

## Public Mental Health Stigma and Mass Shootings

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### Introduction

Mass shootings exert a strong influence on public policy and on public perception despite the fact that they are relatively rare. Mass shootings are defined by the Federal Bureau of Investigation (FBI) as an incident in which at least four people were murdered by a gun [1]. In 2012, 151 people were killed in mass shootings, compared with 31,672 firearm-related deaths in the United States in 2011 [2]. Although statistically rare, mass shootings are a significant factor driving current policy debates about mental illness and gun control and they shape public views about mental illness [3].

Media coverage of mass shootings frequently uses derogatory language about mental illness. Research suggests that mass shootings exacerbate the stigma of mental illness [3,4], and provide a window of opportunity to pass mental health laws. For example, the 2007 Virginia Tech shooting precipitated the NICS [5] Improvement Amendments Act of 2007 (NIAA), which was signed into law by President George W. Bush in 2008 [5]. Its intent was to increase mental health record reporting to National Instant Criminal Background Check System (NICS), a national system used by the FBI to run background checks on gun license applications. In Virginia, the state legislature loosened standards for involuntary commitment and expanded the criteria for mandatory psychiatric outpatient treatment. On April 30, 2007, Virginia Governor Timothy Kaine issued an executive order that eliminated the distinction between inpatient and outpatient settings as a criterion for reporting mental health records to NICS [6].

Mass shootings also strengthen political support for mental health services. The Sandy Hook Elementary School shooting was a major factor that led President Obama to request \$235 million for new mental health initiatives; \$130 million of that was earmarked for preventive mental health care for school-age children [7]. Following the 2012 shooting in Aurora, Colorado, Governor John Hickenlooper pledged to improve a state mental health system that had been devastated by budget cuts [8].

The Sandy Hook shooting resulted in new mental health laws in 16 states [9]. Mental health laws comprise any piece of legislation that pertains to persons who may have a diagnosed mental illness, to mental health professionals and to mental health treatment [10]. The mental health laws resulting from Sandy Hook center on gun control efforts. The majority expand mandated reporting of mental health records to NICS. In order to facilitate this process, on April 9, 2013, President Obama signed an executive order modifying the Health Insurance Privacy and Accountability Act (HIPAA) as it pertains to protecting confidentiality of mental health records. As a result, states will not face legal challenges to privacy rights protecting mental health records when they report information to the national database [11].

New York was the first state to pass legislation in response to the Sandy Hook Elementary School shooting. The New York Secure Ammunition and Firearms Enforcement Act of 2013 [NY SAFE] [12] was enacted one month after the shooting and served as a model for legislation around the country. NY SAFE establishes a new mental hygiene law, Section 9.46, which requires four groups of mental health professionals (physicians, psychologists, registered nurses, and licensed clinical social workers), to report any patient for whom they are providing mental health treatment to local authorities, regardless of setting (outpatient or inpatient) and regardless of status (voluntary or involuntary), that they consider at risk of harming themselves or others. Nonclinical identifying information (name, social security number, and date of birth) will be cross-referenced against a state database of gun licensees; if a match is found, the gun license may be suspended and the police can be authorized to find the person, entering their home if necessary, and remove their firearm. The identifying information will be forwarded to the NICS database. The law also expands court-ordered assisted outpatient treatment provisions (Kendra's Law) by extending the mandatory time period and ensuring the treatment order "follow" the individual if he or she moves to a new county [12]. By October, 2014, this new database contained approximately 34,500 names [13].

Mental health advocates suggest that policies that link mental illness and gun violence do more harm than good [14]. On one hand, such policies are unlikely to significantly reduce gun violence because the majority of persons with mental illness are not dangerous. On the other hand, they can be a deterrent to treatment and recovery because policies that reinforce stigmatizing perceptions of mental illness may result in people who need treatment being less likely to seek it. A leading authority on mental illness and the law summed up the pitfalls of this legislation: “three problems beset New York’s new reporting law for mental health professionals. The first is over identification; the law could include too many people who are not at significant risk. The second is the chilling effect on help seeking; the law could drive people away from the treatment they need or inhibit their disclosures in therapy. The third is invasion of patient privacy; the law amounts to a breach of the confidential patient-physician relationship.” [3].

Identifying factors associated with violence is difficult. Research suggests that demographics—being young, male, and of lower socioeconomic status—are the major determinants of violence [15]. A national coalition of mayors, Mayors Against Illegal Guns, conducted an analysis of every mass shooting in the United States between 2009 and 2013. They found that in 57% of cases there was a connection between the shootings and domestic or family violence, compared to 10% of shootings that involved a mental health issue [16].

