Firearm Violence: Public Mental Health Crisis

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Chair, Department of Psychiatry and Behavioral Medicine
Objectives
1. Identify firearm violence as a public health crisis.

2. Cite the official AMA and APA statements on firearm violence.

3. Identify firearms as violence-eliciting stimuli.

4. Recognize at least 3 major epidemiological studies on the association between mental illness and firearm violence.

5. Identify the predictive value of psychiatric diagnosis in matters of firearm violence.
Houston Airport,
1/1/2017
9-year old girl kills Arizona shooting instructor with Uzi in accident
August 2014

Dylann Roof
Charleston church massacre
June 17, 2015

Sandy Hook Elementary School shooting
December 14, 2012
Port Arthur Massacre, Australia
28-29 April, 1996
(Screenshot from LiveLeak.com - Port Arthur Massacre Victoria Police video Part 1)

A pile of about 4,500 firearms that were handed over as part of Australia's buyback.
David Gray / Reuters
Gun Culture In America
Policy
“A well regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.”

Amendment II, ratified December 17, 1791
American Gun Ownership (2012 est.)

Small Arms Survey, Max Fisher/Washington Post
Theories on the Crime Decline
### Table 1: Popular Theories on the Crime Decline

<table>
<thead>
<tr>
<th>Decade</th>
<th>Factors Contributing to the Crime Drop</th>
<th>Factors that Did Not Seem to Affect Crime</th>
<th>Disputed Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-1999</td>
<td>Aging Population (0-5%)</td>
<td>Enactment of Right-to-Carry Gun Laws (no evidence of effect)</td>
<td>Decreased Crack Use*</td>
</tr>
<tr>
<td></td>
<td>Consumer Confidence*</td>
<td>Use of Death Penalty (no evidence of effect)</td>
<td>Decreased Lead in Gasoline*</td>
</tr>
<tr>
<td></td>
<td>Decreased Alcohol Consumption (5-10%)</td>
<td></td>
<td>Legalization of Abortion*</td>
</tr>
<tr>
<td></td>
<td>Decreased Unemployment (0-5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Growth in Income (0-7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased Incarceration (0-10%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased Police Numbers (0-10%)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Inflation*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>2000-2013</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Decreased Alcohol Consumption (5-10%)</td>
<td>Decreased Crack Use*</td>
<td></td>
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<td></td>
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<td>Decreased Lead in Gasoline*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inflation*</td>
<td>Enactment of Right-to-Carry Gun Laws</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction of CompStat*</td>
<td>(no evidence of effect)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased Incarceration (0-1%)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Increased Police Numbers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(no evidence of an effect)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased Unemployment (0-3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Legalization of Abortion*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of Death Penalty (no evidence of effect)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Brennan Center analysis.\(^{10}\)  
* Denotes summaries of past research. All other findings are based on original empirical analysis.  
\(^{2}\) This report found that the introduction of CompStat-style programs is associated with a 5-15 percent decrease in crime in cities where it was implemented. From this finding, it can be concluded that CompStat had some effect on the national crime drop in the 2000s.

Consistent with the most accepted past studies, this report did not find evidence that right-to-carry gun laws affected crime in the 1990s or 2000s.

2016 Body Count

<table>
<thead>
<tr>
<th>Total Number of Incidents</th>
<th>58,228</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Deaths¹</td>
<td>15,060</td>
</tr>
<tr>
<td>Number of Injuries¹</td>
<td>30,604</td>
</tr>
</tbody>
</table>

Gun violence and crime incidents are collected/validated from 2,000 sources daily – incidents and their source data are found at the gunviolencearchive.org website.

1: Actual number of deaths and injuries

22,000 Annual Suicides not included on Daily Summary Ledger

Numbers on this table reflect a subset of all information collected and will not add to 100% of incidents.

www.gunviolencearchive.org
www.facebook.com/gunviolencearchive

Data Validated: February 20, 2017

GUN VIOLENCE Archive
AMA Calls Gun Violence “A Public Health Crisis;” Will Actively Lobby Congress to Lift Ban on CDC Gun Violence Research

June 14, 2016

(Printed handouts)
“Smart” Guns
A Potential Answer?
“Firearms designed to contain authorization systems which generally combine an authentication mechanism that actuates a blocking mechanism in a seamless process that is designed to take less time than handling and firing a conventional gun.”

