



CTSAB Meeting
November 13, 2014

SUICIDAL BEHAVIORS AND
ATTEMPTS REPORTED BY
ADOLESCENTS IN INDEPENDENT
SCHOOLS

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<http://www.cdc.gov/violenceprevention/pdf/self-directed-violence-a.pdf>
- CDC Strategic Direction for the Prevention of Suicidal Behavior 2014

Independent School Health Check (ISHC)

- 100+ question, on-line survey for independent school high school students
- Topics that include multiple questions: academics, school climate, parental engagement, social life, help seeking behaviors
- Designed 2006; piloted 2007; now used by 57 schools nationally
- National ISHC database > 30, 000 students

STUDY QUESTIONS

1. What is the prevalence of suicidal thoughts and behaviors?
2. What variables are associated with suicidal thoughts and behaviors?
3. What is the prevalence of suicidal thoughts and behaviors in ISHC vs the Youth Risk Behavior Survey (YRBS)?

METHODS

- ISHC survey administered to 8,407 students in 18 schools during the 2012-13 academic year.
- Data downloaded and coded to define multiple variable analyses.
- Data in SPSS V19

SAMPLE

POPULATION

- 18 Schools
- 9th-12th Grades
- 8407 Students

GEOGRAPHIC DISTRIBUTION

- 47% Northeast
- 19% Mid-Atlantic
- 19% Southeast
- 11% Midwest
- 4% West

ETHNICITY

- 63% White
- 17% Asian
- 7% Black
- 5% Hispanic

GENDER

- 49% Female
- 50% Male
- 0.7% Transgender

ANALYSES

- Statistical Analyses
 - Univariate analysis: prevalences
 - Bivariate analysis: t-test, chi square/odds ratio
 - Multivariate analysis: logistic regression
- Outcome (Dependent) Variables
 - Suicidal thoughts
 - Suicidal plans
 - Suicidal attempts
- Categories of Independent Variables
 - Mood
 - Social/Family Support
 - Risky Behaviors