While a large body of research shows that violence by people with serious mental illness, such as schizophrenia or bipolar disorder, is rare and accounts for approximately only 4–5% of violent acts, persons with a co-occurring substance abuse disorder and a diagnosed mental illness have shown an elevated risk of violence [17-21] Gun control efforts based in science rather than on public mental health stigma is a public safety issue.

The stubbornly persistent idea that persons with mental illness are dangerous and to be avoided is the primary component of public mental health stigma [22,23]. It leads to misguided public policy that fails to safeguard the public against gun violence, the victims of which are disproportionately black and female: Guns are the leading cause of death among young African American males and women are at elevated risk for gun violence because of the strong association between firearm homicide and intimate partner violence [24,25].

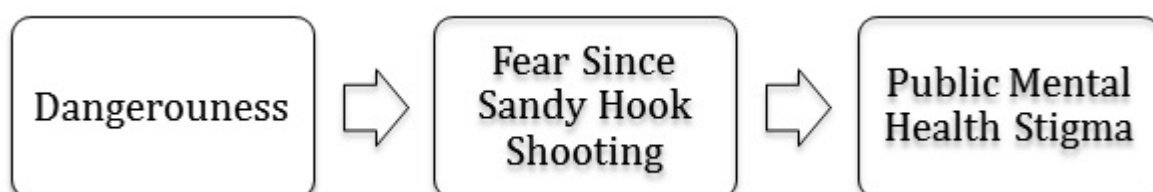
Although increasing restrictions on gun ownership for persons with mental illness may seem to be a common-sense measure to protect public safety, laws that are based on the faulty premise that links mental illness to gun violence are unlikely to be effective. When these policies have a chilling effect on people seeking treatment, they can do more harm than good [3,26]. Addressing gun violence by implementing evidence-based policies based on research rather than media hype and political posturing is crucial.

## The Study

This study examined the effect of the Sandy Hook Elementary School shooting in Newtown, Connecticut, on the public’s perception of persons with mental illness. Specifically, it examined whether respondents believed that persons with mental illness were dangerous and if the Sandy Hook shooting heightened fear of persons with mental illness, and influenced public mental health stigma.

The study is based on the danger appraisal model, which examines public stigma and serious mental illness [27]. According to this model, one’s perception that a person with mental illness is dangerous leads to fear of that person. Fear, in turn, leads to avoidance. Thus, when people think persons with mental illness are dangerous, they fear and avoid them [28,29].

We further hypothesized that fear of persons with mental illness leads to public mental health stigma. In this study, we define public mental health stigma as support for a national database comprised of persons with mental illness and the belief that gun violence would be reduced if persons with mental illness are confined in hospitals. We hypothesized that when people perceive persons with mental illness as dangerous, they are afraid of them, avoid them, and endorse stigmatizing social strategies to manage them, such as involuntary confinement or a national database comprised of people with a diagnosed mental illness (Figure 1).



**Figure 1:** Model of the Relationship between attributions of dangerousness, attributions of fear since the Sandy Hook shooting, and public mental health stigma with fear since the Sandy Hook shooting as a Mediator between attributions of dangerousness and public mental health stigma

We predicted that attributions of danger would be positively related to fear of persons with mental illness. Since the Sandy Hook Elementary School shooting, that attributions of danger would be positively related to public mental health stigma, defined as support for a national database comprised of persons with mental illness, and the belief that gun violence would be reduced if persons with mental illness are confined in hospitals. We predicted that this relationship would be partially mediated by fear of persons with mental illness since the Sandy Hook shooting.

We measured attributions of danger based on three items in the questionnaire; fear and avoidance is measured based on 13 items in the questionnaire, and public mental health stigma is measured by two items in the questionnaire. Table 1 presents the three key variables in this study: dangerous, fear/avoidance, and public mental health stigma, along with their corresponding items in the questionnaire.

Dangerousness	Fear/Avoidance	Public Mental Health Stigma
How dangerous do you feel a person with mental illness is?	would feel unsafe around persons with mental illness.	I think the creation of a national database with the names of the mentally ill would make us safer.
I think people with mental illness are likely to be violent.	People with mental illness terrify me.	I think gun violence would be reduced if mentally ill people were in hospitals.
I think people with mental illness pose a risk to other people unless they are hospitalized.	Since the Sandy Hook School shooting, I feel afraid of people with mental illness.	
	How scared of a person with mental illness would you feel?	
	would feel threatened by a person with mental illness.	
	How likely is it that you would help a person with mental illness?	
	would try to avoid a person with Mental illness.	
	How much concern do you feel for persons with mental illness?	
	know someone with mental illness very well.	
	I would feel aggravated by a person with mental illness.	
	How angry do people with mental illness make you feel?	
	I feel pity for people with mental illness.	
	How irritated would you feel by a person with mental illness?	

