite evidence showing that most people with mental illness are never violent (McGinty, 2018). Messages linking mental illness with gun violence may only increase stigma and negative feelings toward those with mental illness (McGinty, 2018).

### Hypothesis 2

H<sub>2</sub>: Participants assigned to read the MI vignette will suggest a more severe penalty than that suggested by participants exposed to the NOMI vignette, as indicated by the penalty question and CAMI Authoritarianism subscale.

Rationale for H<sub>2</sub>: Angermeyer and Matschinger (2003) found in their study that labeling someone as having a mental illness has an influence on public attitudes toward people with schizophrenia. Additionally, they found that supporting a stereotype of dangerousness has a strong negative effect on the way people react to someone with schizophrenia and increases the likelihood that those persons will seek social distance from the person with mental illness. Therefore, the labeling effect argues that, regardless of specific psychiatric diagnosis or level of disability, a person identified as mentally ill will be stigmatized more harshly than those with other health conditions.

**Exploratory Analyses**

A significantly larger proportion of participants who are exposed to the NOMI vignette will infer that the perpetrator has a serious mental illness when one is not specified.

Researchers have found that the use of situational causes to explain another's behavior can be complex and cognitively demanding, whereas dispositional attributions are far less taxing and do not demand such significant cognitive resources. The cognitive capacities of individuals are a potentially important factor in determining the likelihood of using dispositional or situational causal attributions to explain a tragedy, such as a mass shooting or, more specifically, the perpetrator of the incident.

## CHAPTER 2: REVIEW OF THE LITERATURE

### Mental Health and Mental Illness

Mental illness is widespread in the United States. Millions of individuals of all ages and backgrounds are suffering from different forms of mental illness. According to the National Alliance on Mental Illness (NAMI, 2015), approximately 1 in 5 adults in the United States, roughly 43.8 million individuals, experience mental illness. Mental illness can be defined as a condition that affects a person's thinking, feeling, or mood and can affect the ability to relate to others and function each day (NAMI, 2018).

Although mental illness is associated with a statistically significant increased risk of violence, most people with mental illness are never violent (McGinty, 2018). In the longitudinal National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; wave 1, 2001-2002; wave 2, 2004-2005), the 12-month prevalence of any violent behavior was .8% among people with no mental illness, 1.7% among people with any mental illness, and 2.9% among people with serious mental illness (as cited in McGinty, 2018).

Following mass-shooting incidents, both the mental health system and gun control laws are scrutinized as a distressed nation asks how these tragedies could have been prevented. Four assumptions typically arise in the aftermath of a mass shooting: (a) mental illness causes gun violence, (b) psychiatric diagnoses can predict gun crime, (c) shootings represent the deranged acts of mentally ill loners, and (d) gun control will not prevent another mass shooting (Metzl & MacLeish, 2015).

In the United States, popular and political dialogue often focuses on the causal impact of mental illness in the aftermath of mass shootings. For example, the media was quick to diagnose the shooter at Sandy Hook Elementary in Newtown, Connecticut, with schizophrenia days after

the tragic school shooting. In the months following the December 2012 shooting in Newtown, several states passed bills that required mental health professionals to report so-called “dangerous patients” to local officials, who would then be authorized to confiscate any firearms owned by these individuals (Metzl & MacLeish, 2015).

These associations may seem reasonable or make sense on a number of levels. Mass-shooting incidents involving the murder of school children by using military grade semiautomatic weapons must fall outside the bounds of sanity: Who but an insane person could commit such horrifying acts (Metzl & MacLeish, 2015)? Undeniably, people who have demonstrated violent tendencies should not have access to weapons they could use to harm themselves or others. However, beliefs that mental illness caused a particular shooting or that advance psychiatric attention could have prevented the crimes are more complicated than they may seem.

Little population-level evidence supports the idea that individuals diagnosed with mental illness are more likely than anyone else to commit gun crimes (Metzl & MacLeish, 2015). According to Appelbaum (2006), fewer than 3% to 5% of crimes in the United States involve people with mental illness, and the percentages of crimes that involve guns are lower than the national average for people not diagnosed with a mental illness. Databases that collect information on and track gun homicides, such as the National Center for Health Statistics, shows that fewer than 5% of the 120,000 gun-related killings in the United States between 2001 and 2010 were perpetrated by people with a diagnosed mental illness (Metzl & MacLeish, 2015).

Mental illness continues to receive noticeable attention in the United States’ dialogue on gun violence, despite evidence demonstrating that most people with mental illness are never violent (McGinty, 2018). Messages associating mental illness with gun violence only increase

negative attitudes and stigma, affecting treatment rates and other negative outcomes among people with a mental illness (McGinty, 2018). Nevertheless, mental illness continues to be a prevalent topic in this country's gun violence discussions. Mass-shooting events often prompt conversations about mental illness and gun violence. Research quantifying the relationship between mental illness and mass shootings specifically is not readily available because of the statistically infrequent nature of mass shootings. However, the evidence suggests that many mass shootings, as with other types of gun violence, are driven by factors with stronger links to violence than to mental illness (Swanson et al., 2015).

### **Gun Violence and Mass Shootings**

Mass shootings are defined as an active shooting during which four or more victims are shot in a single event, excluding the perpetrator (Duxbury et al., 2018). Everytown for Gun Safety (2018) published an executive summary report titled, *Mass Shootings in the United States*, to better assess the reality of mass shootings in the United States and to identify policies that could prevent these tragedies. Everytown tracked mass shootings in the United States from 2009 until the end of 2017.

Several important pieces of data are in the report. First, from 2009 to 2017, at least 173 mass shootings occurred in the United States. The year 2017 was the deadliest year on record for mass shootings, with 4 times as many people killed in mass-shooting incidents in 2017 as compared to the average of the 8 years prior. In at least one third of the incidents, the shooter was legally prohibited from possessing a firearm at the time of the shooting. Lastly, in the mass shootings that involved the use of high-capacity magazines, there were twice as many fatalities and 14 times as many injuries on average compared to those that did not (Everytown for Gun Safety, 2018).



