The epidemiology of health inequities in suicidal behavior and prevention

Prevention Science and Methodology Group
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Learning Objectives

- At the conclusion of the session, participants should be able to:
  - Address the rationale for correcting health disparities
  - Describe the public health approach
  - Identify health inequities in suicidal behaviors
  - Show how the public health approach can address inequities
Defining “Health Differences”

Conceptual Issues

- Disparity – inequality; difference in rank, condition
- Inequality -- lack of equality as of opportunity, treatment or status
- Inequity – unfair and unjust
  - unnecessary and avoidable

Why address health inequities?

- Inequalities are unjust
- Inequalities affect everyone
- Inequalities are avoidable
- Interventions to reduce inequalities are cost effective

Why address health inequities?

• Action 2. Address Upstream Factors that Impact Suicide
• Focus on ways to prevent everyone from suicide.
• Action 2.3 Engage and support high-risk and underserved groups.
• the prevalence of suicidal behaviors varies across groups and subgroups and changes over time.
• Suicide prevention efforts should focus on populations disproportionately impacted by suicide in different ways.


The Public Health Approach to Prevention

• The public health approach seeks to answer the foundational questions:
  o What is the problem?
  o How could we prevent it from occurring?
• To answer these questions, public health uses a systematic, scientific method for understanding and preventing suicide.

1. Assess the problem
   Who, what, where, when

2. Identify causes
   Why

3. Develop and test programs and policies
   What works

4. Disseminate and implement
   How to do it
Public Health Approach to Suicide Prevention

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Leading causes of death – United States, 2019

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
<th>Number of deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heart Disease</td>
<td>659,041</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td>599,601</td>
</tr>
<tr>
<td>3</td>
<td>Unintentional Injuries</td>
<td>173,040</td>
</tr>
<tr>
<td>4</td>
<td>Chronic Lower Respiratory Ds</td>
<td>156,979</td>
</tr>
<tr>
<td>5</td>
<td>Cerebrovascular Ds</td>
<td>150,005</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer’s Disease</td>
<td>121,499</td>
</tr>
<tr>
<td>7</td>
<td>Diabetes mellitus</td>
<td>87,647</td>
</tr>
<tr>
<td>8</td>
<td>Nephritis</td>
<td>51,565</td>
</tr>
<tr>
<td>9</td>
<td>Influenza and pneumonia</td>
<td>49,783</td>
</tr>
<tr>
<td>10</td>
<td>Suicide</td>
<td>47,511</td>
</tr>
</tbody>
</table>

Source: CDC vital statistics
Suicide among all persons by sex -- United States, 1933-2019

Suicidal rates among by age group and sex -- United States, 1999 and 2019

Source: CDC vital statistics

Suicidal rates among by race/ethnicity and sex -- United States, 1999 and 2019


Suicide rates among all persons by age and sex--United States, 2019

Source: CDC vital statistics
Suicides and suicide rates among all persons -- United States, 2019

Source: CDC vital statistics

Suicide rates by ethnicity and age group -- United States, 2015-2019

Source: CDC Vital Statistics
Suicide rates by ethnicity and age group -- United States, 2015-2019

Source: CDC Vital Statistics
Suicide by ethnicity and method – United States, 2019

Suicide rates among males aged 15-24 years by ethnicity -- United States, 1990-2019

Source: Centers for Disease Control and Prevention Vital statistics, WISQARS
Age-adjusted suicide rates among all persons by state -- United States, 2019 (U.S. avg 13.9)

Source: CDC vital statistics

Age-adjusted suicide rates among all persons by county -- Colorado, 2013-2016 (Avg 19.6)

Source: Colo Violent Death Reporting System (VDRS) - https://www.colorado.gov/pacific/cdphe/colorado-violent-death-reporting-system
Suicide rates by level of county urbanization among persons aged ≥10 years – U.S., 1999-2015

Average annual rate* of suicides and suicide attempts by race and ethnicity – NY, 2009-2012

Source: CDC vital statistics

Number and ratio of persons affected by suicidal thoughts and behavior among adults aged ≥18 years — United States, 2017

- Deaths*: 45,390 (1)
- Hospitalizations†: 120,480 (2.7)
- Emergency Department visits§: 394,352 (8.7)
- Suicide attempts¶: 1,388,000 (30.6)
- Seriously considered suicide**: 10,642,000 (234.4)

*Source: CDC’s National Vital Statistics System.
†Source: Agency for Healthcare Research and Quality’s Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS) only 1st diagnosis
§Source: CDC’s National Electronic Injury Surveillance System - All Injury Program
¶Source: SAMHSA’s National Survey on Drug Use and Health
**Source: SAMHSA’s National Survey on Drug Use and Health