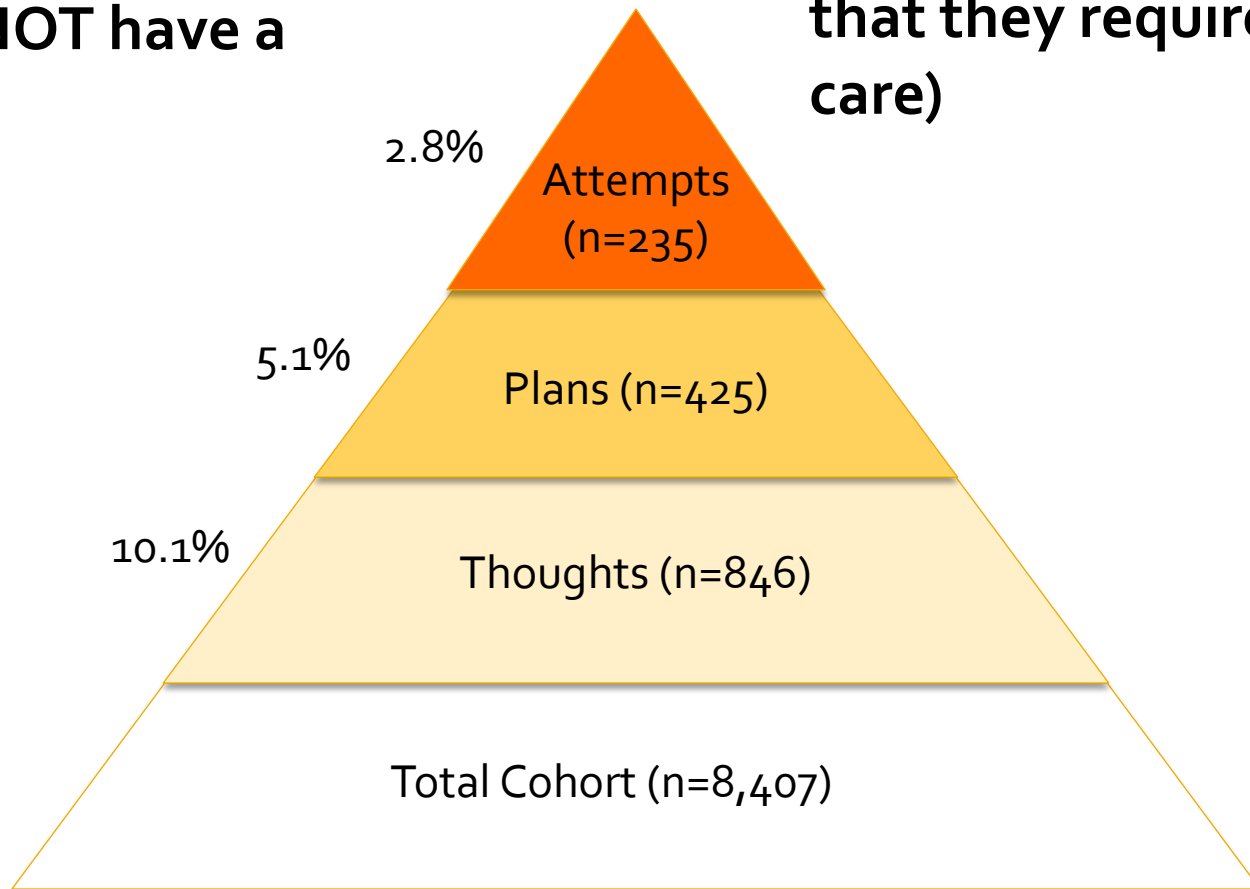
RESULTS

1. Prevalence of suicidal thoughts and behaviors.
2. Variables associated with suicidal thoughts and behaviors.
3. ISHC vs YRBS

