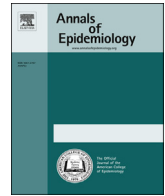




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Mental illness and reduction of gun violence and suicide: bringing epidemiologic research to policy



Jeffrey W. Swanson PhD^{a,*}, E. Elizabeth McGinty PhD, MS^b, Seena Fazel MBChB, MD, FRCPsych^c,
Vickie M. Mays PhD, MSPH^{d,e}

^a Department of Psychiatry and Behavioral Sciences, Duke University School of Medicine, Durham, NC

^b Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

^c Department of Psychiatry, University of Oxford, Oxford, England

^d Department of Psychology, University of California at Los Angeles, Los Angeles, CA

^e Department of Health Policy and Management, University of California at Los Angeles, Los Angeles, CA

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ABSTRACT

Purpose: This article describes epidemiologic evidence concerning risk of gun violence and suicide linked to psychiatric disorders, in contrast to media-fueled public perceptions of the dangerousness of mentally ill individuals, and evaluates effectiveness of policies and laws designed to prevent firearms injury and mortality associated with serious mental illnesses and substance use disorders.

Methods: Research concerning public attitudes toward persons with mental illness is reviewed and juxtaposed with evidence from benchmark epidemiologic and clinical studies of violence and mental illness and of the accuracy of psychiatrists' risk assessments. Selected policies and laws designed to reduce gun violence in relation to mental illness are critically evaluated; evidence-based policy recommendations are presented.

Results: Media accounts of mass shootings by disturbed individuals galvanize public attention and reinforce popular belief that mental illness often results in violence. Epidemiologic studies show that the large majority of people with serious mental illnesses are never violent. However, mental illness is strongly associated with increased risk of suicide, which accounts for over half of US firearms-related fatalities.

Conclusions: Policymaking at the interface of gun violence prevention and mental illness should be based on epidemiologic data concerning risk to improve the effectiveness, feasibility, and fairness of policy initiatives.

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The massacre of schoolchildren in Newtown, Connecticut, in late 2012 stirred a wrenching national conversation at the intersection of guns, mental illness, safety, and civil rights. In the glare of sustained media attention and heightened public concern over mass shootings, it seemed that policymakers had a rare window of opportunity to enact meaningful reforms to reduce gun violence in America. And yet, the precise course of action was far from clear; competing ideas about the nature and causes of the problem—and thus, what to do about it—collided in the public square.

On the one side, public health experts focused on the broader complex problem of firearms-related injury and mortality in the United States, where each year approximately 32,000 people are

killed with guns—about 19,000 of them by their own hand—and another 74,000 are injured in nonfatal gunshot incidents [1]. These experts recommended a range of prevention policies including universal background checks for gun purchasers, a ban on military-style assault weapons and high-capacity ammunition magazines, and a crackdown on gun trafficking, through increased enforcement and penalties and loosened evidentiary standards for prosecuting individuals charged with illegal gun sales [2]. On the other side, the National Rifle Association, which arguably wields far greater influence over national firearms policy than public opinion does [3], laid the blame for mass shootings on untreated mental illness—rather than unregulated guns—and proposed the creation of a national database of persons with mental illness [4].

For their part, mental health stakeholders encountered a painful dilemma. The goal of keeping guns out of the hands of seriously mentally ill individuals was emerging as perhaps the only piece of

* Corresponding author. Department of Psychiatry and Behavioral Sciences, Duke University School of Medicine, DUMC Box 3071, Durham, NC.

E-mail address: jeffrey.swanson@duke.edu (J.W. Swanson).

common ground between gun rights and gun control proponents; a post-Newtown public opinion poll found that a majority of Americans across the political spectrum favored “increasing government spending to improve mental health screening and treatment as a strategy to prevent gun violence” [5]. But mental health experts and consumer advocates strongly rejected what they saw as the scapegoating of people with mental illnesses—the vast majority of whom, epidemiologic data shows, will never act violently toward others—as if people with mental health disorders were somehow responsible for gun violence in general. These stakeholders thus faced the difficult prospect of debunking the public perception that “the mentally ill are dangerous,” while attempting to leverage that very perception to build support for (much-needed) public funding to improve the mental health care system in the United States—and to achieve this goal without also spawning crisis-driven laws that might overreach in restricting the rights and invading the privacy of people with mental illnesses [6,7].