To identify the 173 mass shootings included in the analysis, Everytown compiled data from media reports, police and court records, and public databases for every identified shooting between 2009 and 2017. In the 9 years between 2009 and 2017, mass shootings resulted in at least 1,793 people shot, including 1,001 people shot and killed and 792 shot and injured. One in five victims was younger than the age of 18 years (Everytown for Gun Safety, 2018).

By most estimates, fewer than 200 mass shootings were reported in the United States between 1982 and 2012 (Follman et al., 2014). Since the early 1980s, broadening of diagnostic categories has been consistent and the number of individuals classifiable as mentally ill has been expanding (Metzl & MacLeish, 2015). During this same time, a number of seminal studies asserting links between violence and mental illness have been criticized for overstating connections between serious mental illness and violent acts (Horwitz, 2003).

Media reports following mass-shooting events often assume a binary distinction between mild and severe mental illness and connect the latter to lack of self-control and unpredictability (Metzl & MacLeish, 2015). However, this too has been called into question by mental health researchers. A number of the most common psychiatric diagnoses, including depression, anxiety, and attention deficit disorders, have no correlation with violence whatsoever (Johns Hopkins Center for Gun Policy and Research, 2013).

A number of studies suggest that a multitude of risk factors more strongly correlate with gun violence than with mental illness alone (Metzl & MacLeish, 2015). For example, alcohol and drug use increase the risk of violent crime sevenfold, even among individuals with no history of mental illness (Metzl & MacLeish, 2015). According to Van Dorn et al. (2012), a history of childhood abuse, binge drinking, and male gender are all predictive risk factors for committing serious violent crimes. Additionally, a number of studies argue that laws and policies that enable

firearm access during emotionally charged moments are more strongly correlated with gun violence than with mental illness (Metzl & MacLeish, 2015). Undoubtedly, certain individuals with mental illness commit violent acts. However, the evidence suggests that mass-shooting incidents represent statistical abnormalities that reveal more about horrible incidents than they do about population level events (Metzl & MacLeish, 2015).

### **Gun Policy and Legislation**

Included in their annual 2018 report, Everytown for Gun Safety examined current policies and legislation with hopes to better improve them and decrease the number of mass-shooting incidents in the United States. The damage posed when guns are in the wrong hands is particularly apparent in mass shootings. In their 2018 annual report, Everytown for Gun Safety found that in at least one third of mass shootings, the shooter had been legally prohibited from possessing firearms at the time of the shooting. The discussion of mental illness in the gun policy debate, while necessary, may serve as another instance where mentally ill individuals are stigmatized as being violent.

### **Mental Illness: Prejudice, Bias, Stigma, and Discrimination**

According to the Centers for Disease Control and Prevention (CDC; 2012), people's beliefs and attitudes toward mental illness often set the stage for how they interact with, provide opportunities for, and help support a person with mental illness. People's attitudes and beliefs toward mental illness generally frame the experience and expression of their own emotional challenges and psychological distress, specifically whether they will disclose their symptoms or seek care (CDC, 2012). Attitudes about mental illness are shaped by individuals' personal knowledge of mental illness, experience with knowing or interacting with someone living with mental illness, stereotypes about mental illness, and consumption of media stories and news

(Corrigan et al., 2004). When attitudes and beliefs are expressed positively, they may result in supportive and inclusive behaviors (e.g., willingness to hire a person with mental illness, willingness to live with a person with mental illness; CDC, 2012). On the contrary, when attitudes and beliefs toward those with a mental illness are expressed negatively, they may result in avoidant behaviors, exclusion from activities, and, in the worst case, discrimination and exploitation (CDC, 2012).

Stigma is described as “a cluster of negative attitudes and beliefs that motivate the general public to fear, reject, avoid, and discriminate against people with mental illnesses” (President’s New Freedom Commission on Mental Health, 2003, p. 4). When stigma leads to social exclusion or discrimination, it can result in unequal access to resources, including educational and employment opportunities, supportive relationships with friends and families, and access to quality healthcare (Corrigan et al., 2004; Link & Phelan, 2000). Stigma can be perceived or felt by an individual in the absence of being discriminated against and is the result of internalized perceived negative attitudes (CDC, 2012). Whether perceived or experienced, stigma often leaves individuals with a pervasive and underlying sense of being different from others (CDC).

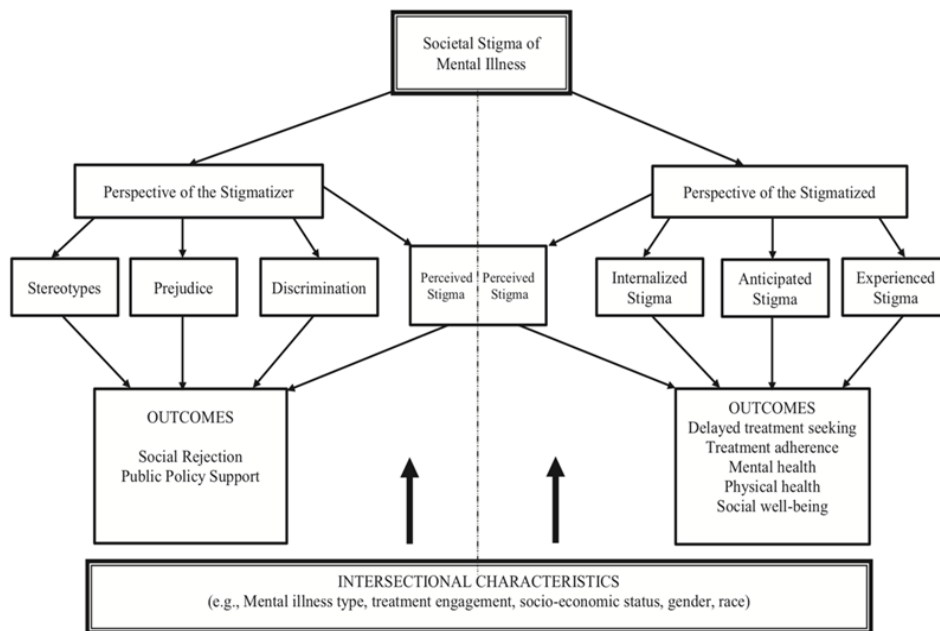
According to the National Alliance for the Mentally Ill (2013) and the Substance Abuse and Mental Health Services Administration (SAMHSA; 2008), only 42% of Americans aged 18 to 24 years believe people with mental illness can be successful at work, 26% believe that others have a caring attitude toward people with mental illness, and 25% believe that people with mental illness can recover from their illness. Furthermore, a strong body of evidence demonstrates that people with mental illness experience discrimination in nearly every area of

their lives, including employment, housing, and medical care (Corrigan, Thompson et al., 2003; Stuart, 2006a; Thornicroft et al., 2007).

