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

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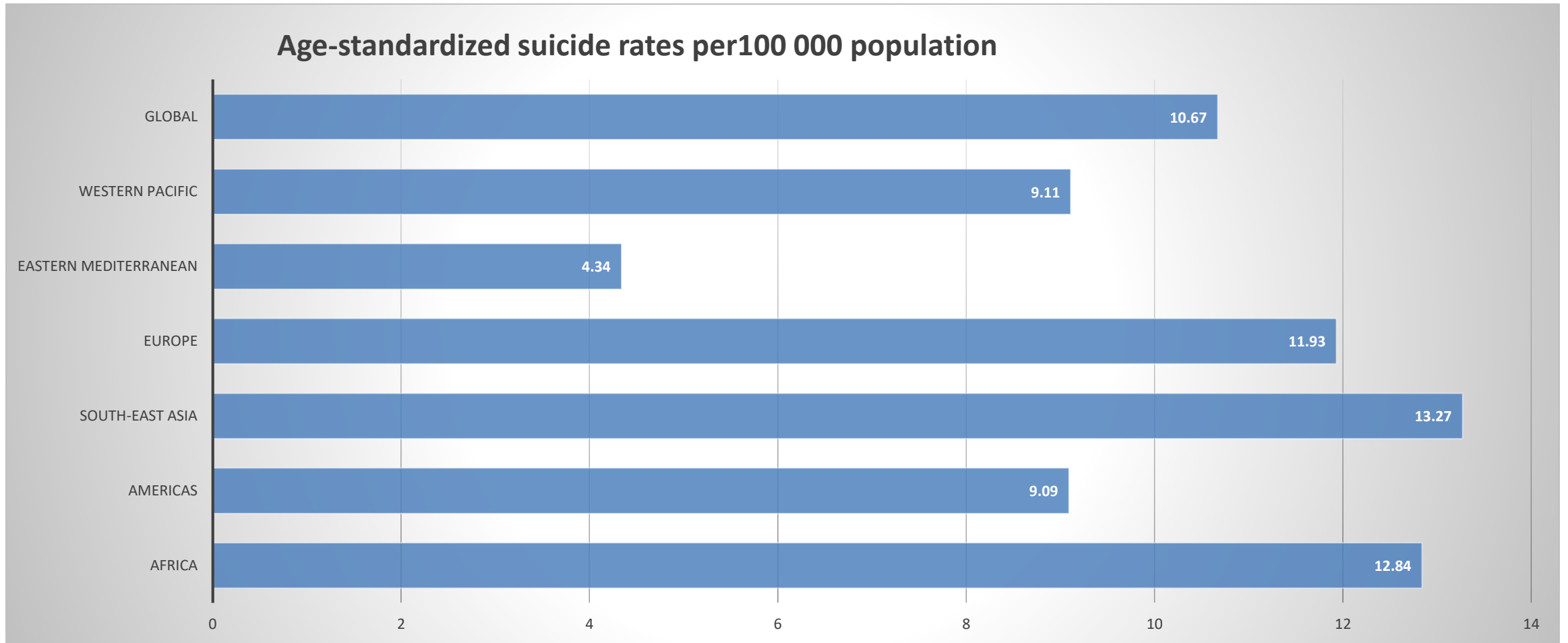
## Disclosure

- 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:

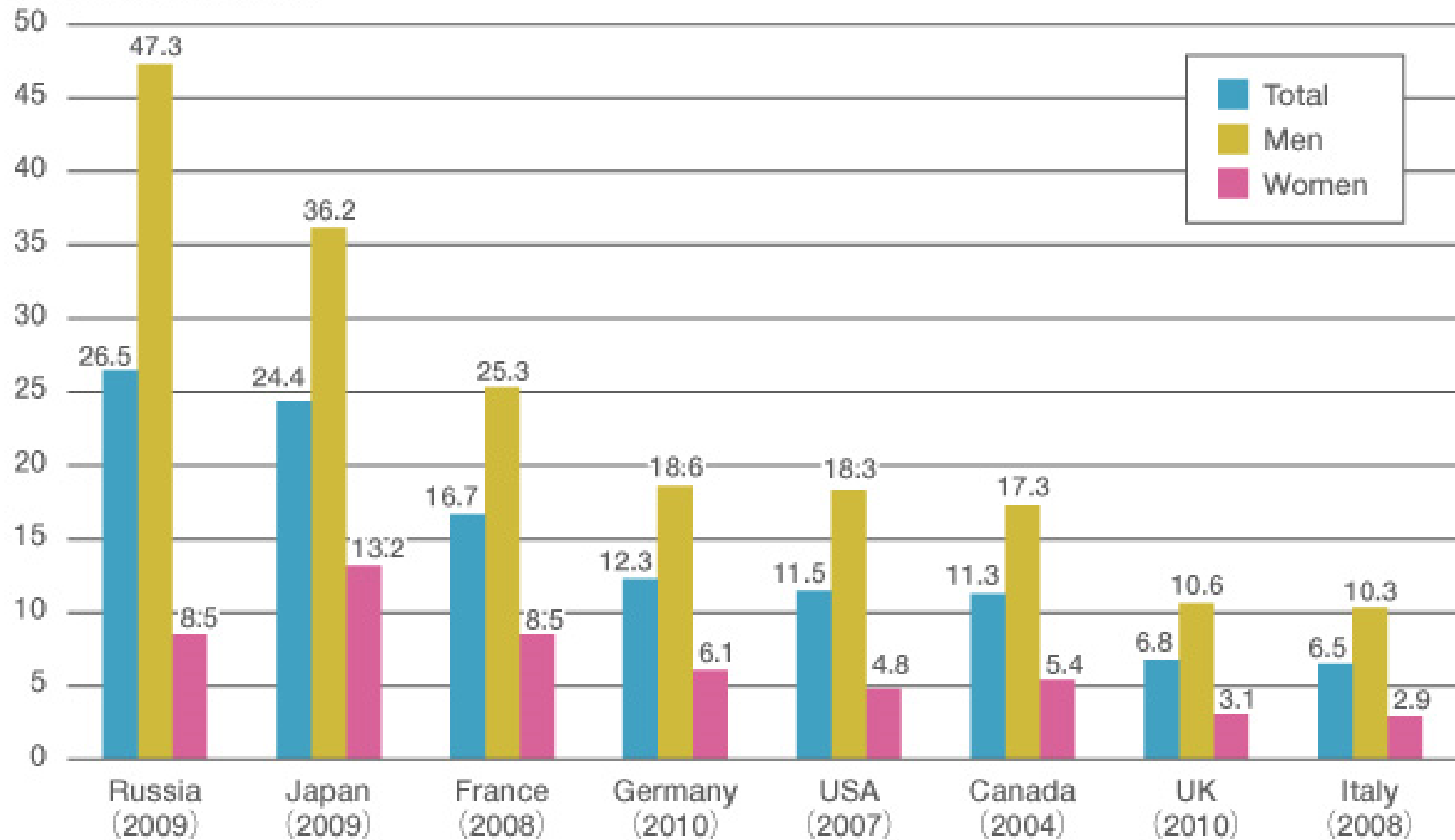
- describe the prevalence of school-related victimization among high school students in the United States.
- describe the prevalence of depressive symptoms and suicidality among high school students in the United States.
- explain the use and significance of the Center for Disease Control's Youth Risk 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



### Figure 3 Suicide Rates for G8 Countries

(suicides/100,000 pop.)



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<sup>nd</sup> leading cause of death among females 10 – 24 years
- 3<sup>rd</sup> leading cause among males aged 10–24 years

Reference:

McKinnon, B., Garipey, G., Sentenac, M. and Elgar, F.J. (2016). Adolescent suicidal behaviors in 32 low-and middle-income countries. *Bulletin of the World Health Organization*, 94, 340-350F. doi: <http://dx.doi.org/10.2471/BLT.15.163295>

# Associated Behavioral Health Effects of Bullying Victimization

- **Anxiety** (Kowalski & Limber, 2013)
- **Depressive symptoms** (Klomek, Kleinman, Altschuler, Marrocco, Amakawa, & Gould, 2013; Carlyle & Steinman, 2007; Hamm, 2015; Espelage & Holt, 2013; Leadbeater, Thompson & Sukhawathanakul, 2014; Cole, et al., 2014; Dejardis & Leadbeater, 2011; Bowes, Johnson, Wolke, & Lewis, 2016)
- **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:

## GOAL: Reduce school bullying among adolescents

Baseline in 2009:	<b>19.9%</b> of HS students reported they were bullied on school property in previous 12 months in 2009
Target for 2019:	<b>17.9 %</b>
Target-Setting Method:	<b>10 % improvement</b>
5 year TREND Results	<b>No improvement overall (Male ↓ 16%, Females ↑ 16%)</b>

\* *Office of Disease Prevention and Health Promotion (ODPHP)*

## Prevalence of US High School Student Victimization by Gender

Student Victimization	Pooled Data	% SE		OR (95%CI)	t
		Males (Ref)	Females		
Bullied at School	2009-15	<b>17.1</b> (0.40)	<b>22.9</b> (0.44)	1.46 (1.37-1.55)	<b>12.35 **</b>
Threatened/Injured with at weapon at (to/from) School	2009-15	<b>8.5</b> (0.25)	<b>5.3</b> (0.20)	0.61 (0.56-0.66)	<b>- 11.13 **</b>

*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

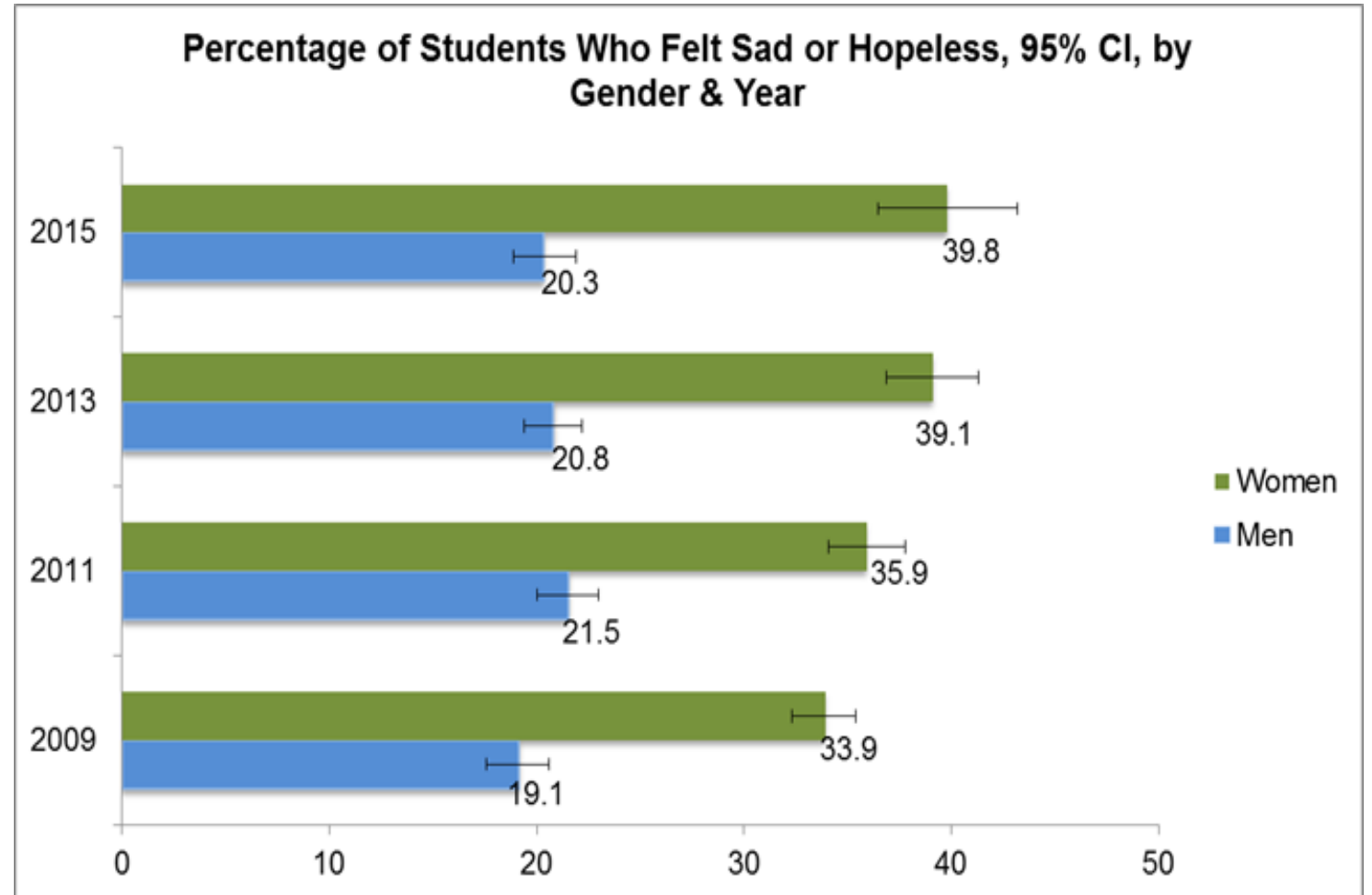
Baseline in 2009:	<b>19.9%</b> of HS students reported they were bullied on school property in previous 12 months in 2009
Target for 2019:	<b>17.9 %</b>
Trends	<b>No Improvement overall, ↑ in Females</b>