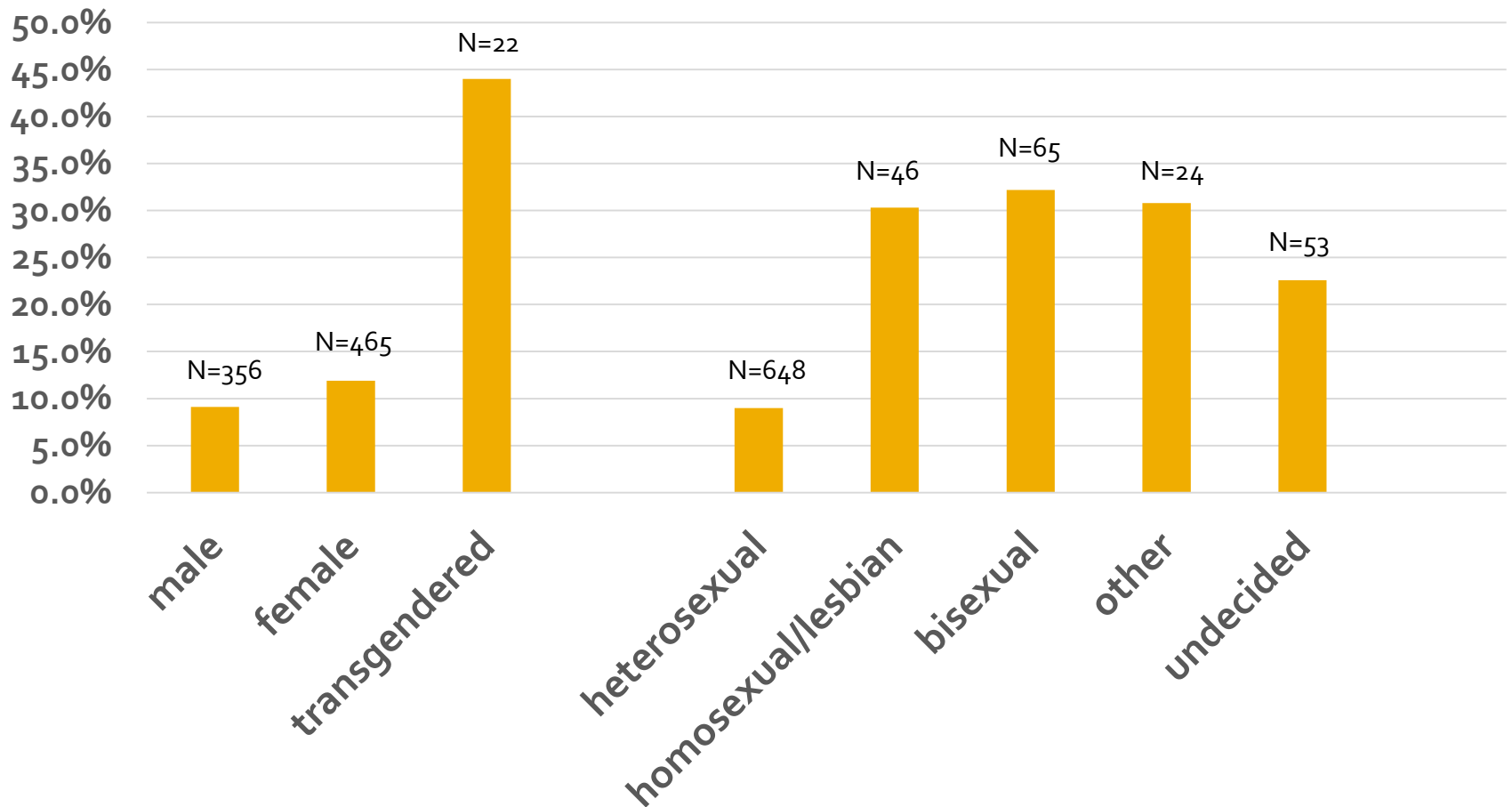
RESULTS: Prevalence

- 66 of 235 attempts, 27% did NOT have a plan

- 19.1% (45 of 235) reported that they required medical care)

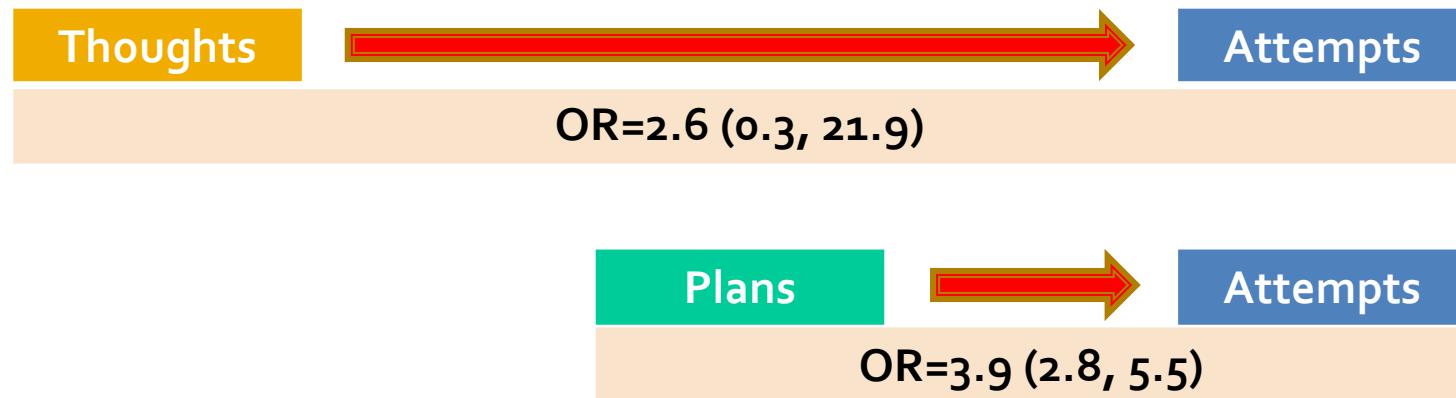


ISHC Suicidal Thoughts: Gender and Sexual Orientation



RESULTS: Variables Associated with Suicidal Thoughts and Behaviors

Risk of Suicide Attempts



RESULTS: Bivariate analysis

- **Three outcomes**
 - Thoughts
 - Plans
 - Attempts
- **Associations with outcomes of three categories of potential risk factors:**
 - Mood
 - Social/Family Support
 - Risky Behaviors

Associations (Odds Ratios): Mood, Suicidal Thoughts, Plans, Attempts

<i>Mood Variables</i>	<i>Among Ideators</i>		
	Thoughts	Plans	Attempts
Sad/hopeless	<i>11.7</i>	<i>2.5</i>	<i>2.4</i>
Depression Dx	<i>9.2</i>	<i>2.5</i>	<i>2.0</i>
Not like self	<i>6.3</i>	<i>2.2</i>	<i>1.4</i>
Discouraged	<i>5.5</i>	<i>2.2</i>	<i>1.5</i>
Lonely	<i>5.2</i>	<i>1.9</i>	<i>1.4</i>
Not liked by peers	<i>4.8</i>	<i>1.9</i>	<i>1.3</i>
Anxiety Dx	<i>4.6</i>	<i>2.1</i>	<i>2.1</i>
Sought professional help	<i>3.7</i>	<i>1.6</i>	<i>1.5</i>
Extrinsic motivation	<i>1.4</i>	1.2	1.2