One of the challenging aspects of studying stigma is the inconsistent terminology across disciplines. For example, the literature on mental illness stigma does not always incorporate concepts relevant to both the stigmatizer and the stigmatized. To address some of the limitations in the literature, Fox et al. (2018) developed the Mental Illness Stigma Framework (MISF; Figure 1). The MISF was informed by a number of prominent mental illness stigma theories, conceptualizations, and concepts, including modified labeling theory, social-cognitive theory of public and self-stigma, and the construct of internalized stigma (Fox et al., 2018).

Figure 1

*Mental Illness Stigma Framework*



Authors of the MISF pose the question, “How do individuals understand, respond to, and experience mental illness stigma?” Current research on mental illness stigma at an individual level funnels into two categories: research focused on the individual doing the stigmatizing, often the general public, and on those on the receiving end of stigmatization (e.g., individuals with mental illness or a history of mental illness; Fox et al., 2018). The MISF separates stigma mechanisms accordingly, consistent with existing theories and definitions of stigma (Bos et al., 2013; Clement et al., 2015; Pescosolido & Martin, 2015; Pryor & Reeder, 2011; Van Brakel, 2006).

According to the literature, the three mechanisms most relevant to individuals who do not have or have never had a mental illness are stereotypes, prejudice, and discrimination (Fox et al., 2018). These mechanisms represent the cognitive, affective, and behavioral responses people may have toward someone who has a devalued identity (Fox et al., 2018). Stereotypes are beliefs, or *cognitive schemas*, about the behaviors and characteristics of groups of people (Corrigan et al., 2005; Dovidio et al., 2010; Stangor, 2009) and represent the cognitive response to someone with mental illness stigma. The core stereotypes associated with mental illness include dangerousness, incompetence, weakness of character, and dependence (Feldman & Crandall, 2007).

The affective element of mental illness stigma is reflected in prejudice, defined as the emotional reaction or feelings that people have toward a group or member of a group (Stangor, 2009). Typically, these feelings are negative, although they do not necessarily need to be. The most common forms of prejudice toward people with mental illness are fear, pity, and anger (Corrigan et al., 2005). Prejudice is often linked to stereotypes, such that the stereotype of dangerousness may lead to feelings of fear. Prejudice toward people with mental illness is often

also expressed or experienced as anxiety, which may serve as an antecedent to the behavioral aspect of stigma, discrimination. Discrimination is defined as the unfair or unjust behaviors directed at individuals, which exist along a continuum from subtle to overt, but which result in differential and disadvantaged treatment of the stigmatized (Pescosolido & Martin, 2015). The four types of discrimination directed toward people with mental illness as described in the literature are withholding help, avoidance, segregation, and coercion (Corrigan & Watson, 2002).

People's attitudes and beliefs often inform their actions and behaviors (Ajzen & Fishbein, 1980). Unfortunately, studies focused on tracking attitudes toward mental illness do not routinely occur (CDC, 2012). Research has attempted to provide important snapshots of attitudes toward mental illness; however, in-depth studies distinguishing between attitudes relative to perceived or experienced stigma, studies that link attitudes to actual behavior, or studies that track attitudes toward those with mental illness do not commonly occur (CDC, 2012). The limited, cross-sectional studies that do exist share little about shift in attitudes in relation to historical events (e.g., media oversensationalization of the rare violence associated with a person with mental illness) or shift in attitudes over time in the same people (CDC, 2012).

Research indicates that stigma linked to mental illness is complex, multifaceted, and often politicized (Metzl & MacLeish, 2015). Owing to the shortage in research, further studies and examination of evidence are warranted. The present study sought to examine the connection between mental illness and stigma among individuals who read a vignette describing a mass-shooting incident. Improving understanding of these attributions may help to identify strategies to decrease bias and discrimination toward those with mental illness.

## **Theories**

### **Attribution Theory**

Stigma associated with serious mental illness is widespread and has significant negative consequences for those who have a mental illness (Larkings et al., 2017). Beliefs about the causes of mental illness, or causal beliefs, can influence perceptions of and stigma toward those with mental illness (Kvaale et al., 2013). Attribution theory, a social-cognitive model, provides a framework for understanding relationships between causal beliefs and mental illness stigma. Attribution theory explores how the perceived causality of an event, such as mental illness, gives rise to different affective responses, possibly resulting in discriminatory behaviors and stigmatized beliefs (Larkings et al., 2017). Inferences about causality and responsibility result in emotional reactions that can influence one's behavior and stigma (Corrigan, Markowitz et al., 2003).

### **Attribution Bias and Error**

Following a mass-shooting incident, public concern, media attention, and scrutiny often increase. Questions about the cause of this tragedy or who is responsible often occur. According to Joslyn and Haider-Markel (2013), the answers to these questions may lie in the tendency of people to attribute another person's behavior to that person's personality or dispositions, as opposed to environmental or situational factors. Referred to as a fundamental attribution error, individuals frequently cite the perpetrator's character or beliefs as the reasons for the crime, rather than recognizing the potential power of situational forces, such as lenient gun control laws, institutional disregard of the mentally ill, or persistent exposure to violence, on an individual's behavior (Joslyn & Haider-Markel, 2013).

Researchers have found that the use of situational causes to explain another's behavior can be complex and cognitively demanding, whereas dispositional attributions are far less taxing and do not demand such significant cognitive resources. The cognitive capacities of individuals are a potentially important factor in determining the likelihood of using dispositional or situational causal attributions to explain a tragedy, such as a mass shooting, more specifically, the perpetrator of the incident (Joslyn & Haider-Markel, 2013).