What is the role of epidemiologic evidence in such a moment? Can epidemiology help policymakers craft firearms restrictions and provisions that will more effectively prevent gun violence, while at the same time protecting the rights of law-abiding gun owners as well as people recovering from mental illnesses? In this article, we describe available evidence—of what the public believes and what science has learned—about the risk of gun violence among people with mental health disorders. We discuss the complex and contested link between mental illness and violent behavior in general, and with respect to gun violence in particular; the role of other intertwined risk factors for violence, such as substance abuse, violent victimization, and neighborhood and social disadvantage; the role of suicide in gun fatalities and the role of mental illness in suicide; and the effectiveness of interventions and emerging policies to prevent violence in people with mental illness. Finally, we offer principles to guide future policymaking at the interface of gun violence prevention and population mental health, based on epidemiologic data concerning individual risk, and with the goal of improving the effectiveness, feasibility, and fairness of policy initiatives.

Public perceptions of the relationship between mental illness and violence

Negative public attitudes toward persons with serious mental illnesses such as schizophrenia and bipolar disorder are pervasive and persistent in the United States, and the assumption of dangerousness is a key element of this negative stereotype [5,8]. A 2013 national public opinion survey found that 46% of Americans believed that persons with serious mental illness were “far more dangerous than the general population” [5]. Data from the 2006 General Social Survey suggest that Americans perceive persons with schizophrenia as particularly dangerous: after reading a vignette about an individual with common symptoms of schizophrenia, 60% of respondents reported that they viewed the described individual as likely, or very likely, to be dangerous toward others—although the vignette description did not include any information about violent behavior or risk [8].

The public perception of a strong link between mental illness and violence is fueled in part by news coverage of mass shootings and other violent events. Two studies have directly linked news media coverage of high-profile acts of violence by persons with serious mental illness to negative public attitudes toward this group. First, in a 1996 study using national survey data from the former West Germany, Angermeyer and Matschinger [9] found that public desire for social distance from persons with schizophrenia increased after two highly publicized violent attacks on politicians by individuals who had been diagnosed with schizophrenia.

Second, in a 2013 study using a national US sample, participants were randomly assigned to read a news story about a mass shooting reportedly committed by a man with mental illness or were assigned to a control group who did not read any news story [10]. Compared with the control group, participants who read the news story about a mass shooting reported significantly higher perceived dangerousness of, and desired social distance from, people with serious mental illness in general.

Public perceptions and attitudes toward persons with mental illness are important to public policy, because people act on the basis of their beliefs, and they tend to support policies that assume those beliefs and perceptions to be true. Thus, if members of the general public largely believe that people with mental illnesses are dangerous and pose a threat to their personal safety, the public will also be more likely to support policies and laws that restrict the liberties of people with mental illnesses [11]—irrespective of whether those policies are necessarily effective and fair. But what does the epidemiologic evidence actually show about the link between violence and serious mental health disorders?

Epidemiologic evidence on the relationship between mental illness and violence

Before the 1990s, empirical evidence of the relationship between violence and mental illness derived largely from clinical forensic studies and small surveys of highly selected populations—research that either examined violent behavior among hospitalized psychiatric patients or psychopathology among incarcerated violent offenders [12]. Neither kind of study was designed to answer the basic epidemiologic question of whether violence was actually more prevalent among people with mental illness in the community compared with the general population, or whether mental illness *per se* caused community violence—because the study populations were already distilled for violence risk and thus not representative.

In 1990, the first large epidemiologic study was published that reported the prevalence of any minor or serious violent behavior in adults with and without diagnosable psychiatric disorders in randomly selected community household samples irrespective of treatment [12,13]. The National Institute of Mental Health Epidemiologic Catchment Area (ECA) study measured violence using an index of survey questions that asked about the occurrence of specific physically assaultive behaviors such as hitting with a fist, pushing, shoving, kicking or throwing things at another person, or using a weapon to harm or threaten another person. Specific mental disorders were defined using Diagnostic and Statistical Manual-III criteria [14] as elicited from a lay-administered structured diagnostic interview. The study collected data on a variety of social and demographic characteristics including socioeconomic status, making it possible to estimate the net relationship between mental illness and violent behavior in the population, using multivariate statistical analyses to control for covarying risk factors. The study also assessed alcohol and illicit drug use and dependence disorder, making it possible to examine the relationship of substance abuse comorbidity to violence risk among people with mental illness living in the community.

Analysis of ECA data from three sites (Baltimore, St. Louis, and Los Angeles, with a combined total of $n = 10,024$ participants) identified a statistically significant but fairly modest positive association between violence and mental illness. The 12-month prevalence of any minor or serious violence among people with schizophrenia, bipolar disorder, or major depression was about 12% overall, and 7% in the subgroup with these disorders alone and no substance abuse comorbidity. That was compared with a general-population prevalence of about 2% in persons without mental disorder or substance use disorder, for an adjusted relative risk of

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