Technologies for user authorization

- **Token-Based Technologies**: require the use of an additional physical item, e.g. ring, watch, card, bracelet, etc., to allow for the operation of the system.

- **Biometric Technologies**: utilize unique features of individuals as the “key” to identify authorized users, e.g., fingerprint, palm print, voice, face, and vein pattern.

High-Capacity Firearm Magazine Bans
A "large capacity magazine" is defined as any ammunition feeding device with the capacity to accept more than 10 (15 in CO & NJ) rounds.
State high-capacity magazine bans

1. California
2. Colorado
3. Hawaii
4. Illinois
5. Maryland
6. Massachusetts
7. New Jersey
8. New York
9. Northern Mariana Islands
10. Washington, D.C.
SUPREME COURT OF THE UNITED STATES

DISTRICT OF COLUMBIA et al. v. HELLER

Certiorari To The United States Court Of Appeals For The District Of Columbia Circuit

• Held that D.C.’s ban on handgun possession in the home, as well as the requirement that firearms in the home be stored “unloaded and disassembled or bound by a trigger lock or similar device,” violate the 2\textsuperscript{nd} Amendment.

• Interpreted the 2\textsuperscript{nd} Amendment to protect the right of individuals to keep and bear arms, unconnected with service in a militia.

• Made clear that this right has limits, but the contours of those limits remain unclear.
APA Official Actions

Position Statement on Firearm Access, Acts of Violence and the Relationship to Mental Illness and Mental Health Services

Approved by the Board of Trustees, December 2014
Approved by the Assembly, November 2014
APA Official Actions

Position Statement on Firearm Access, Acts of Violence and the Relationship to Mental Illness and Mental Health Services

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"Policy documents are approved by the APA Assembly and Board of Trustees. These are position statements that define APA official policy on specific subjects." - APA Operations Manual

The American Psychiatric Association recognizes the critical public health need for action to promote safe communities and reduce morbidity and mortality due to firearm-related violence. Specifically, the APA supports the following principles and positions:

1. Many deaths and injuries from gun violence can be prevented through national and state legislative and regulatory measures. Recognizing that the vast majority of gun violence is not attributable to mental illness, the APA views the broader problem of firearm-related injury as a public health issue and supports interventions that reduce the risk of such harm. Actions to minimize firearm injuries and violence should include:
   a. Requiring background checks and waiting periods on all gun sales or transactions;
   b. Requiring safe storage of all firearms in the home, office or other places of daily assembly;
   c. Regulating the characteristics of firearms to promote safe use for lawful purposes and to reduce the likelihood that they can be fired by anyone other than the owner without the owner's consent;
   d. Banning possession of firearms on the grounds of colleges, hospitals, and similar institutions by anyone other than law enforcement and security personnel;
   e. Assuring that physicians and other health care professionals are free to make clinically appropriate inquiries of patients and others about possession of and access to firearms and take necessary steps to reduce the risk of loss of life by suicide, homicide, and accidental injury.

2. Research and training on the causes of firearm violence and its effective control, including risk assessment and management, should be a national priority.
   a. Administrative, regulatory and/or legislative barriers to federal support for violence research, including research on firearms violence and deaths, should be removed.
   b. Given the difficulty in accurately identifying those persons likely to commit acts of violence, federal resources should be directed toward the development and testing of methods that assist in the identification of individuals at heightened risk of committing violence against themselves or others with firearms.
   c. The federal government should develop and fund a national database of firearm injuries. This database should include information about all homicides, suicides, and unintentional deaths and injuries, categorized by specific weapon type, as well as information about the individuals involved (age, sex, personal identifiers), geographic location, circumstances, point of purchase, date and other policy-relevant information.
   d. Funding for research on firearm injuries and deaths should draw on a broad range of public and private resources and support, such as the Centers for Disease Control, the National Institutes of Health, and the National Science Foundation.
   e. All physicians and other health professionals should continue to be trained to assess and respond to those individuals who may be at heightened risk for violence or suicide. Such training should include education about speaking with patients about firearm access and safety. Appropriate federal, state, and local resources should be allocated for training of these professionals. Resources should be increased for safety education programs related to responsible use and storage of firearms.