### **Types of Attributions**

Heider (1958) argued that people strive to predict and control their environments. Understanding the causes of events and behaviors helps individuals achieve control. Therefore, causal attributions offer an important guide to understanding attitudinal and behavioral responses to inferred causes. Two types of attributions are internal and dispositional and external and environmental. An internal attribution suggests that the character, attitudes, personality, or dispositions of individuals cause their behaviors; the cause of the behavior is the individuals themselves. On the contrary, external attributions find that the environment or social context is the cause of the behavior. Essentially, individuals act because of causes in the social setting that compel them to action rather than because of individualized characteristics (Joslyn & Haider-Markel, 2013).

### **Labeling Theory**

Labeling theory, a social-cognitive model, suggests that once a person is labeled as mentally ill, preexisting stereotypes are activated, in that people generally believe the mentally ill person to be threatening and socially undesirable (Sibicky & Dovidio, 1986). Based on these perceptions of individuals with mental illness, people often alter their behaviors in preparation for interacting with those who are mentally ill. Angermeyer and Matschinger (2003) found that



labeling someone as having a mental illness has an influence on public attitudes toward people with schizophrenia. Additionally, they found that supporting a stereotype of dangerousness has a strong negative effect on the way people react to someone with schizophrenia and increases the likelihood that persons will seek social distance from the person with mental illness. Therefore, the labeling effect argues that, regardless of the specific psychiatric diagnosis or level of disability of a person, a person identified as mentally ill will be stigmatized more harshly than those with other health conditions.

### CHAPTER 3: METHOD

Each year there is an average of 24 mass shootings, during which four or more individuals are killed by a gun (Everytown for Gun Safety, 2014). The objective of this research is to examine some of the attitudes, beliefs, and opinions held by individuals toward those who commit mass murder, as well as to better understand individuals' attitudes and levels of empathy toward persons with mental illness. This experimental study examined the degree to which individuals' attitudes toward, beliefs about, and opinions of a perpetrator of a mass shooting are impacted by the shooter's diagnosis of a serious mental illness. This study employed a quantitative between-group design to understand individuals' attitudes toward, beliefs about, and opinions of perpetrators of mass-shooting incidents. Participants were randomly assigned to one of two vignettes of equal proportions using the computer-generated program REDCap and received the survey link on Amazon Mechanical Turk (MTurk), an online platform designed to assist with data collection. The survey was created on REDCap and distributed on MTurk.

#### **Participants**

Participants in this study included 200 individuals ( $N = 200$ ) recruited through the MTurk program. Participants were assigned by Mturk to one of two vignettes of equal proportions. Estimating a medium effect size with an alpha of .05, approximately 200 individuals (100 per vignette condition) would be required to achieve statistical power of .8. Individuals included were quite diverse in age, sex, ethnicity, race, and education. The participants were compensated through MTurk for their participation.

#### **Inclusion and Exclusion Criteria**

The only criterion that the prospective participants were required to meet to be eligible for this study was to be between the ages of 18 and 80 years.

Exclusion criteria included having been witness to or directly involved in a mass-shooting incident. Additionally, if participants had served on a jury in a trial regarding a firearm incident, they were unable to participate in the study. Lastly, participants were excluded from the study if they had a history of psychiatric hospitalization or intensive treatment for a severe psychiatric disorder.

### **Screening and Recruitment**

Potential participants were recruited online through the MTurk program.

### **Measures**

Participants responded to two identical hypothetical scenarios of mass-shooting incidents occurring in the same setting, both involving unlawful behavior engaged in by an individual. One scenario mentioned mental illness; the other scenario did not. The vignettes were modeled after a 2018 *New York Times* article, “Death Toll Is at 17 and Could Rise in Florida School Shooting,” by Audra D. S. Burch and Patricia Mazzei. The article described the school shooting at Marjory Stoneman Douglas High School in Parkland, Florida (Burch & Mazzei, 2018).

The Community Attitudes toward the Mentally Ill (CAMI) was developed by Taylor and Dear (1981), using the two most previously widely used scales, the Opinions about Mental Illness Scale and the Community Mental Health Ideology Scale (Taylor & Dear, 1981). The CAMI operationally defines mental illness as referring to people needing treatment for mental disorders but who are capable of independent living outside of a hospital. Participants were asked to respond to questions regarding their beliefs about people with mental illness. The questionnaire consisted of 40 statements, each requiring a rating of the participant’s degree of agreement or disagreement on a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The CAMI yields four attitude factor scores, each calculated by adding the 10

relevant items and then dividing by 10 to obtain a mean score for each of the four subscales. The four subscales are as follows:

1. **Authoritarianism:** reflects a view of the mentally ill as an inferior class requiring coercive handling. It measures sentiments regarding the need to hospitalize those with mental illness, the difference between people with mental illness and people without mental illness, and the importance of supervisory care.
2. **Benevolence:** reflects a sympathetic view of those suffering with mental illness based on humanistic and religious values. It addresses such sentiments as the need for sympathy toward those with mental illness and willingness to become personally involved with those who are mentally ill.
3. **Social Restrictiveness:** reflects a view of the mentally ill as a threat to society. It addresses the dangerousness of people with mental illness, the need to maintain social distance, and the lack of responsibility on the part of people with mental illness.
4. **Community Mental Health Ideology (CMHI):** reflects a view that recognizes the therapeutic value of the community and acceptance of deinstitutionalized care (Taylor & Dear, 1981).

The CAMI was developed such that the two subscales, Benevolence and CMHI, formed the positive attitude factors for analyses and the Social Restrictiveness and Authoritarianism subscales combined to form the negative attitude factors. Each individual subscale score has a possible range from 10 to 50. The scale values for responses on the CAMI are such that higher scores indicate greater agreement with the factor concept. For instance, a person with a tolerant disposition toward mentally ill individuals would be expected to have higher scores on the Benevolence and CMHI factors and lower scores on the Authoritarian and Restrictiveness

factors. Scale reliability ranges from alpha 0.68 to 0.88, and construct validity also showed the desired result (Taylor & Dear, 1981).