**\*\*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

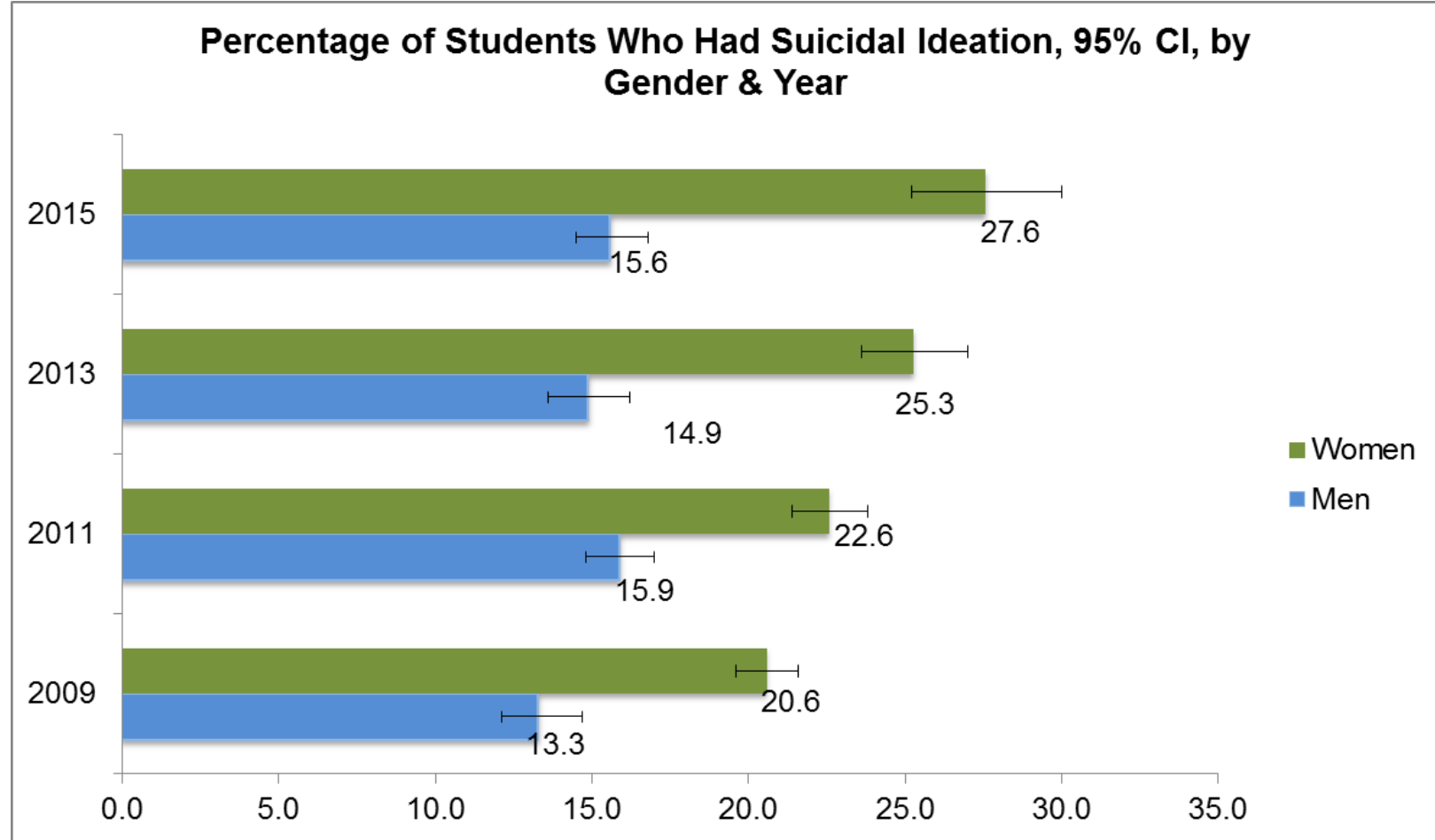
Pontes, Ayres & Pontes (2017)