3. Reasonable restrictions on gun access are appropriate, but such restrictions should not be based solely on a diagnosis of mental disorder. Diagnostic categories vary widely in the kinds of symptoms, impairments, and disabilities found in affected individuals. Even within a given diagnosis, there is considerable heterogeneity of symptoms and impairments. Only a small proportion of individuals with a mental disorder pose a risk of harm to themselves or others. The APA supports banning access to guns for persons whose conduct indicates that they present a heightened risk of violence to themselves or others, whether or not they have been diagnosed with a mental disorder.
1. Many deaths and injuries from gun violence can be prevented through national and state legislative and regulatory measures.
   • The vast majority of gun violence is **not attributable to mental illness**.
   • Firearm-related injury is a **public health issue**.
Actions to minimize firearm injuries and violence:

i. Background checks and waiting periods on all gun sales

ii. Safe storage of all firearms

iii. Regulating the characteristics of firearms to promote safe use for lawful purposes and to reduce the likelihood that they can be fired by anyone other than the owner without the owner’s consent

iv. Banning possession of firearms on certain public grounds by anyone other than law enforcement and security personnel

v. Assuring that health care professionals are FREE to make clinically appropriate inquiries about possession of and access to firearms and take necessary steps to reduce risk

_Wollschaeger v. Governor of Florida_

“Docs vs. Glock”

760 F.3d 1195 (11th Cir. 2014).
2. **Research and training** on the causes of firearm violence and its effective control, including risk assessment and management, should be a national priority.
3. **Reasonable restrictions on gun access are appropriate, but such restrictions should not be based solely on a diagnosis of mental disorder.**
APA Official Actions: Position Statement (cont’d)

4. The **criteria for disqualification from purchasing or possessing firearms** should be carefully defined, and should provide for equal protection of the rights of those disqualified.

There should be a fair and reasonable process for restoration of firearm rights for those disqualified on such grounds.
APA Official Actions: Position Statement (cont’d)

5. Improved **identification** and **access to care**. However, because of the **small percentage of violence overall attributable to mental disorders** (estimated at 3-5% in the U.S., excluding substance use disorders).
Mass Shootings

“Three or more killings in a single incident…”

Investigative Assistance for Violent Crimes Act of 2012

Public Law 112-265

112th Congress

Approved January 14, 2013
Violence Is Contagious!
R. Bond, B. Bushman, 2016
The Contagious Disease Analogy

Exposure to a contagious disease increases risk of contracting the disease.

Exposure to violence—as observer or victim—increases likelihood to perpetrate violence.

doi: 10.2105/AJPH.2016.303550
Gun violence passes from person to person!


Suicide
Centers for Disease Control and Prevention
National Center for Health Statistics
Deaths and Mortality

- Number of deaths: 2,626,418
- Death rate: 823.7 deaths per 100,000 population
- Life expectancy: 78.8 years
- Infant Mortality rate: 5.82 deaths per 1,000 live births

Number of deaths for leading causes of death:

- Heart disease: 614,348
- Cancer: 591,699
- Chronic lower respiratory diseases: 147,101
- Accidents (unintentional injuries): 136,053
- Stroke (cerebrovascular diseases): 133,103
- Alzheimer's disease: 93,541
- Diabetes: 76,488
- Influenza and Pneumonia: 55,227
- Nephritis, nephrotic syndrome and nephrosis: 48,146
- Intentional self-harm (suicide): 42,773
# 10 Leading Causes of Death by Age Group, United States – 2014