**Table 1:** Key Variables

## Methods

### Participants

The sample consisted of 219 undergraduate students from a private, midsized four-year university in the northeastern United States. The students were drawn from multiple sections of a required introductory course. As such, they represented a cross section of students from the university and had diverse majors. Participants completed a questionnaire consisting of demographic questions and a modified version of the Attribution Questionnaire [27]. The survey was distributed in April 2013, four months after the Sandy Hook Elementary School shooting.

### Analysis

Structural equation modeling (SEM), which utilized maximum likelihood estimating in the AMOS 5, was used to examine the hypothesized models. Four indices were used to assess the model's goodness of fit: chi-square ( $X^2$ ), comparative fit index (CFI), nonnormed fit index/Tucker-Lewis index (NNFI/TLI), and root mean square error of approximation (RMSEA). Common benchmarks were utilized to interpret the model fit indices: nonsignificant chi-square (greater than 0.05), CFI (0.95 or greater), RMSEA (0.05 or less) [30], and NNFI/TLI (0.90 or greater) [31].

### Instrument

Participants completed a modified version of the Attribution Questionnaire (AQ), which contains 19 items (the original measure consisted of 27 items) [27]. The AQ instrument assesses nine key stereotypes of people with mental illness and measures the public stigma towards persons with mental illness. Corrigan et al. (2002) demonstrated a nine-factor path model for explaining the relationship among public attitudes, corresponding affect, and the resulting decisions related to people with mental illness. The AQ test/retest and confirmatory factor analysis supported the reliability and validity of this nine-factor model [27,32].

Two items designed to measure public mental health stigma in the aftermath of the Sandy Hook shooting were added to the original AQ, bringing the total number of items in the questionnaire to 22 items. Analysis of the total AQ internal consistency via Cronbach alpha was 0.846. All items were scored with a scale of 1-4 with answer choices of definitely, somewhat, a little, and definitely not.

## Results

The study sample was approximately two-thirds female and three-quarters minority participants. Although the age of the participants was not assessed, most of the participants were in their sophomore year of college. Slightly fewer than half (47%) of the undergraduate student population at the university are between the ages of 20 and 24; 13% are between the ages of 25 and 29.6% are between the ages of 30 and 34. The average gross family income is \$45,000. A majority of participants (59.8%) indicated that they did not know someone who has a mental illness. Table 2 summarizes the demographic characteristics of the study sample.

Demographic variables	Frequencies/M (SD)
<b>Gender</b>	
Female	59.8%
Male	39.3%
Prefer Not to Answer	0.9%
<b>Race/Ethnicity</b>	
Caucasian	25.1%
Black/African American	33.8%
Asian/Pacific Islander	24.7%
Native American	1.8%
Hispanic/Latino	13.7%
Other	6.8%

**Table 2:** Frequencies (%) for demographic variables (N=219)

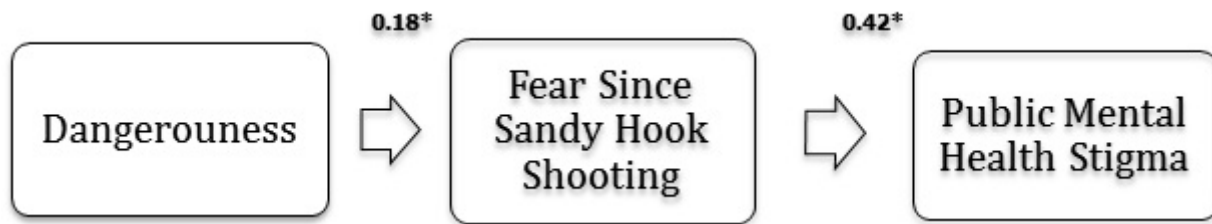
Attributions of dangerousness significantly correlated with fear ( $r = .65$ ). As participants endorsed higher levels of stigmatizing attributions that persons with mental illness are dangerous, they also endorsed higher attributions that they have become more fearful of persons with mental illness since the Sandy Hook shooting. In addition, attributions of dangerousness significantly correlated with public mental health stigma ( $r = .38$ ). Participants who have higher stigmatizing views that persons with mental illness are dangerous also have greater support for a national database comprised of persons with mental illness and believe that gun violence would be reduced if persons with mental illness were in hospitals. Finally, support for a national database and psychiatric commitment as a societal strategy to manage gun violence significantly correlated ( $r = .40$ ) with greater attributions of fear of persons with mental illness since the Sandy Hook shooting. The higher the endorsement that persons with mental illness should be feared related to greater endorsement for public mental health stigma. Table 3 summarizes the findings.