Information was also gathered through a demographic questionnaire that asked questions about participants' age, biological sex, racial and ethnic identity, education level, and political affiliation. In addition to demographic information, questions related to participants' opinions on disposition for the perpetrator were assessed (e.g., "What do you think the outcome should be for the individual who perpetrated the mass shooting?"). Response options included death penalty, life in prison, strict sentence with option for parole, psychiatric treatment and rehabilitation, or no penalty. Participants answered the following question related to inference: "On a scale from 1 to 4, how likely is it that the perpetrator has a diagnosis of mental illness?" Answers on a Likert scale were 1 (*extremely unlikely*) to 4 (*extremely likely*). In the mental illness (MI) vignette condition, participants were told in the vignette the perpetrator had a diagnosis of schizophrenia, whereas the no mental illness (NOMI) vignette condition did not include that information.

### **Procedures**

The study received IRB approval and was created using REDCap and distributed via MTurk. The survey included a general demographic questionnaire, the vignettes (MI and NOMI), as well as the identified measure, CAMI. The survey was disseminated through MTurk to aid in collecting adequate data. The researcher included a description and the purpose of the project. Participants were instructed to click on the link to the survey, where directions to proceed were outlined. When the link was opened, an introduction page included a thank you to participants for considering participation in the study and another description of the study. In addition, participants were told that they would be answering a variety of questions about themselves and reading a vignette and that the study should take 15 to 20 min to complete. The

participants were asked to answer all of the questions honestly to the best of their ability. When participants were ready, they clicked the “begin survey” button and completed all of the measures. The introduction page made clear that participation was voluntary, that anonymity would be maintained, and that participants could exit the study at any time if they changed their minds. After collecting all of the data through MTurk, the researcher analyzed the data in SPSS. The researcher administered all aspects of the study.

## CHAPTER 4: RESULTS

### Statistical Analyses

The primary aim of the current study was to examine the degree to which information about mass shooters and implications of mental illness impact individuals' attitudes about mental illness in general. Descriptive statistics were run on the baseline characteristics for the entire study sample ( $N = 200$ ) and for participants assigned to the mental illness (MI) vignette ( $n = 100$ ) and the non-mental-illness (NOMI) vignette ( $n = 100$ ). Means and standard deviations were calculated for the continuous variable, years of age, and frequencies and percentages were calculated for the categorical variables (i.e., biological sex, race and ethnicity, education level, and political party). To determine whether randomization succeeded in equally distributing the variance of these baseline characteristics across the two conditions, an analysis of variance (ANOVA) was conducted to examine between-group mean differences on age, and chi-square analyses were conducted to examine between-group proportionate differences on the categorical variables.

A multivariate analysis of variance (MANOVA) was used to compare stigmatizing attitudes toward mental illness (Community Attitude Toward the Mentally Ill [CAMI] Social Restrictiveness subscale) by condition (Hypothesis 1). Prior to this analysis, all statistical assumptions for MANOVA were examined. The assumptions that were tested included normality, homogeneity of variance, and determination of potential outliers. No outliers were identified through inspection of a box plot. There was homogeneity of variances as assessed by Levine's test for equality of variances ( $p = .886$ ). Finally, the scores were normally distributed as assessed by the Shapiro-Wilk Test of Normality ( $p > .05$ ).

A chi-square analysis and MANOVA were used to examine between-group differences on the type of sentence that was recommended (Hypothesis 2). As only one participant across groups endorsed no penalty for the disposition variable, this category was removed from the chi-square analyses. All other cell sizes had a frequency greater than 5. The MANOVA was used to compare the severity of disposition by condition (CAMI Authoritarianism subscale). A chi-square analysis was used for the exploratory analyses, examining the between-group proportion of participants assigned to the NOMI vignette who inferred the perpetrator had mental illness.

### **Power Analysis**

With an alpha of .05 and estimating a medium effect size of .4, a total sample size of 200 individuals (100 per condition) was required to obtain a statistical power of .80 for the primary hypothesis (Cohen, 1988).

### **Descriptive Statistics and Randomization**

Overall, the mean age of the entire sample ( $N = 200$ ) was 41.43 years ( $SD = 11.58$ ). The participants' ages ranged from 18 to 73 years. Between-groups ANOVA revealed no significant differences on years of age ( $p = .27$ ). The MI group had a mean age of 40.52 years ( $SD = 12.04$ ), and the NOMI group had a mean age of 42.33 years ( $SD = 11.10$ ). Regarding assigned sex for the overall sample, 105 participants (53%) identified as male and 95 (47%) identified as female. Chi-square analyses identified no significant between-group differences on assigned sex with the MI and NOMI groups ( $p = .39$ ). See Table 1.

Regarding race, the majority of participants were Eastern European (66.5%), followed by Asian American (22%), African American (4.5%), and other (7%). The chi-square analyses indicated no significant differences between the two vignette groups on race, as depicted in Table 1. Regarding political party affiliation, for the entire sample, 88 (44%) identified as



Democrat, 46 (23%) identified as Republican, 61 (30.5%) identified as Independent, and 5 (2.5%) identified as Other. Chi-square analyses indicated no between-group differences on party affiliation. Education level revealed one individual (.5%) with less than a high-school diploma, 22 (11%) had high-school diplomas, 60 (30%) had some college/2-year degrees, 93 (46.5%) had 4-year degrees, and 24 (12%) had postgraduate degrees. These descriptive statistics can be found in Table 1.

**Table 1**

*Participant Characteristics*

Variable	N = 200 (%)	MI - n = 100 %/M(SD)	NOMI - n = 100 %/M(SD)	Sig
Age (M/SD)	41.43 SD = 11.58	40.52 SD = 12.04	42.33 SD = 11.09	NS
Sex				NS
Female	95 (47.5%)	51 (51%)	44 (44%)	
Race/Ethnicity				NS
White	133 (66.5%)	68 (68%)	65 (65%)	
Black or African American	9 (4.5%)	3 (3%)	6 (6%)	
Asian American	44 (22%)	22 (22%)	22 (22%)	
Other	14 (7%)	7 (7%)	7 (7%)	
Education Level				NS
Less than a high school diploma	1 (.5%)	1 (1%)	0 (0%)	
High school diploma/equivalent	22 (11%)	11 (11%)	11 (11%)	
Some college/two-year degree	60 (30%)	27 (27%)	33 (33%)	
Four-year degree/Bachelor's	93 (46.5%)	52 (52%)	41 (41%)	
Postgraduate	24 (12%)	9 (9%)	15 (15%)	

Political Affiliation				NS
Democratic	88 (44%)	46 (46%)	42 (42%)	
Republican	46 (23%)	19 (19%)	27 (27%)	
Independent	61 (30.5%)	33 (33%)	28 (28%)	
Other	5 (2.5%)	2 (2%)	3 (3%)	

Note. MI = Mental Illness Vignette; NOMI = No Mental Illness Vignette; NS = No Significance

**Hypothesis 1**

Participants who are exposed to the MI vignette will report significantly greater stigmatizing attitudes toward MI as compared to individuals in the NOMI vignette as measured by the CAMI Social Restrictiveness scale.