Number in parentheses represent the ratio of deaths to other categories.
Self-inflicted injury among all persons by age and sex--United States, 2018

Suicidal ideation and behavior among high school students by category and sex* -- U.S., 2019

Source: CDC WISQARS NEISS-AIP

Source: CDC Youth Risk Behavior Survey

* During the 12 months preceding the survey

^One or more times
Percentage of high school students who report suicidal behavior* by sex – U.S., 1990-2019

Year | Female | Male | Total
--- | --- | --- | ---
1990 | 10% | 8% | 9%
1991 | 12% | 10% | 11%
1992 | 14% | 12% | 13%
1993 | 16% | 14% | 15%
1994 | 18% | 16% | 17%
1995 | 20% | 18% | 19%
1996 | 22% | 20% | 21%
1997 | 24% | 22% | 23%
1998 | 26% | 24% | 25%
1999 | 28% | 26% | 27%
2000 | 30% | 28% | 29%
2001 | 32% | 30% | 31%
2002 | 34% | 32% | 33%
2003 | 36% | 34% | 35%
2004 | 38% | 36% | 37%
2005 | 40% | 38% | 39%
2006 | 42% | 40% | 41%
2007 | 44% | 42% | 43%
2008 | 46% | 44% | 45%
2009 | 48% | 46% | 47%
2010 | 50% | 48% | 49%
2011 | 52% | 50% | 51%
2012 | 54% | 52% | 53%
2013 | 56% | 54% | 55%
2014 | 58% | 56% | 57%
2015 | 60% | 58% | 59%
2016 | 62% | 60% | 61%
2017 | 64% | 62% | 63%
2018 | 66% | 64% | 65%
2019 | 68% | 66% | 67%

Source: Youth Risk Behavior Surveillance System
*At least one attempt during the 12 months preceding the survey

Percentage of high school students who report suicidal behavior* by ethnicity, 1990-2019

Year | Eur-Am Non-Hisp | Afr-Am Non-Hisp | Hispanic | BIA students
--- | --- | --- | --- | ---
1990 | 10% | 8% | 9%
1991 | 12% | 10% | 11%
1992 | 14% | 12% | 13%
1993 | 16% | 14% | 15%
1994 | 18% | 16% | 17%
1995 | 20% | 18% | 19%
1996 | 22% | 20% | 21%
1997 | 24% | 22% | 23%
1998 | 26% | 24% | 25%
1999 | 28% | 26% | 27%
2000 | 30% | 28% | 29%
2001 | 32% | 30% | 31%
2002 | 34% | 32% | 33%
2003 | 36% | 34% | 35%
2004 | 38% | 36% | 37%
2005 | 40% | 38% | 39%
2006 | 42% | 40% | 41%
2007 | 44% | 42% | 43%
2008 | 46% | 44% | 45%
2009 | 48% | 46% | 47%
2010 | 50% | 48% | 49%
2011 | 52% | 50% | 51%
2012 | 54% | 52% | 53%
2013 | 56% | 54% | 55%
2014 | 58% | 56% | 57%
2015 | 60% | 58% | 59%
2016 | 62% | 60% | 61%
2017 | 64% | 62% | 63%
2018 | 66% | 64% | 65%
2019 | 68% | 66% | 67%

Source: Youth Risk Behavior Surveillance System (YRBSS) & Bureau of Indian Affairs (BIA) YRBSS
*At least one attempt during the 12 months preceding the survey
Suicidal behavior*^ among high school students by sexual identity# and sexual contact – U.S., 2019

*During the 12 months before the survey.
^One or more times.
#Among students who ever had sexual contact


Suicidal behavior reported among those with specific learning disabilities (SLD)^ – Canada*, 2012

*Canadian Community Health Survey
^Other select associations — Epilepsy, Traumatic Brain Injury, Eczema, Autism

Public Health Approach to Suicide Prevention

1. Assess the problem
   Who, what, where

2. Identify causes
   Why

3. Develop and test programs and policies
   What works

4. Disseminate and implement
   How to do it

Source: Phillips MR et al., Culture, Medicine and Psychiatry. 1999
Social-ecological model for addressing suicidal behavior

Examples – Societal
- Inappropriate access to lethal means
- Intergenerational trauma
- Geography
- Economy
- Cultural values

Examples – Community
- Spirituality
- Incarceration
- Reduce social isolation
- Enhance social support
- Reduce barriers to care