<table>
<thead>
<tr>
<th>Rank</th>
<th>Age Group</th>
<th>Causes</th>
<th>Age Group</th>
<th>Causes</th>
<th>Age Group</th>
<th>Causes</th>
<th>Age Group</th>
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<th>Causes</th>
<th>Age Group</th>
<th>Causes</th>
<th>Age Group</th>
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<tr>
<td>2</td>
<td>&lt;1</td>
<td>Short Gestation 4,173</td>
<td>1-4</td>
<td>Congenital Anomalies 399</td>
<td>5-9</td>
<td>Malignant Neoplasms 438</td>
<td>10-14</td>
<td>Suicide 425</td>
<td>15-24</td>
<td>Suicide 5,079</td>
<td>25-34</td>
<td>Suicide 6,569</td>
<td>35-44</td>
<td>Malignant Neoplasms 11,267</td>
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<tr>
<td>3</td>
<td>&lt;1</td>
<td>Maternal Pregnancy Comp. 1,574</td>
<td>1-4</td>
<td>Congenital Anomalies 192</td>
<td>5-9</td>
<td>Malignant Neoplasms 416</td>
<td>10-14</td>
<td>Homicide 4,144</td>
<td>15-24</td>
<td>Homicide 4,159</td>
<td>25-34</td>
<td>Heart Disease 10,368</td>
<td>35-44</td>
<td>Unintentional Injury 20,610</td>
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<tr>
<td>4</td>
<td>&lt;1</td>
<td>Unintentional Injury 1,151</td>
<td>1-4</td>
<td>Congenital Anomalies 416</td>
<td>5-9</td>
<td>Malignant Neoplasms 3,624</td>
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<td>Suicide 6,706</td>
<td>15-24</td>
<td>Suicide 8,767</td>
<td>25-34</td>
<td>Chronic Low. Respiratory Disease 16,492</td>
<td>35-44</td>
<td>Chronic Low. Respiratory Disease 113,308</td>
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<tr>
<td>5</td>
<td>&lt;1</td>
<td>Placenta Cord. Membranes 965</td>
<td>1-4</td>
<td>Heart Disease 149</td>
<td>5-9</td>
<td>Heart Disease 69</td>
<td>10-14</td>
<td>Homicide 156</td>
<td>15-24</td>
<td>Heart Disease 953</td>
<td>25-34</td>
<td>Heart Disease 3,341</td>
<td>35-44</td>
<td>Homicide 2,588</td>
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<td>6</td>
<td>&lt;1</td>
<td>Bacterial Sepsis 544</td>
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<td>Influenza &amp; Pneumonia 109</td>
<td>5-9</td>
<td>Chronic Low. Respiratory Disease 68</td>
<td>10-14</td>
<td>Unintentional Injury 1,151</td>
<td>15-24</td>
<td>Unintentional Injury 1,151</td>
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<td>Unintentional Injury 1,151</td>
<td>35-44</td>
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<td>7</td>
<td>&lt;1</td>
<td>Respiratory Distress 460</td>
<td>1-4</td>
<td>Septicemia 53</td>
<td>5-9</td>
<td>Cerebrovascular 43</td>
<td>10-14</td>
<td>Diabetes Mellitus 709</td>
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<td>Diabetes Mellitus 1,999</td>
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<td>Cerebrovascular 5,349</td>
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<td>Circulatory System Disease 444</td>
<td>1-4</td>
<td>Septicemia 33</td>
<td>5-9</td>
<td>Septicemia 33</td>
<td>10-14</td>
<td>Diabetes Mellitus 181</td>
<td>15-24</td>
<td>HIV 583</td>
<td>25-34</td>
<td>Cerebrovascular 1,745</td>
<td>35-44</td>
<td>Cerebrovascular 4,402</td>
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<tr>
<td>9</td>
<td>&lt;1</td>
<td>Neonatal Hemorrhage 441</td>
<td>1-4</td>
<td>Benign Neoplasms 38</td>
<td>5-9</td>
<td>Benign Neoplasms 36</td>
<td>10-14</td>
<td>Influenza &amp; Pneumonia 41</td>
<td>15-24</td>
<td>Chronic Low. Respiratory Disease 178</td>
<td>25-34</td>
<td>Cerebrovascular 579</td>
<td>35-44</td>
<td>HIV 1,174</td>
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<tr>
<td>10</td>
<td>&lt;1</td>
<td>Perinatal Period 38</td>
<td>1-4</td>
<td>Septicemia 33</td>
<td>5-9</td>
<td>Septicemia 33</td>
<td>10-14</td>
<td>Influenza &amp; Pneumonia 177</td>
<td>15-24</td>
<td>Influenza &amp; Pneumonia 549</td>
<td>25-34</td>
<td>Influenza &amp; Pneumonia 1,125</td>
<td>35-44</td>
<td>Influenza &amp; Pneumonia 3,390</td>
</tr>
</tbody>
</table>