YRBS 2009-2015



# US Trends in Suicidal Ideation

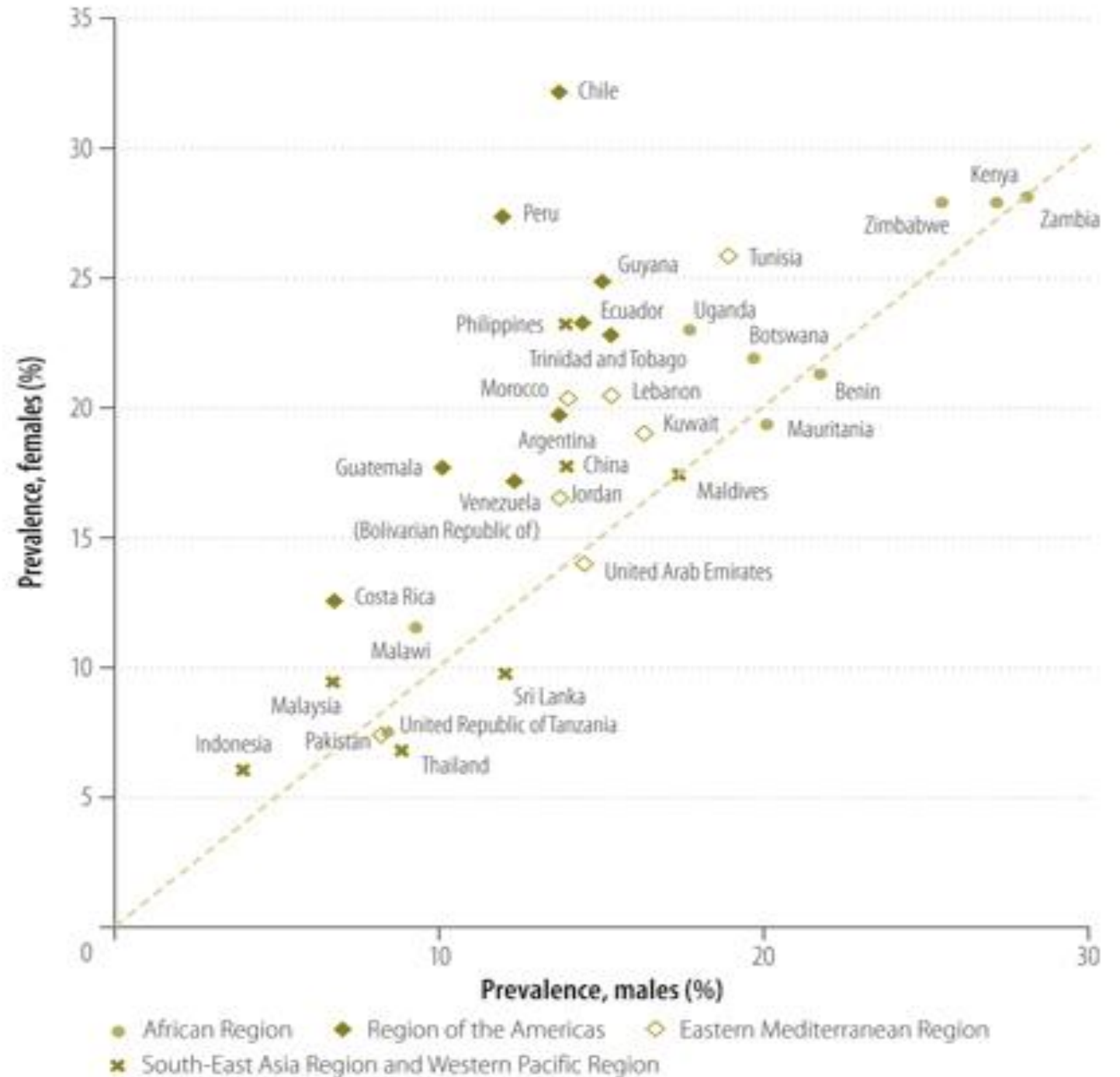
Pontes, Ayres & Pontes (2017) YRBS



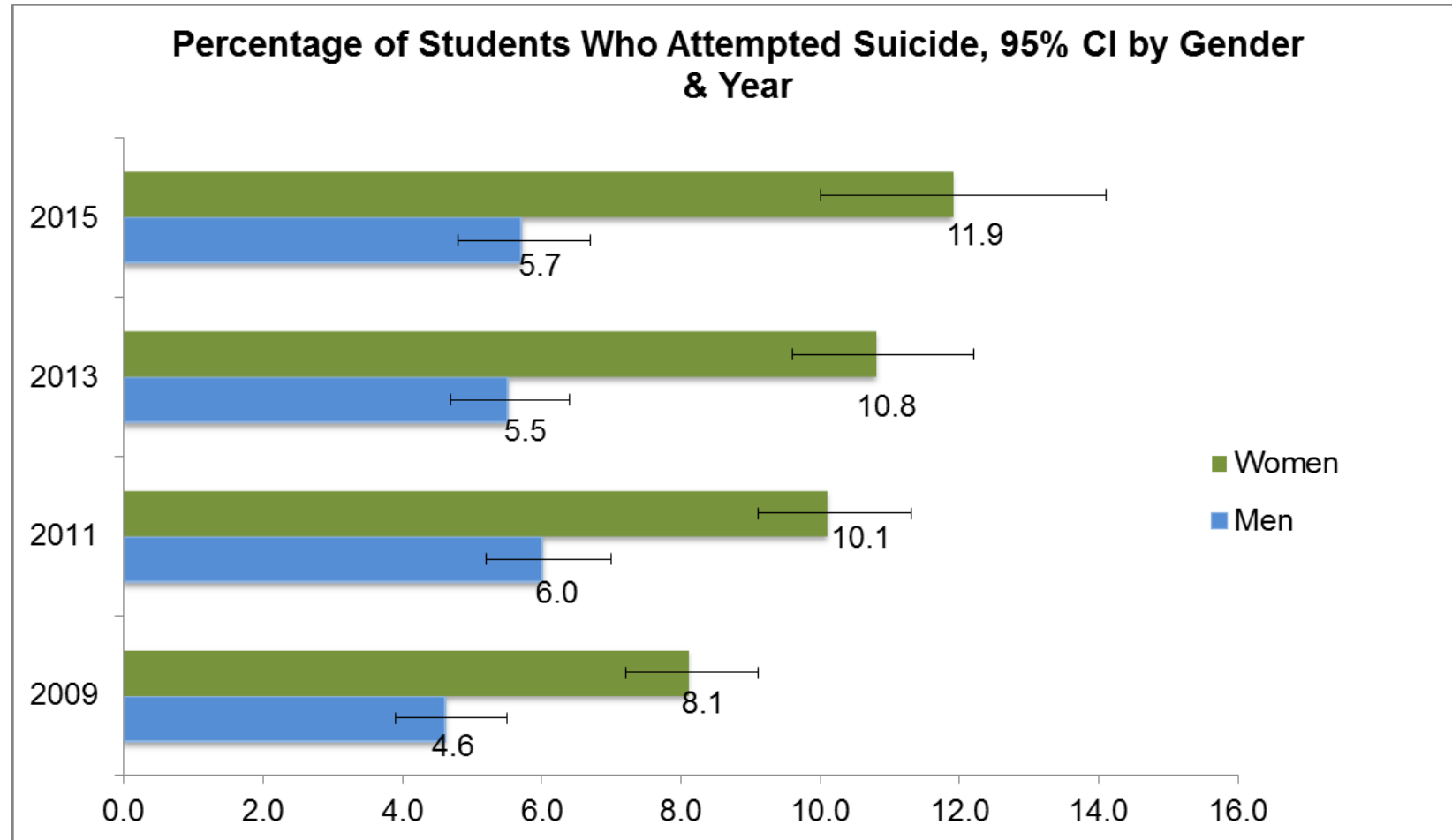


# Prevalence of suicide ideation in the past 12 months among male and female students in 32 Low and Middle-Income Countries, 2003–2012

