The Association between School-Related Victimization, Depressive Symptoms and Suicidality among US High School Students

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Disclosure

• The authors have nothing to disclose

• There is no known or anticipated conflict of interest with our employers or any other entity.

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The Learners will be able to:

• describe the prevalence of school-related victimization among high school students in the United States.

• describe the prevalence of depressive symptoms and suicidality among high school students in the United States.

• explain the use and significance of the Center for Disease Control’s Youth Risk Behavior Survey (YRBS) as it relates to trends in victimization, depressive symptoms and suicidality.

• discuss the implications of the relationships between student victimization, depressive symptoms and suicidality among US high school students.

• Compare US trends in depression and suicidality among US high school students with related international studies.
Global Suicide Rate Comparisons: All Ages

Age-standardized suicide rates per 100,000 population

- **GLOBAL**: 10.67
- **WESTERN PACIFIC**: 9.11
- **EASTERN MEDITERRANEAN**: 4.34
- **EUROPE**: 11.93
- **SOUTH-EAST ASIA**: 13.27
- **AMERICAS**: 9.09
- **AFRICA**: 12.84
Figure 3  Suicide Rates for G8 Countries

(suicides/100,000 pop.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>2009</td>
<td>26.5</td>
<td>8.5</td>
<td>18.0</td>
</tr>
<tr>
<td>Japan</td>
<td>2009</td>
<td>24.4</td>
<td>13.2</td>
<td>11.2</td>
</tr>
<tr>
<td>France</td>
<td>2008</td>
<td>16.7</td>
<td>8.5</td>
<td>8.2</td>
</tr>
<tr>
<td>Germany</td>
<td>2010</td>
<td>12.3</td>
<td>6.1</td>
<td>6.2</td>
</tr>
<tr>
<td>USA</td>
<td>2007</td>
<td>18.6</td>
<td>11.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Canada</td>
<td>2004</td>
<td>18.3</td>
<td>11.3</td>
<td>7.0</td>
</tr>
<tr>
<td>UK</td>
<td>2010</td>
<td>17.3</td>
<td>10.6</td>
<td>6.7</td>
</tr>
<tr>
<td>Italy</td>
<td>2008</td>
<td>25.3</td>
<td>10.3</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Source: Data compiled by the Cabinet Office based on World Health Organization figures.
Youth Suicide is a major global concern

• Globally, suicide accounts for 6% of deaths among youth (10-24 years)

• 2\textsuperscript{nd} leading cause of death among females 10 – 24 years

• 3\textsuperscript{rd} leading cause among males aged 10–24 years

Reference:

Associated Behavioral Health Effects of Bullying Victimization

- **Anxiety** (Kowalski & Limber, 2013)


- **Suicidality** (Borowsky, Taliaferro & McMorris, 2013; Schneider & Coulter, 2011; Udheim, 2012)

Need nationally-representative data!
Other Associated Harmful Effects of Bullying Victimization

• Negative health-related quality of life (Chen & Huan, 2015)
• Substance use (Bennet, Guran & Ramos, 2011)
• Eating Disorders, poor sleep, increased sexual activity (Dunn, Gjelsvik, Pearlman & Clark, 2014)
• Sexual risk-taking (Bennet, Guran & Ramos, 2011)
• School absence (Ramirez et al., 2012)
• Poor school performance (Schneider & Coulter, 2011)
• Bullying perpetration (Bauman, Toomey & Walker, 2013)
Data Source:
Youth Risk Behavior Survey (YRBS) 1991-2015

• Survey with >80 variables, conducted by Centers for Disease Control (CDC) every 2 years

• Nationally-representative of US High School Students
  • Complex multi-stage cluster sampling design.
  • Sampling weights (Minorities oversampled).
  • Requires specialized software for complex survey designs.

• Principal nationally-representative high school survey of violence

• Source to measure progress for bullying and suicide attempts in Healthy People 2020 (HP 2020)
School-related Victimization is defined as:

**School Bullying**

Bullying [at school] involves aggressive acts that:

- are meant to hurt another person.
- happen repeatedly.
- have an imbalance of power.

*Olweus, 1994*

**Threats or injury with a weapon at school or to or from school**
Healthy People 2020 Objectives:

<table>
<thead>
<tr>
<th>GOAL: Reduce school bullying among adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline in 2009:</strong></td>
</tr>
<tr>
<td>19.9% of HS students reported they were</td>
</tr>
<tr>
<td>bullied on school property in previous 12</td>
</tr>
<tr>
<td>months in 2009</td>
</tr>
<tr>
<td><strong>Target for 2019:</strong></td>
</tr>
<tr>
<td>17.9 %</td>
</tr>
<tr>
<td><strong>Target-Setting Method:</strong></td>
</tr>
<tr>
<td>10 % improvement</td>
</tr>
<tr>
<td><strong>5 year TREND Results</strong></td>
</tr>
<tr>
<td>No improvement overall</td>
</tr>
<tr>
<td>(Male ↓ 16%, Females ↑ 16%)</td>
</tr>
</tbody>
</table>

*Office of Disease Prevention and Health Promotion (ODPHP)*
Prevalence of US High School Student Victimization by Gender

<table>
<thead>
<tr>
<th>Student Victimization</th>
<th>Pooled Data</th>
<th>% SE</th>
<th>OR (95%CI)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullied at School</td>
<td>2009-15</td>
<td>Males (Ref)</td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.1 (0.40)</td>
<td>22.9 (0.44)</td>
<td>1.46 (1.37-1.55)</td>
</tr>
<tr>
<td>Threatened/Injured with a weapon at (to/from) School</td>
<td>2009-15</td>
<td>8.5 (0.25)</td>
<td>5.3 (0.20)</td>
<td>0.61 (0.56-0.66)</td>
</tr>
</tbody>
</table>

Females more likely bullied at school
Males more likely threatened or injured with a weapon
Significance: **=p<0.01

Global Bullying Prevalence

Estimates vary between countries, ranging <10% to > 65%.