All suicides

• Number of deaths: 42,773
• Deaths per 100,000 population: 13.4
• Cause of death rank: 10

Firearm suicides

• Number of deaths: 21,334
• Deaths per 100,000 population: 6.7
• Age-adjusted death rate from firearm injuries (all intents) did not change significantly in 2014 from 2013.

• The two major component causes of firearm injury deaths in 2014 were suicide (63.5%) and homicide (32.6%).

• Age-adjusted death rate for firearm homicide decreased from 3.6 in 2013 to 3.5 in 2014.

• Rate for firearm suicide did not change.

“The Weapons Effect”
Leonard Berkowitz & Anthony LePage, 1967
Weapons as aggression-eliciting stimuli.

“Tested the hypothesis that stimuli commonly associated with aggression can elicit aggressive responses from people ready to act aggressively. 100 male university students (ss) received either 1 or 7 shocks, supposedly from a peer, and were then given an opportunity to shock this person. In some cases a rifle and revolver were near the shock key. These weapons were said to belong, or not to belong, to the available target person. In other instances there was nothing near the key, while for controls 2 badminton racquets were near the key.

The greatest number of shocks was given by the strongly aroused ss (who had received 7 shocks) when they were in the presence of the weapons. The guns had evidently elicited strong aggressive responses from the aroused men.”

“Guns not only permit violence, they can stimulate it as well. The finger pulls the trigger, but the trigger may also be pulling the finger.”

- Leonard Berkowitz

“...[T]he mere presence of weapons can increase aggressive behavior by automatically priming aggressive thoughts.”

McGinty et al., Health Aff June 2016 vol. 35 no. 6. 1121-1129
Volume and content of a random sample of 400 news stories about mental illness from the period 1995–2014:

Specific topics mentioned in news coverage about mental illness, 1995–2014

<table>
<thead>
<tr>
<th>Topic</th>
<th>1995-2014 (N = 400)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>Any type of violence related to mental illness</td>
<td>219</td>
</tr>
<tr>
<td>Interpersonal violence related to mental illness</td>
<td>152</td>
</tr>
<tr>
<td>Self-directed violence <em>(suicide)</em> related to mental illness</td>
<td>114</td>
</tr>
<tr>
<td>Any type of treatment of mental illness</td>
<td>187</td>
</tr>
<tr>
<td>Description of successful treatment for or recovery from mental illness</td>
<td>55</td>
</tr>
</tbody>
</table>

News Media: Findings

• Coverage emphasizing IPV is disproportionate to actual rates.

• Initiatives to educate media are needed.

• Efforts to increase news depictions of successful treatment have the potential to reduce social stigma.