* Statistically significant ($\alpha=.05$) associations in *red, italics*; marginally non-sign. *green, Italics*

Associations (Odds Ratios): Social/Family Supports, Suicidal Thoughts, Plans, Attempts Support Variables

<i>Social/Family Support Variables</i>	Thoughts	<i>Among Ideators</i>	
		Plans	Attempts
Feel not belong at school	3.8	1.4	1.7
Feel unsafe at school	3.8	1.6	1.8
Been bullied	3.4	1.4	1.3
Parents not interest in life	3.3	2.1	2.0
Would not go to adult with problem ¹	3.1	1.7	1.8
Parents not support activities	3.0	1.6	2.4
Not happy with kind of friends	2.6	1.2	1.2
Not have adult to talk to	2.3	1.4	1.3
Bullied/teased ≥ 3 times	2.3	1.2	1.8
Think school too challenging	2.0	1.2	1.5
Think school rules unfair	1.7	1.2	1.6
Parents not call ahead to party	1.1	1.1	1.0

*Statistically significant ($\alpha=.05$) associations in *red, italics*; marginally non-sign. *green, Italics*

¹ Brent, DA, et al, Am. Academy of C&A Psychiatry, 2014

Associations (Odds Ratios*): Risky Behaviors, Suicidal Thoughts, Plans, Attempts

Risky Behaviors

<i>Risky Behavior Variables</i>	Thoughts	<i>Among Ideators</i>	
		Plans	Attempts
Self-harm ≥ 3 times ¹	20.8	3.5	3.4
Self-harm any	13.4	2.8	2.7
Transgender ²	6.7	5.2	5.8
Sexual minority	4.0	1.8	1.2
Same sex sexual partner	3.6	1.5	1.4
Purchase essay on internet	3.5	2.1	3.6
Cigarette smoking	3.4	1.5	2.2
Sexual content on email	3.1	1.2	1.6
Asked for meeting on email	3.0	1.6	3.1
Rude posting on email	2.7	1.4	1.7
Physical fight at school	2.6	1.7	2.4

*Statistically significant ($\alpha=.05$) associations in *red, italics*; marginally non-sign. *green, Italics*

¹ Taliaferro et al, Suicide Life Threat Behav. 2014; ² Stack et al, Suicide Life Threat Behav. 2014

Associations (Odds Ratios*): Risky Behaviors, Suicidal Thoughts, Plans, Attempts

Risky Behaviors – *continued*

<i>Risky Behavior Variables</i>	Thoughts	<i>Among Ideators</i>	
		Plans	Attempts
Drinking ≥ 6 times	<i>2.5</i>	<i>1.8</i>	<i>7.1</i>
DUI	<i>2.2</i>	0.9	<i>2.4</i>
Marijuana use	<i>2.2</i>	1.2	<i>1.9</i>
1 st intercourse @ ≤ 14 years old	<i>2.2</i>	<i>2.1</i>	<i>2.1</i>
Binge drinking ≥ 3 times ¹	<i>2.1</i>	<i>1.5</i>	<i>4.0</i>
Gun access	<i>1.9</i>	1.2	1.2
Cheat on tests/quizzes	<i>1.8</i>	1.0	<i>1.4</i>
Sexual intercourse	<i>1.8</i>	<i>1.5</i>	<i>1.9</i>
Drinking any	<i>1.7</i>	1.1	<i>2.0</i>
Binge drinking	<i>1.7</i>	1.2	<i>2.5</i>
Attend unchaperoned parties	<i>1.6</i>	0.9	<i>2.0</i>
Extreme academic pressure	<i>1.3</i>	0.9	1.1

*Statistically significant ($\alpha=.05$) associations in *red, italics*; marginally non-sign. *green, Italics*