*McKinnon, B., Geneviève Gariépy, Mariane Sentenac & Frank J Elgar (2016)*



# US Trends in Suicide Attempts



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.*

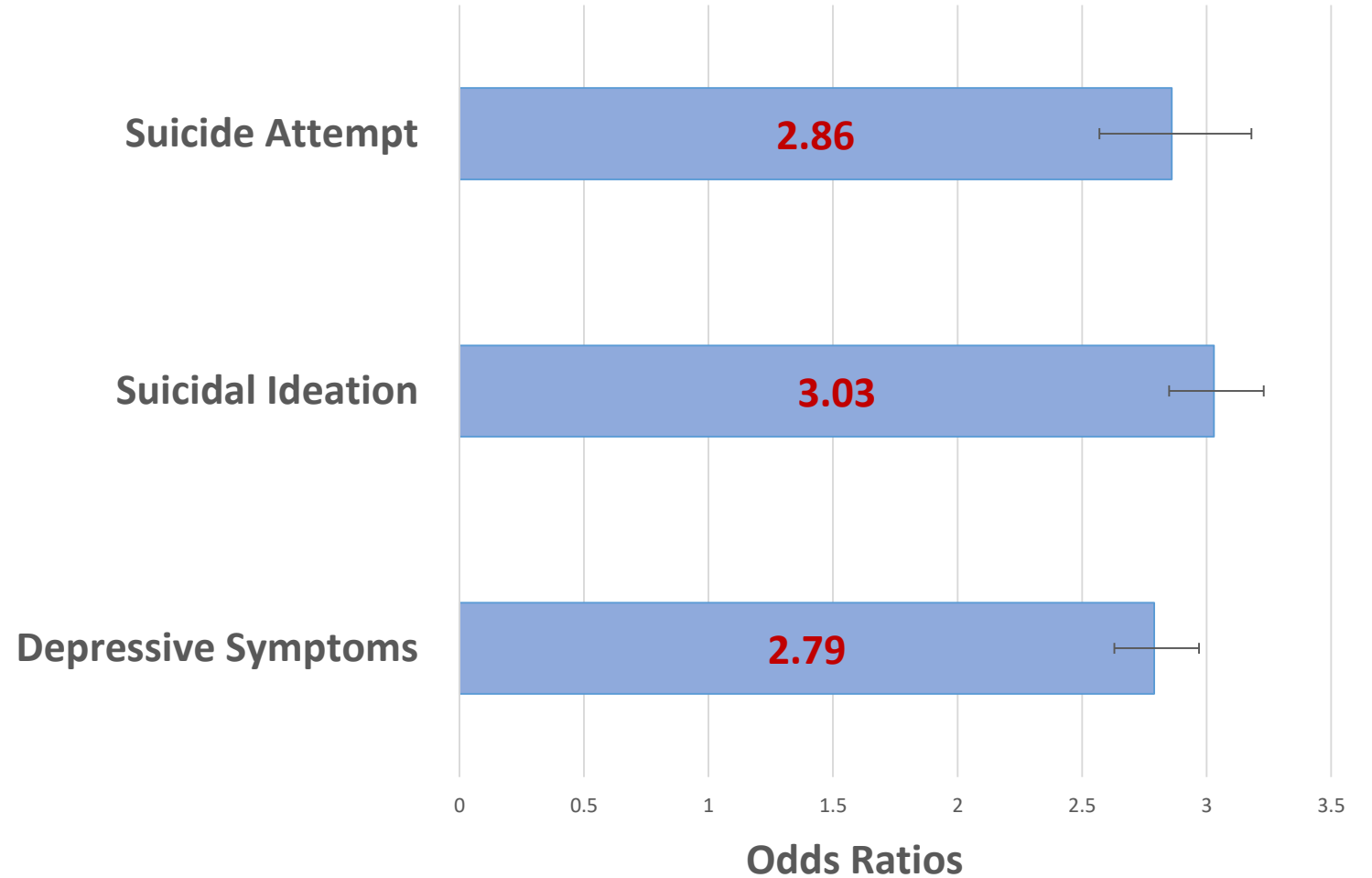
School Bullying is significantly related to...