To examine this hypothesis, a MANOVA was conducted, and no significant differences were found between the MI and NOMI groups,  $F(1, 198) = 0.18, p = .67$ . As shown in Table 2, no significant group differences were found for the combination of scores on the Authoritarianism and Social Restrictiveness scales (i.e., negative-attitude scales). A separate MANOVA was also conducted to examine each scale individually, and no significant differences were found, Wilks' lambda = 0.998,  $F(2, 197) = 0.17, p = .84$ .

**Table 2**

*CAMI Social Restrictiveness Scores by Condition*

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Condition	<i>N</i>	Mean	<i>SD</i>	<i>Significance</i>
Mental illness (MI)	100	24.5	7.45	—
No Mental Illness (NOMI)	100	25.7	7.21	.77

The Community Attitudes toward the Mentally Ill (CAMI) was developed by Taylor and Dear (1981), using the two most previously widely used scales, the Opinions about Mental Illness Scale and the Community Mental Health Ideology Scale. The CAMI operationally

defines mental illness as referring to people needing treatment for mental disorders but who are capable of independent living outside of a hospital.

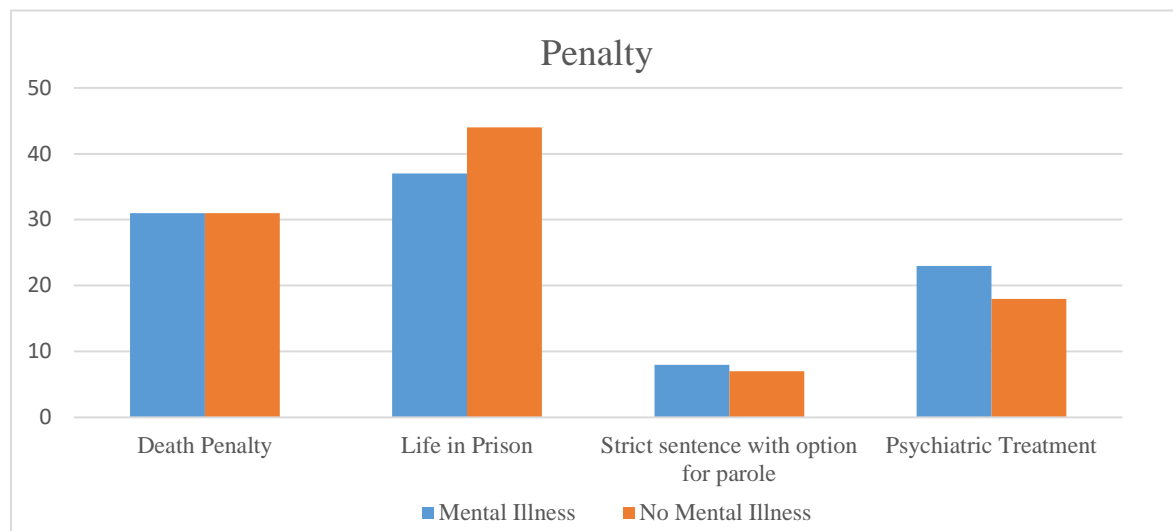
**Hypothesis 2**

Participants assigned to read the mental illness vignette will suggest a more severe penalty than that suggested by participants exposed to the NOMI vignette, as indicated by the penalty question and CAMI Authoritarianism subscale.

To examine this hypothesis, a two-group chi-square analysis was conducted, examining proportions of differences between the two groups across four responses (i.e., death penalty, life in prison, strict sentence with option for parole, or psychiatric treatment and rehabilitation). No significant between-group differences were found regarding the type of disposition,  $X^2(3) = 1.28$ ,  $p = .74$ . The most frequently endorsed disposition was life in prison (40.7%,  $n = 81$ ), followed by the death penalty (31.2%,  $n = 62$ ), psychiatric treatment (20.6%,  $n = 41$ ), and strict sentence with option for parole (7.5%,  $n = 15$ ). Additionally, the MANOVA revealed no significant between-group differences for the CAMI Authoritarianism scale (Table 3).

**Figure 3**

*Suggested Disposition by Vignette Condition*



**Table 3***CAMI Authoritarianism Scores by Vignette Condition*


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Condition	<i>N</i>	Mean	<i>SD</i>	<b>Significance</b>
Mental illness (MI)	100	24.9	6.4	—
No mental illness (NOMI)	100	25.4	6.9	.59

The Community Attitudes toward the Mentally Ill (CAMI) was developed by Taylor and Dear (1981), using the two most previously widely used scales, the Opinions about Mental Illness Scale and the Community Mental Health Ideology Scale. The CAMI operationally defines mental illness as referring to people needing treatment for mental disorders but who are capable of independent living outside of a hospital.