2/3 reported they had been victims of bullying (N = 100,000/18 countries)

UNICEF U-Report/ Special Representative of the UN Secretary General on Violence against Children (2016)

Among 40 developing countries 42% of boys and 37% of girls were exposed to bullying.

For more information, see, “School Violence and Bullying Presented at the International Symposium on School Violence and Bullying: From Evidence to Action, Seoul, Republic of Korea, 17 – 19 January 2017”
Healthy People 2020 Objectives

**GOAL: Reduce Suicidality among adolescents**

<table>
<thead>
<tr>
<th>Baseline in 2009:</th>
<th>19.9% of HS students reported they were bullied on school property in previous 12 months in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target for 2019:</td>
<td>17.9 %</td>
</tr>
<tr>
<td>Trends</td>
<td><strong>No Improvement overall, ↑in Females</strong></td>
</tr>
</tbody>
</table>

**Youth Risk Behavior Survey (YRBS) dataset is the source to measure progress: Office of Disease Prevention and Health Promotion (ODPHP)**
US Trends in Prevalence of Depressive Symptoms

Pontes, Ayres & Pontes (2017)
YRBS 2009-2015
US Trends in Suicidal Ideation

Pontes, Ayres & Pontes (2017) YRBS

Percentage of Students Who Had Suicidal Ideation, 95% CI, by Gender & Year
Prevalence of suicide ideation in the past 12 months among male and female students in 32 Low and Middle-Income Countries, 2003–2012

McKinnon, B., Geneviève Gariépy, Mariane Sentenac & Frank J Elgar (2016)
US Trends in Suicide Attempts

Percentage of Students Who Attempted Suicide, 95% CI by Gender & Year

- **2015**
  - Women: 11.9%
  - Men: 5.7%
- **2013**
  - Women: 10.8%
  - Men: 5.5%
- **2011**
  - Women: 10.1%
  - Men: 6.0%
- **2009**
  - Women: 8.1%
  - Men: 4.6%

Pontes, Ayres & Pontes (2017) YRBS
Aims of Research:

...to use nationally-representative data to examine relationships between US high school-related victimization: 1) bullying and 2) threats/injuries with a weapon and three indicators of psychological distress: 1) depressive symptoms, 2) suicidal ideation, and 3) suicide attempts.
Methodology: N = 61,042
YRBS Data: 2009 (n=16,410); 2011(n=15,425); 2013 (n=13,583); 2015 (n=15,624)

Independent Variables

During the past 12 months have you ever been:
• bullied at school?
• threatened or injured with a weapon while at school, or to or from school?

Dependent Variables

• During the past 12 months have you ever:
  • Felt sad or hopeless...
  • had thoughts of suicide?
  • attempted suicide?
  • had and injury from attempted suicide that required treatment by a nurse or doctor?
Analyses

• Four waves of YRBS data (2009, 2011, 2013, and 2015) were pooled and analyzed using multivariate logistic regression with SPSS 24 Complex Samples™.

• Analyses were performed for three samples, 1) all students, 2) male students, and 3) females students.

* Analyses correctly incorporates the multi-stage sampling design and sampling weights to enable nationally-representative estimates with associated standard errors and confidence intervals.
School Bullying is significantly related to...

- **depressive symptoms** OR=2.79 (95% CI=2.63-2.97)
- **suicidal ideation** OR=3.03 (95% CI=2.85-3.23)
- **suicide attempt** OR=2.86 (95% CI=2.57-3.18)
There were significant relationships between School Weapon-related victimization and...

- **depressive symptoms** OR=2.57  
  (95% CI=2.34-2.83)

- **suicidal ideation** OR = 2.80  
  (95% CI=2.51-3.12)

- **suicide attempt** OR=4.76  
  (95% CI=4.14-5.48)
Other Key Findings...

• Weapon related victimization and suicide attempt was more positive (OR=4.76) than the association between bullying and suicide attempt (OR=2.80).

• Weapon-related victimization and suicidal ideation and attempts was significantly greater among males than females
  • Suicidal Ideation - Males(OR=3.10, 95% CI=2.71-3.55) than females (OR=2.46, 95% CI=2.11-2.87).
  • Suicidal Attempts - Males (OR=6.45, 95% CI=5.29-7.85) than females (OR=3.56, 95% CI=3.01-4.21).

• Hispanic students compared to non-Hispanic whites were significantly more likely to report depressive symptoms, suicidal ideation, and suicide attempts.

• All minority student groups were significantly more likely to attempt suicide than non-Hispanic White students.
Conclusions

School bullying victimization and weapon-related violence victimization have very large effects on depressive symptoms and Suicidality among high school US students.
Next Steps... More Questions

1. More “upstream” efforts to ↓ victimization, especially in females.

2. Increase resources and training for prevention of suicide

3. Partner with UN and WHO and other organizations to collaborate as a global problem.

4. Are there cultural differences in how Bullying is defined?

5. Recognize bullying as an adverse childhood experience (ACEs).
Questions?


References (Cont.)