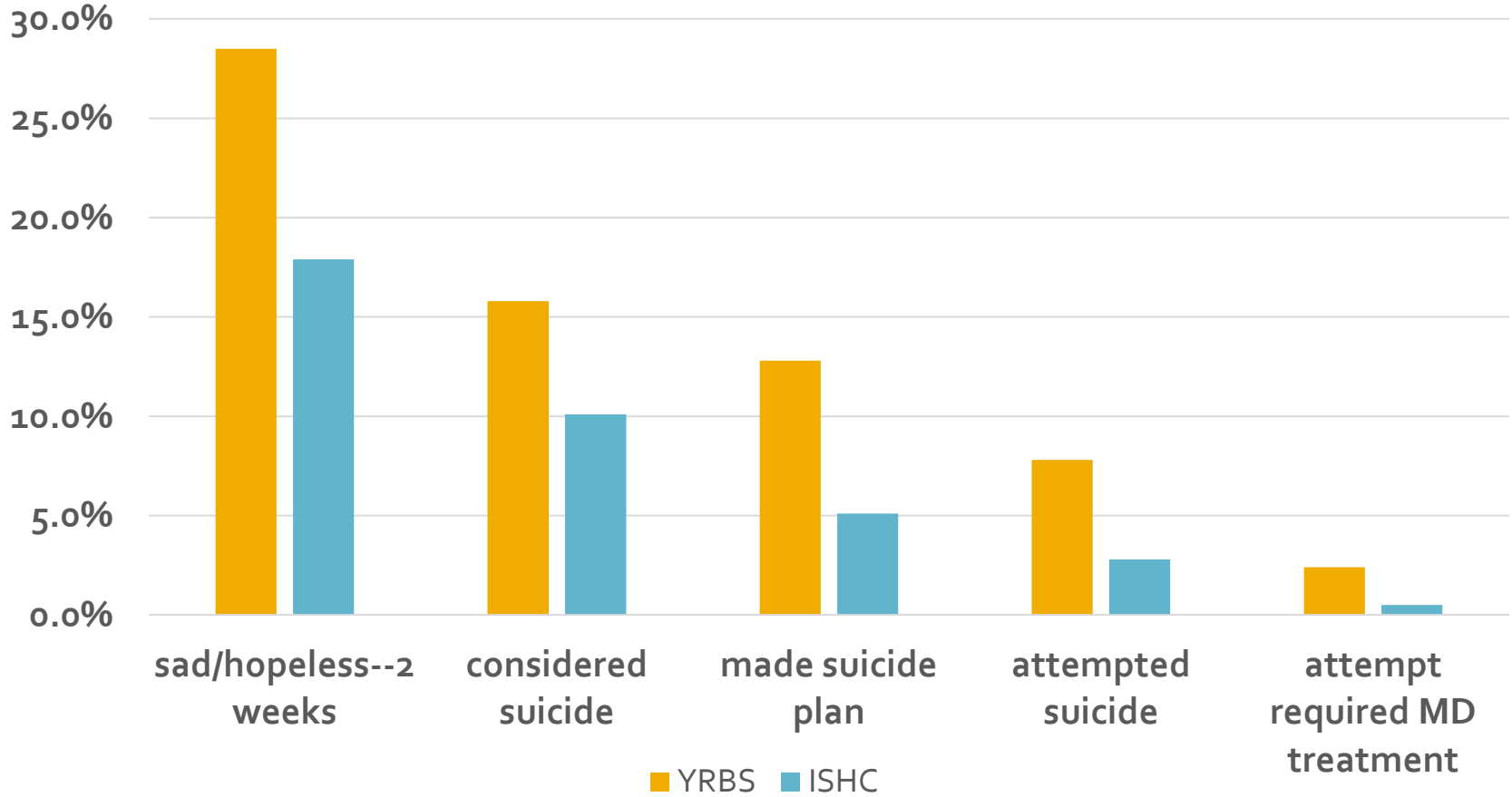
¹ McNanama, et al. Suicide Life Threat Behav. 2014

RESULTS: ISHC vs YRBS

ISHC vs YRBS

- **YRBS (federal Youth Risk Behavior Survey)**
 - public schools
 - 30+ questions on the ISHC are identical to the YRBS, including the questions on suicide.
 - ISHC substantially expands upon the YRBS data elements and includes:
 - Sexual orientation
 - Computer use behaviors
 - Attitudes about school
 - Feeling state
 - Adult engagement
 - Social supports
 - Daily activities
 - Sleep
 - Academic motivation
 - Diagnosis/medications
 - Academic honesty

ISHC vs YRBS



ISHC vs YRBS

- Similar risk factors but higher odds ratios in the ISHC population
 - Mood:
 - Sad and hopeless
 - Risky Behaviors:
 - Episodic heavy drinking

DISCUSSION

Increased Risk for Attempts

	<u>Odds Ratio (OR)*</u>
■ Mood:	
■ Feeling sad and hopeless	OR= 2.37
■ Dx of anxiety	OR= 2.09
■ Dx of depression	OR= 2.01
■ Social/Family supports:	
■ Parents do not support your activities	OR= 2.37
■ Parents are not interested in your life	OR= 2.01
■ Been bullied multiple times within 30 days	OR= 1.80
■ Would not go to an adult if had a problem	OR= 1.76