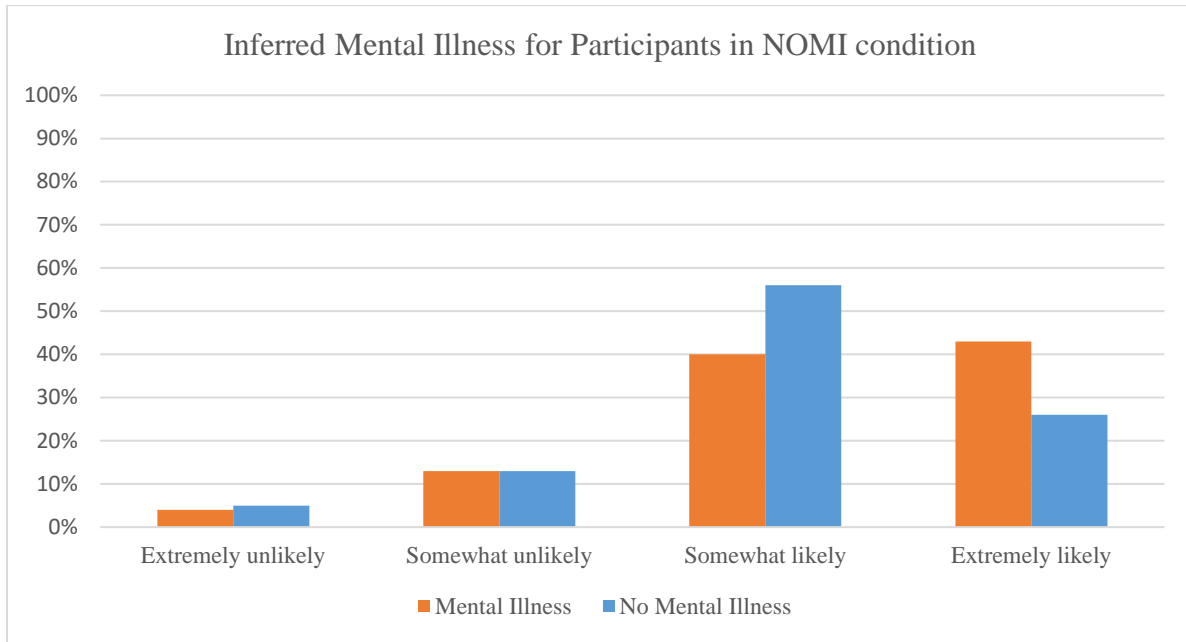
**Exploratory Analyses**

A significantly larger proportion of participants who are exposed to the NOMI vignette will infer that the perpetrator has a serious mental illness when one is not specified.

Results indicated no significant between-group differences. Of those who read the NOMI vignette, 82 (82%) individuals reported that the perpetrator was somewhat likely or extremely likely to have a diagnosis of serious mental illness (Figure 4).

**Figure 4**

*Inferred Mental Illness for Participants in NOMI condition*



## CHAPTER 5: DISCUSSION

### Interpretation and Implication

In August 2019, following two mass shootings at a Walmart in El Paso, Texas, and outside of a bar in downtown Dayton, Ohio, where at least 29 people were killed and dozens injured, the president stated during a televised address, “Mental illness and hatred pulls [sic] the trigger, not the gun” (Remarks by President Trump on the Mass Shootings in Texas and Ohio, The White House, 2019). Days later, he made additional comments about the events, “It’s a big mental illness problem” and “These people are mentally ill and nobody talks about that,” and when asked about gun control, he said, “I don’t want people to forget that this is a mental health problem” (Remarks by President Trump Before Marine One Departure, 2019).

Despite the growing acceptance of mental illness as a chronic disease and a disorder that can be treated, research suggests it is still one of the most stigmatized health conditions. People often receive incorrect and negative information from the media regarding mental illness, thereby reinforcing bias against people with mental illness and possibly encouraging new negative associations about what having a mental illness means (Stuart, 2006b). Mental illness labels, in particular, have been connected with perceived threats of violence, resulting in the desire for social distance from these individuals (Link et al., 1987).

Mass murder is a crime that often creates much public interest and results in numerous attempts to understand exactly who typically commits such crimes and what their motivations are (Taylor, 2018). Conversations following a mass-shooting incident often center on mental health. Unfortunately, these discussions are often rampant with inaccurate information that may lead to bias or negative stereotypes. Media images of mental illness, both in news and entertainment, often portray those with mental illness as dangerous, violent, or unpredictable

(Hoffner et al., 2017). Information that portrays individuals with mental illness as disturbed often garners public attention and reinforces the popular belief that mental illness results in violence (Swanson et al., 2015).

Do individuals have negative attitudes toward those with a mental illness? Do individuals infer a mass shooter has a mental illness when one is not explicitly stated? These questions capture the central hypotheses in this dissertation.

The first hypothesis predicted that those who were exposed to the mental illness (MI) vignette would have significantly greater stigmatizing beliefs, as measured by the Community Attitudes Toward the Mentally Ill (CAMI) Social Restrictiveness subscale, toward those with mental illness as compared to individuals exposed to the no mental illness (NOMI) vignette. However, the findings failed to support this hypothesis, as no significant between-group differences were found for the Social Restrictiveness subscale.

Hypothesis 2 predicted that participants who were exposed to the MI vignette would suggest a penalty more severe than that suggested by those exposed to the NOMI vignette. This hypothesis was also not supported, as no between-group differences were found on the type of disposition, and the multivariate analysis of variance (MANOVA) revealed no significant between-group differences on the CAMI Authoritarianism subscale. Finally, the exploratory analyses found no significant relationship between groups as to inferences made about the perpetrator's diagnosis of serious mental illness. While not statistically significant, the majority of individuals in the NOMI condition inferred that the perpetrator had a mental illness when it was not stated.

In spite of some strong support in the literature for both H and H<sub>2</sub>, the results fail to reject the null hypothesis. Interpretation of the results of this study demonstrate that the methods and

approaches to examine the alternative hypotheses were inadequate and in need of additional consideration. The lack of significant between-group differences suggests that the vignettes did not differ enough in describing the perpetrator as having or not having mental illness. The only difference in the mental illness vignettes appeared in its final sentence, which read, “The alleged perpetrator has a diagnosis of Schizophrenia.” Additionally, even though the MI vignette clearly stated that the perpetrator had a mental illness, more than half of the participants did not believe the extreme likelihood of the perpetrator having a mental illness.

Moving forward, additional examination of this topic may benefit from further clarification and delineation in each vignette regarding the perpetrator’s diagnosis of schizophrenia. For example, adding statements describing symptoms of schizophrenia (e.g., currently taking medications, has a history of psychotic episodes) may help participants in clarifying that the perpetrator has a diagnosis. Another consideration could be to alter the order of the content of the vignette. For example, the vignette could begin by identifying that the individual has a mental illness to perhaps make it more salient.