Mental Illness and Guns
Prevalence of Serious Mental Illness Among U.S. Adults (2014)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>4.1</td>
</tr>
<tr>
<td>Female</td>
<td>5.0</td>
</tr>
<tr>
<td>Male</td>
<td>3.1</td>
</tr>
<tr>
<td>18-25</td>
<td>4.8</td>
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<tr>
<td>25-49</td>
<td>4.9</td>
</tr>
<tr>
<td>50+</td>
<td>3.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.5</td>
</tr>
<tr>
<td>White</td>
<td>4.4</td>
</tr>
<tr>
<td>Black</td>
<td>3.1</td>
</tr>
<tr>
<td>Asian</td>
<td>2.4</td>
</tr>
<tr>
<td>NH/OPI*</td>
<td>2.9</td>
</tr>
<tr>
<td>AI/AN**</td>
<td>4.0</td>
</tr>
<tr>
<td>2 or More</td>
<td>8.9</td>
</tr>
</tbody>
</table>

*NH/OPI = Native Hawaiian/Other Pacific Islander  
**AI/AN = American Indian/Alaska Native

Data courtesy of SAMHSA

Wake Forest Baptist Medical Center
Prevalence of Any Mental Illness Among U.S. Adults (2014)

Percent

Overall: 18.1%
Female: 21.8%
Male: 14.1%
18-25: 20.1%
26-49: 20.4%
50+: 15.4%
Hispanic: 15.6%
White: 19.2%
Black: 16.3%
Asian: 13.1%
NH/OPI*: 22.3%
AI/AN**: 21.2%
2 or More: 27.1%

Sex
Age Group
Race

*NH/OPI = Native Hawaiian/Other Pacific Islander
**AI/AN = American Indian/Alaska Native

Data courtesy of SAMHSA
NIH
National Institute of Mental Health

Wake Forest Baptist Medical Center
Epidemiology: SPMI v. Violence
Starting in the 1990s, several studies were designed to answer the epidemiologic question of whether violence was more prevalent among people with mental illness compared with the general population, or whether mental illness *per se* caused community violence.

I. The National Institute of Mental Health Epidemiologic Catchment Area (ECA) Study

II. Dunedin Birth Cohort Study

III. The MacArthur Violence Risk Assessment Study (MVRAS)

IV. Swanson et al.

V. The National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE)

VI. Van Dorn et al.

VII. Coid et al.
I. NIMH Epidemiologic Catchment Area (ECA) Study

• Identified a statistically significant but fairly modest positive association between violence and mental illness.

• 12-month prevalence of violence among people with SCZ, BPD, or MDD: 12%. 7% in the subgroup with these disorders and no SUD comorbidity.

Compared with a general-population prevalence of 2% in persons without mental disorder or SUD, for an adjusted relative risk of 3:1 for mental illness alone.

• Lifetime violence rates (not necessarily during a period of mental disorder):
  • 15% for the population without mental illness
  • 33% in those with SMI only
  • 55% for those with SMI and SUD

• The 1-year population attributable risk of violence (takes into account both the magnitude of risk and the number of people in the risk category within the population) associated with serious mental illness alone was found to be only 4%.

ECA Study: Implications:

• Even if the elevated risk of violence in people with mental illness were reduced to the average risk in those without mental illness, 96% of current violence in the general population would continue to occur.

• *Risk factors statistically predictive of violence in people with or without mental illness:*

  Younger individuals, males, lower socioeconomic status, SUDs.

• When persons with mental illness behave violently, it is often for the same reasons as the non–mentally ill.

• Violence is a complex societal problem that is caused, more often than not, by other factors besides mental illness.

II. Mental disorders and violence in a total birth cohort: results from the Dunedin study

- A meta-analyses of 20 studies on violence in patients with SCZ spectrum disorders reported that the risk of violence was 3-5 times higher for men with SCZ, and 4-13 times higher for women with SCZ, compared with their counterparts without SCZ in the general population.

- Odds are higher when homicide is considered as the violence outcome, and for any violence in studies comparing first-episode psychosis patients to population controls.

- The overall risk increase for violence is similar in BPD, where a meta-analysis synthesized 9 studies and reported increased odds of violent outcomes in bipolar patients in the range of 3:1 to 6:1 compared with the general population.

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Others with inc. risks compared with population controls are TBI, PD, LD or MRDD and MDD.