Examples – Family/Peer
- Family history of interpersonal or self-directed violence
- Exposure to violence
- Identify and assist persons at risk

Examples – Individual
- Age
- Sex
- Mental illness
- Substance misuse
- Stressful life events
- Increase help-seeking
- Build life skills and resilience

Social Determinants of Health Conceptual Framework

SOCIOECONOMIC AND POLITICAL CONTEXT
- Governance
- Macroeconomic Policies
- Social Policies: Labor market, Housing, Land

PUBLIC POLICIES
- Education, Health, Social Protection

CULTURE AND SOCIETAL VALUES
- Education, Occupation, Income
- Social Cohesion and Social Capital
- Structural Determinants of Health Inequities
- Structural Determinants of Health
- Intermediary Determinants of Health

Material Circumstances (Living and Working Conditions, Food Availability, etc)
- Behaviors and Biological Factors
- Psychological Factors

Impact on Equity in Health and Well-being

Possible causes for inequities

- Socio-economic status
- Health insurance coverage
- Health status, disease severity
- Availability of services
- Discrimination
- System-level
- Provider-level
- Cultural perceptions
- System-level characteristics

CDC’s Technical Packages

- Child Abuse and Neglect
- Sexual Violence
- Youth Violence
- Intimate Partner Violence
- Suicide Prevention

http://www.cdc.gov/violenceprevention/pub/technical-packages.html

Preventing Suicidal behavior Technical Package

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Approach</th>
</tr>
</thead>
</table>
| 1. Strengthen economic supports | • Strengthen household financial security  
• Housing stabilization policies |
| 2. Strengthen access and delivery of suicide care | • Coverage of mental health conditions in health insurance policies  
• Reduce provider shortages in underserved areas  
• Safer suicide care through systems change |
| 3. Create protective environments | • Reduce access to lethal means among persons at-risk of suicide  
• Organizational policies and culture  
• Community-based policies to reduce excessive alcohol use |

Preventing Suicidal behavior Technical Package

<table>
<thead>
<tr>
<th>Strategy</th>
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<tbody>
<tr>
<td>4. Promote connectedness</td>
<td>• Peer norm programs</td>
</tr>
<tr>
<td></td>
<td>• Community engagement activities</td>
</tr>
<tr>
<td>5. Teach coping and problem-solving skills</td>
<td>• Social-emotional learning programs</td>
</tr>
<tr>
<td></td>
<td>• Parenting skill and family relationship approaches</td>
</tr>
<tr>
<td>6. Identify and support people at risk</td>
<td>• Gatekeeper training</td>
</tr>
<tr>
<td></td>
<td>• Crisis intervention</td>
</tr>
<tr>
<td></td>
<td>• Treatment for people at-risk of suicide</td>
</tr>
<tr>
<td></td>
<td>• Treatment to prevent re-attempts</td>
</tr>
<tr>
<td>7. Lessen harms and prevent future risk</td>
<td>• Postvention (i.e., activities which reduce risk and promote healing after a suicide death)</td>
</tr>
<tr>
<td></td>
<td>• Safe reporting and messaging about suicide</td>
</tr>
</tbody>
</table>

Categories of prevention programs

- Integrated/Comprehensive
  - U.N./W.H.O. recommendations
  - U.S. Air Force

- Comprehensive Approach
  - Multi-sectoral partnerships
  - Data-driven decision-making
  - Leveraging existing community resources/programs
  - Selecting strategies and approaches with the best available evidence
  - Effective communication with stakeholders
  - Rigorous evaluation
  - Continuous quality improvement
  - Sustainability

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Necessary Conditions for Policy Change

• Political will
• Knowledge base
• Social strategy

Source: Richmond, Kotelchuk, Handbook of Health Professions Education, 1983
National Strategy for Suicide Prevention (NSSP)

- 4 strategic directions; 13 goals; 60 objectives
- Objective
  - Address the needs of vulnerable groups, be tailored to the cultural and situational contexts in which they are offered, and seek to eliminate disparities


Healthy People 2010, 2020, and 2030

- Healthy People 2010
  - Goal - to eliminate, not just reduce, health disparities.
- Healthy People 2020
  - Goal was expanded even further: to achieve health equity, eliminate disparities, and improve the health of all groups
- Healthy People 2030
  - similar goals to HP 2020
  - “eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all.”

7 phases in comprehensive violence prevention
Conclusion

• Suicide is a significant public health problem
• Patterns have some similarities and differences between groups
• Risk and protective factors have similarities and differences
• Limited programs and policies developed for specific communities
• More information needed on patterns and prevention
• Broad responsibility for addressing the issue
Questions and Comments