Dangerousness	9.9 (3.3)
Fear since Sandy Hook shooting	1.9 (0.91)
Public mental health stigma	1.9 (0.96)

**Table 3:** Means and standard deviations for attributions of dangerousness, attributions of fear since the Sandy Hook shooting and public mental health stigma

We predicted that stigmatizing attributions of dangerousness would be positively related to stigmatizing attributions of fear of persons with mental illness since the Sandy Hook Elementary School shooting, and stigmatizing attributions of dangerousness would be positively related to support for a national database and for psychiatric commitment as a means to reduce gun violence with this relationship being partially mediated by fear of persons with mental illness since the Sandy Hook shooting (Figure 1).

The path model used to test this hypothesis resulted in a significant chi square; two of the corresponding fit indices showed good fit to the data; one index showed poor fit to the data ( $\chi^2_{(1)} = 4.178, p = .041, CFI = .980, NNFI/TLI = .941, RMSEA = .121$ ). The standardized path coefficients for this model can be found in Figure 2. Effects for this model indicate that attributions of dangerousness predicted fear of persons with mental illness since the Sandy Hook Elementary School shooting ( $\beta = .18, p < .001$ ), which in turn predicted support for a national database ( $\beta = .42, p < .001$ ). These results indicated that participants who reported higher stigmatizing attributions that persons with mental illness are dangerous were more likely to report higher stigmatizing attributions that since the Sandy Hook shooting they are more fearful of persons with a mental illness. In addition, these results indicated that participants who fear persons with mental illness more since the Sandy Hook shooting are more likely to support the creation of a national database for persons with mental illness.



Note: All path coefficients are standardized values.

\*  $p < .001$

**Figure 2:** Model of the Relationship between attributions of dangerousness, attributions of fear since the Sandy Hook shooting, and public mental health stigma with fear since the Sandy Hook shooting as a Mediator between attributions of dangerousness and public mental health stigma

## Discussion

Public mental health stigma exerts a serious toll of society's well-being. It reinforces treatment barriers for persons with mental illness and reduces their ability to fully participate in life. It also promotes flawed and crisis-driven public policy. The erroneous belief that persons with mental illness are dangerous has been demonstrated to be remarkably pernicious, despite a large body of evidence to the contrary. In 1999, the Surgeon General issued a report entitled *Dispelling the Myths and Stigma of Mental Illness: The Surgeon General's Report on Mental Health*. His report identifies stigma as the single greatest obstruction to treatment and suggests that the association of violence with mental illness, a fear he believes is stoked by the media, is central to the perpetuation of public mental health stigma. The media, be it news coverage or movies, distorts mental illness and perpetuates bias and misconceptions [33]. The non-stop news coverage following the Sandy Hook shooting repeatedly linked mental illness and violence. Misplaced public perception which seizes on mental illness as the proximate and underlying cause of gun violence undermines public safety because it focuses on the wrong problem. Gun violence is a serious social problem which is at an epidemic level in the United States. Over 31,672 people were killed by firearms in America in 2010 [6], a number which places the United States within the upper levels of gun deaths among developed nations.

While the vast majority of persons with serious mental illness are not violent, research points to several factors associated with an elevated risk of gun violence among persons, both those with and without a diagnosed mental illness, among these are persons with a history of drug and alcohol abuse, suicidal behavior, history of domestic violence and/or violent crime [34]. Research-informed public policy that limits gun ownership for populations that are associated with an elevated risk of violence is a reasonable step toward public safety.

## Limitations of the Study

Our study has several limitations. Our sample was one of convenience in that it was comprised of solely undergraduate college students. A large body of survey research investigating public mental-illness stigma employs the use of hypothetical vignettes portraying individuals with mental illness (es) [27,35]. Because these studies are based on hypothetical vignettes, they have limited application for how an actual event (e.g., the Sandy Hook Elementary School shooting) influences public perception and policy.

## Conclusion

While mass shootings are relatively rare, they have a significant influence on public mental health. In the aftermath of Sandy Hook, new gun laws were enacted that are unlikely to reduce gun violence. In this study of 219 college students, we found that public mental health stigma was strengthened by the Sandy Hook shooting. Although the problem of reducing community violence is complex and no simple remedies exist to prevent mass shootings, crises-driven policies lead to flawed solutions. Future research that examines the impact of these new laws, both on mental health care and on gun violence, is crucial.

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