**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)

### Relationship between School Bullying and Depressive Symptoms and Suicidality



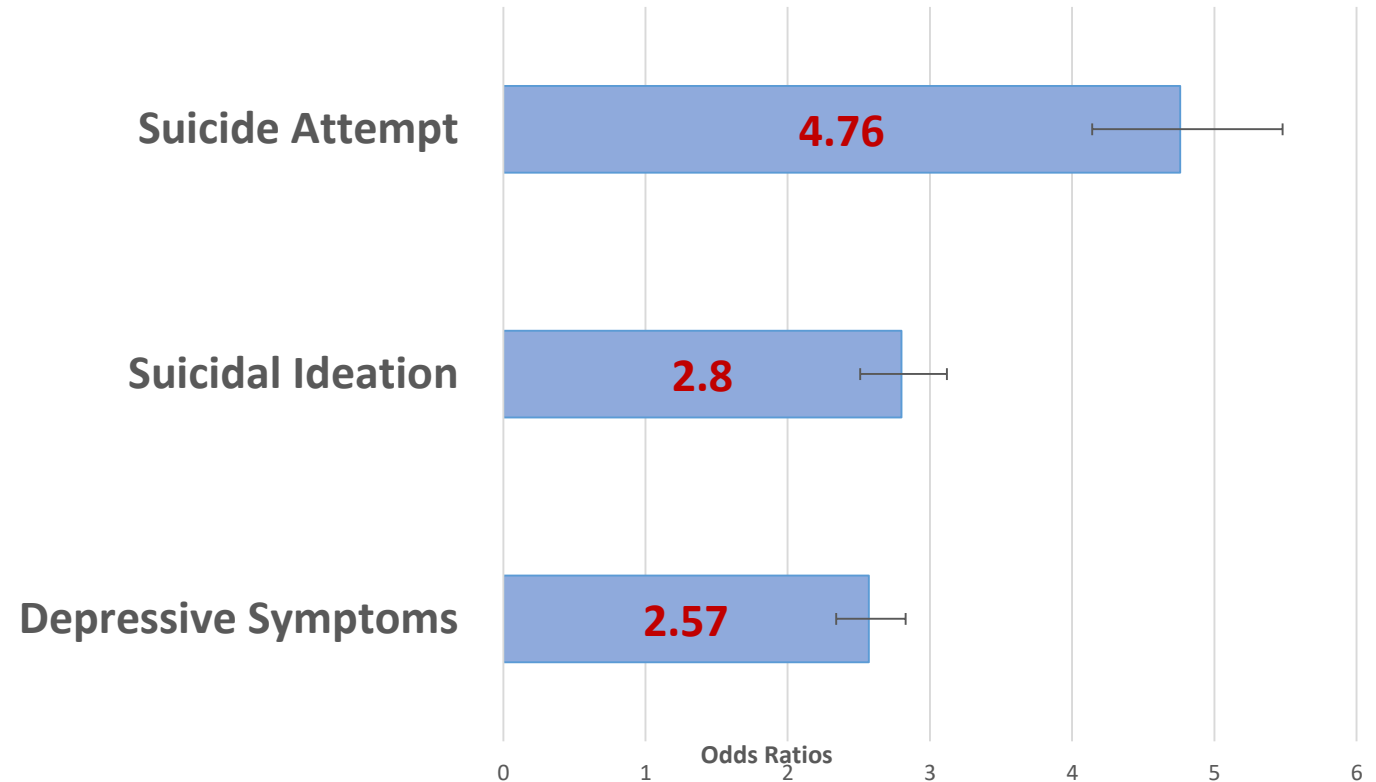
There were significant relationships between School Weapon-related victimization and...

**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).

### Relationship between Weapon-Related Victimization and Depressive Symptoms and Suicidality



## 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?



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