- Two diagnoses with higher odds of violence: SUDs and ASPD.
- Assuming causality, population attributable risk fractions for violence range from 2%-10% psychoses, 20% PDs, and 20%-25% for SUDs.

III. The MacArthur Violence Risk Assessment Study (MVRAS), 2001

- Cohort >1000 discharged psychiatric inpatients.

- **Substance abuse comorbidity** was responsible for much of the violence in discharged psychiatric patients; patients without SUD had no higher risk of violent behavior than their neighbors in the same community.

Because many of the patients lived in disadvantaged high-crime neighborhoods, and because the base rates of violence among both the patients and community comparison groups were substantially higher than in the ECA study, one interpretation of the MVRAS findings is that the social-environmental influences on violence are stronger than the effects of psychopathology and tend to “wash out” those effects at the population level.
IV. The social-environmental context of violent behavior
Swanson et al., 2002

Predicted probability of serious violent behavior in persons with serious mental illness by combined risk factors, controlling for significant covariates in a logistic regression model (n = 802).

Note. Risk factors are as follows: N = none; S = substance abuse; V = violent victimization history; E = exposure to violence in current environment.

Swanson et al., 2002

- Prevalence and correlates of interpersonal violent behavior in a five-state pooled sample of $n = 802$ adult psychiatric outpatients with SMI.

- Sample comprised individuals with serious and disabling mental health conditions, as well as low social capital: unemployed, impoverished, disadvantaged neighborhoods, SUDs, high rates of trauma and violent victimization over their life course.

  *Many of these characteristics and experiences are highly significant correlates of violent behavior.*

- Participants who had a diagnosis of SMI but did not have a history of violent victimization, exposure to neighborhood violence, nor SUD, had annual rates of violent behavior in line with the general population without any mental illness—about 2%.

V. The NIMH CATIE Study, mid-2000s

Multisite randomized clinical trial; investigated violent outcomes in $n = 1445$ schizophrenia patients.

- About **one-third** of the sample had a history of **antisocial behavior** that preceded the onset of adult psychotic illness and were about **twice** as likely to have engaged in recent violent behavior (28.2% vs. 14.6%) as their counterparts who did not have antisocial history.

- Violent behavior was not significantly correlated with acute psychotic symptoms, but rather was associated with a history of early life **victimization** and **trauma**.

- Their risk of violence did **not** significantly decline with adherence to prescribed antipsychotic medications. At the same time, psychosis clearly contributed to violence in some participants.

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Patients with acutely elevated psychotic symptoms were three times more likely to commit a serious violent act.

VI. Mental disorder and violence: is there a relationship beyond substance use?
Van Dorn et al., 2012

Percent of respondents reporting recent violence by type and number of diagnoses

Confirmed the basic pattern of the ECA findings with an analysis of the association between violence and mental illness using data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) study (household survey of 32,653 persons).

- 2.9% of persons with SMI alone committed violent acts in a year, compared with 0.8% of people with no mental disorders or substance abuse—a statistically significant relative risk, despite a low absolute risk of violence in people with SMI.

- Co-occurring SUDs and SMI had a higher rate of violence, 10.0%.

A clinician would STILL be wrong nine times of 10 with a blanket prediction that someone will commit a violent act merely because they have a combination of, e.g., depression and alcohol use disorder.

The inclusion of demographic risk factors in the prediction calculus would improve its accuracy, just as it would for those in the general population without mental illness.
VII. The relationship between delusions and violence

Coid et al., 2013

• Violence in first-episode psychosis *mediated by anger*.

• When an acutely psychotic individual harbors delusional beliefs that others are threatening to harm him, this may kindle irrational anger b/c normal cognitive controls are impaired.

• The findings of Coid et al. are consistent with Link's theory of “rationality within irrationality” and “threat/control-override” as an explanation of violence in some persons with psychotic symptoms.


Leading indicators of community-based violent events among adults with mental illness
Van Dorn et al., 2016

Van Dorn et al., 2016

Method

• Integrated data from four longitudinal studies of adults with mental illness.