*Statistically significant, $\alpha=.05$

Increased Risk of Attempts

Risky Behaviors:	<u>Odds Ratio (OR)*</u>
■ Drinking more than 3 days within 30 days	OR = 7.05
■ Transgendered	OR = 5.82
■ Binge drinking	OR = 4.00
■ Purchasing an essay on the internet	OR = 3.61
■ Self harm 3+/6 mos.	OR = 3.41
■ Cigarette smoking	OR = 2.17
■ Sexual and other risky topics shared the internet	OR = 1.61











*Statistically significant, $\alpha=.05$


Decreased Risk for Attempts

	<u>Odds Ratio (OR)*</u>
■ Mood:	
■ Not lonely	OR = 0.72
■ Like self	OR = 0.76
■ Intrinsic motivation	OR = 0.84
■ Experience high academic pressure/expectations◇	OR = 0.89
■ Social/Family Supports:	
■ Parents support activities	OR = 0.44
■ Parents interested in life	OR = 0.50
■ Would go to adult with problem	OR = 0.57
■ Strong school connection	OR = 0.61
■ Have an adult to talk to ◇	OR = 0.79
■ Happy with friends	OR = 0.85
■ High parental engagement	OR = 0.87

*Statistically significant, $\alpha=.05$, except for ◇

Strongest Associations: Between Suicidal Thoughts and Behaviors and Categories of Risk Variables

Categories of Potential Risk Variables	Suicidal Thoughts or Behaviors		
	Thoughts	Plans	Attempts
<i>Mood</i>			
Sad & hopeless			
<i>Supports</i>			
Not belong at school			
Feel unsafe at school			
Been bullied			
Low parental engagement			
<i>Risky Behaviors</i>			
≥1 Self harm			
Transgender			
Heavy drinking			
Purchase essay on internet			

 = strongly associated

ISHC vs YRBS

- Lower prevalence of suicidal thoughts and behaviors in ISHC population
- Same risk factors
- Generally higher Odds Ratios found in ISHC population

WHAT EXPLAINS THIS DIFFERENCE?

- WHAT IS IT ABOUT INDEPENDENT SCHOOLS THAT ENCOURAGES THESE RESPONSES?
 - Selection process
 - High academic abilities (IQ), college bound
 - Low student/adult ratio, personal attention from adults
 - Parents paying tuition/sacrifice/often upper middle class
 - High parental engagement
 - Access to financial resources
 - Schools offer safe, civil environments
 - This study does not need to factor in the effects of poverty, dangerous environments and limited intelligence.
 - Other thoughts????

LIMITATIONS

- Self reported data
 - Recall
 - Accuracy
 - Stigma...under reporting
- No history on subjects
- ISHC data for plans and attempts are from the subset of the population that reported suicidal thoughts
- Heterogeneity of population across regions and schools
- Quality of reporting is affected by discrepancies in terminology (CDC)

Future Research

This study is a first step in identifying a variety of factors that effect suicidal thoughts and behaviors in private school students. We need to further explore:

- Which factors serve as risk and protective factors for this population?
- Are plans the most reliable pathway to assessing the risk of a suicide attempt?
- What role do multiple episodes of self injurious behaviors have in assessing suicide risk?
- What factors contribute to the strong association between transgender and suicidal behaviors?
- How do we understand the difference in prevalence in suicidal thoughts and behaviors between the ISHC and YRBS populations?

Recommendations

- Suggested strategies to include in Suicide Prevention Programs:
 - Monitoring of students' ability to maintain their routine activities
 - Encouragement of parental engagement
 - Encouragement of adult-student relationships in schools
 - Education on social norm data regarding alcohol use and binge drinking.

Resiliency

- From an unpublished study (Goethe, Mirabile) conducted at the Institute of Living on adolescent inpatients who had attempted suicide...follow up done. Those who did not have a repeated attempt.
- A solitary, self soothing activity
- A safe place to go to
- An adult to go to for help

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- CDC data: Strategic Direction for the Prevention of Suicidal Behavior 2014
 - Suicide is the third leading cause of death in the 10-24 age cohort.
 - Social connection between adolescent and parents/family decreases suicidal behavior while disruption of connection (divorce, death, etc) increases suicidal behavior.
 - According to the CDC, 50% of those engaged in suicidal behavior never seek help.