### **Limitations**

As with all empirical research, possible threats to internal and external validity must be considered. In seeking to minimize the threats to internal validity, randomization of participants was conducted. To determine whether randomization succeeded in equally distributing the variance of these baseline characteristics across the two conditions, a two-tailed analysis of variance (ANOVA) was conducted to examine between-group mean differences on the continuous variables, and chi-square analyses were conducted to examine between-group proportionate differences on the categorical variables. Any variables found to be unequally distributed were included in the subsequent main analyses as covariates.



**Sample/Population**

This study was conducted using Amazon's MTurk online program and used a sample of 200 participants. Owing to the single platform of sample collection, a determination of the degree to which the findings generalize to all individuals is impossible. Additionally, there is a potential bias caused by the financial incentive and compensation provided once the survey was completed. Lastly, potential duplicates of respondents was a concern with the use of the online MTurk platform, as some may have signed in more than once, specifically with the NOMI vignette. To control for the potential concern of duplicates, additional participants were collected and randomized to ensure there were no duplicates.

**Use of Self-Report Measures**

In many instances when assessing potentially sensitive information, self-report measures may impact the validity and reliability of the information obtained (Donaldson & Grant-Vallone, 2002). The anonymous assessment procedures used in the current study are likely to have mitigated this concern.

**Vignettes**

Results suggested that participants read the vignettes as identical. For future studies, additional descriptions of the perpetrator having a serious mental illness might be helpful to further delineate the two narratives and ensure participants understand that the individual has schizophrenia. The vignette could include specific symptoms (e.g., hallucinations, delusions) or note that the perpetrator was taking an antipsychotic medication. The vignette could also begin with statements focused on the individual's mental illness to draw greater attention.

**Global Concerns**

Although the current study examined attitudes, opinions, and beliefs of individuals regarding perpetrators of mass shootings in the United States, mass shootings occur globally. This study's sample included only participants from the United States and, therefore, cannot be generalized to other countries.

**Future Directions**

Mental illness is widespread and affects people of all backgrounds, demographics, and socioeconomic statuses. Millions of individuals of all ages and backgrounds are suffering from different forms of mental illness. According to the National Alliance on Mental Illness (NAMI, 2015), approximately 1 in 5 adults in the United States, roughly 43.8 million individuals, experience mental illness. Mental illness can be defined as a condition that affects a person's thinking, feeling, or mood and can affect the ability to relate to others and function each day (NAMI, 2018). Available evidence suggests that individuals with mental health disorders are more likely to be victims of violent crime than to be perpetrators (Metzl & MacLeish, 2015). This information is often misunderstood and miscommunicated following the aftermath of mass-shooting incidents, as individuals have a tendency to infer mass-shooting perpetrators are mentally ill when a diagnosis has not been confirmed.

Although mass shootings are statistically rare events, their tragic and deadly effects elicit conversation, often in the hopes of determining ways to prevent their occurrence. Given the limited data, disentangling patterns and causes of these events is difficult. Additionally, most of the data about mass shootings and mental illness remain anecdotal or are based on statistics from various reports or news media. Researchers often note that in many cases classifications of mass-shooting perpetrators as mentally ill were based on media reports or public records, thus

making the determination of whether these conclusions were accurate nearly impossible.

Inferring causation from correlation can lead to misleading assumptions toward those with a mental illness and to incorrect stereotypes and stigma. No one who commits a violent act, such as a mass shooting, is mentally well, but that does not mean a person meets criteria for a mental illness diagnosis. Drawing a distinction between mental illness, a diagnosable and potentially treatable mental illness, and overall mental wellness may be useful.

Messages linking mental illness with gun violence may increase stigma, thereby affecting treatment rates and creating other negative outcomes among people with a mental illness (McGinty, 2018). Nonetheless, mental illness continues to be a leading topic in the gun violence debate in the United States, as most of the public discourse about mental illness and gun violence has been prompted by mass shootings. Although it was hypothesized that pairing mental illness with mass murder would increase stigma toward those with mental illness, this strong connection might already exist, thus the lack of significant findings. Colloquially, mass shootings are intrinsically connected with mental illness; as a result, perhaps people have been classically conditioned to associate the two together. Future research could examine the association between mass murder and mental illness in order to provide more education and information regarding mental illness. Improving the understanding of these attributions may help to identify strategies to decrease bias and discrimination toward those with mental illness.

Mental health professionals can serve as both advocates and clinicians, offering psychoeducation and skills regarding mental health and wellness, as well as providing evidence-based intervention and assessment to individuals who are struggling. Given the devastating effects of mass shootings and deadly gun violence, ongoing research must be conducted to better

understand mental illness, bias, and stigma, as well as ways to advocate for increased funding and support for mental health initiatives.

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## APPENDICES

### Appendix A

#### Vignettes

The vignettes were modeled after a 2018 New York Times article by Audra D.S. Burch and Patricia Mazzei, titled, “Death Toll Is at 17 and Could Rise in Florida School Shooting” which described the shooting at Marjory Stoneman Douglas High School in Parkland, Florida.

#### Mental Illness (MI)

A heavily armed adult male barged into his former high school about an hour northwest of Ozark, Missouri on Monday morning, opening fire on terrified students and teachers and leaving a death toll of 8 that could rise even higher, the authorities said. The gunman, armed with a semiautomatic AR-15 rifle, was identified as Jason Smith, a 25-year-old male who attended the high school years ago. Jason had attended the school from seventh to twelfth grade. He began his shooting rampage shortly after the first bell of the morning rang, around 8:10 a.m. He made his way inside the school and proceeded down the hallways of the middle school, before entering the doors of the high school where he continued to open fire. **The alleged perpetrator has a diagnosis of Schizophrenia.**

#### No Mental Illness (NOMI)

A heavily armed adult male barged into his former high school about an hour northwest of Ozark, Missouri on Monday morning, opening fire on terrified students and teachers and leaving a death toll of 8 that could rise even higher, the authorities said. The gunman, armed with a semiautomatic AR-15 rifle, was identified as Jason Smith, a 25-year-old male who attended the high school years ago. Jason had attended the school from seventh to twelfth grade. He began his shooting rampage shortly after the first bell of the morning rang, around 8:10 a.m. He made

his way inside the school and proceeded down the hallways of the middle school, before entering the doors of the high school where he continued to open fire.