• Assessments took place at baseline, and at 1, 3, 6, 9, 12, 15, 18, 24, 30 and 36 months.

• Data were analyzed with the autoregressive cross-lag model.

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Results

• Violence and victimization were leading indicators of each other and affective symptoms were a leading indicator of both.

• Drug and alcohol use were leading indicators of violence and victimization, respectively.

• All psychiatric symptom clusters – affective, positive, negative, disorganized cognitive processing – increased the likelihood of experiencing at least one subsequent symptom cluster.

• Sensitivity analyses identified few group-based differences in the magnitude of effects in this heterogeneous sample.

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Van Dorn et al., 2016

Leading indicators of violent events

- Violence perpetration was positively indicated by both itself and violent victimization.
- **Affective symptoms** and **drug use** increased the likelihood of subsequent violence perpetration.
- **Disorganized cognitive processing symptoms** decreased the likelihood of subsequent violence perpetration.

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Graphical depiction of leading indicators and outcomes of violent events over time among adults with mental illness.

Mental Illness; Access to Guns
Examined rates of gun access, gun carrying, and safe storage among a large, nationally representative sample of adults \( (n = 5692) \) with and without lifetime mental disorders and found no statistically significant association.

- **34.1%** of persons *with* lifetime mental disorders had access to a gun, **4.8%** carried a gun, and **6.2%** stored a gun in an unsafe manner.

- Persons *without* lifetime mental disorders \( (n = 2034) \) : **36.3%** had access to a gun, **5.0%** carried a gun, and **7.3%** stored a gun unsafely.

- Persons with prior suicide attempt were less likely to have access to a gun than those who had never attempted suicide (**23.8%** vs. **36.0%)).
Predictive Value: Psychiatric Diagnosis v. Gun Violence
“Data supporting the predictive value of psychiatric diagnosis in matters of gun violence is thin at best. Psychiatric diagnosis is largely an observational tool, not an extrapolative one.

Research dating back to the 1970s suggests that psychiatrists using clinical judgment are not much better than laypersons at predicting which individual patients will commit violent crimes and which will not.”

The Accuracy of Predictions of Violence to Others
Lidz et al., 1993

• Prospective study following a sample of 357 psychiatric patients seen in emergency settings and clinically assessed as likely to be violent, along with a matched sample of patients who were not predicted to be violent.

• Structured interviews with the patients and collateral informants to assess the occurrence of violent behavior over a 6-month period, comparing the rates of violence in the two groups.

Lidz et al., 1993

• Violence during the follow-up period was reported in approximately 45% of the cases: 36% in the comparison group and 53% in the cases predicted to be violent.

• Overall clinical accuracy was significantly better than chance, but predictions of female patients' violence were not better than chance.
Physician Beliefs about Physical and Mental Competency of Patients
Goldstein et al., 2015

222 North Carolina physicians participated in this survey (40% response rate):

• Physicians most frequently chose mild dementia, post-traumatic stress disorder, and recent depression as conditions that would render a patient not competent to carry a concealed weapon.

• Male physicians and those owning a gun were more likely to deem a patient competent.

• Almost a third of physicians were unsure about competence for most conditions.

Racial Perspective

Firearm Violence As A Health Disparity
Black Homicide Victimization in the United States: An Analysis of 2013 Homicide Data

FBI Supplementary Homicide Report (SHR)

• The overall national homicide rate was 4.27 per 100,000.
  • The homicide rate among black victims was 16.91 per 100,000.
  • For whites, the national homicide rate was 2.54 per 100,000.

• 7% of black homicide victims were less than 18 years old and 2% were 65 years of age or older. The average age was 31 years old.

• For homicides in which the weapon used could be identified:
  • 84% of black victims were shot and killed with guns. Of these, 73% were killed with handguns.
  • 65% of white victims and 74% of victims of all races were killed with guns.

U.S. gun deaths by race and gender, 2011-2013

Note: These figures have all been calculated using a 2011-2013 average to smooth single-year fluctuations.
Source: CDC Injury Prevention & Control database.