

Analysis of Risk Factors for Bullying: The Iowa Youth Survey

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What is Bullying?

Bullying is a form of aggressive behavior that is intentional, hurtful, threatening, and/or persistent. A bully usually uses superior strength or influence to intimidate, typically to force a person to do what the bully wants.

- According to the American Medical Association, 3.7 million youths engage in bullying, and more than 3.2 million are victims of “moderate” or “serious” bullying each year.
- 56% of students have witnessed some type of bullying at school.
- Over two-thirds of students believe that schools respond poorly to bullying.



Bullying in the News

- Stories of students being bullied to the point of committing suicide have become all too common in the news
- Modern technology has enabled bullies to record videos and upload them onto internet sites such as YouTube and Facebook
- Karen Klein, a bus monitor in New York, was severely bullied by students; the incident was recorded and the video got instant attention from the entire country



Reducing Bullying in Iowa Schools

- The Iowa Department of Education passed an anti-bullying law in 2005
- This effort is a result of increased awareness of bullying
- The law was adopted by all Iowa schools by September, 2007
- The instrument to measure the policy effect is the Iowa Youth Survey (IYS)



Iowa Anti-bullying Code 280.28

Required Elements

- ◆ Policy adopted on or before September 1, 2007
- ◆ Policy declares bullying a violation of state and school policy
- ◆ Policy states definition of bullying according to code
- ◆ Policy indicates consequences and remedial actions for violators
- ◆ Policy indicates procedures for reporting bullying incident and identifies school official responsible for handling complaints
- ◆ Policy indicates procedures for investigating complaints and identifies the school district official in charge of investigations
- ◆ Policy identifies official responsible for policy implementation
- ◆ Policy indicates of how policy is to be publicized
- ◆ District must maintain system to collect bullying incidence data

Recommended Elements. To the extent funds are available, schools are encouraged to establish programs designed to eliminate bullying and harassment.

- ◆ Training school employees and volunteers with student contact on anti-bullying policies
- ◆ Develop a process to provide school employees, volunteers, and students with skills and knowledge to help reduce incidents of bullying.

Outline

- Review the content of the data set
- Address the goals of this project
- Describe the approach taken to analyze the data set
- Discuss the results from the analysis
- Summarize the findings with conclusions



Physical
Bully

Cyber
Bully

Verbal
Bully

Psychological Bullies

Data Set

- The data set is a compilation of the Iowa Youth Survey from 2005, 2008, & 2010
- The survey covers 412 school districts in the state of Iowa
- Approximately 275,000 surveys were completed (6th, 8th, & 11th graders)
- The overall data set contains 338 variables
- For this study, 10 variables were considered as either potential risk factors or potential confounders



Variables

- Outcome Variables (Binary)
 - PSYCH: Indicates whether a student was bullied by being excluded or being the victim of rumors
 - VERB: Indicates whether a student was bullied by being called names or teased
 - PHYS: Indicates whether a student was bullied by being physically hurt
 - CYBER: Indicates whether a student was bullied by receiving a hurtful message through text messaging, email, or social media

Variables

- Potential Risk Factors (Ordinal)
 - PRIDE: The student's degree of self-pride (None, Some, More, Most)
 - EXCERCISE: The student's frequency of exercise per week (0 Days, 1-4 Days, 5-6 Days, 7 Days)
 - TOTAL_EC: The student's level of participation in extracurricular activities (None, Average, High, Very High)
 - MORAL_DRUGS: The student's response to the statement "It is against my values to use alcohol and drugs as a teenager" (Strongly Agree, Agree, Disagree, Strongly Disagree)
 - MORAL_SEX: The student's response to the statement "It is against my values to have sex as a teenager" (Strongly Agree, Agree, Disagree, Strongly Disagree)

Variables

- Potential Confounders (Nominal and Ordinal)
 - SURVEY_YEAR: 2005, 2008, 2010
 - GRADE: 6th, 8th, 11th
 - GENDER: Male, Female
 - ETHNICITY: White, African American, American Indian or Alaska Native, Asian/Pacific Islander, Hispanic or Latino, Other
 - LIVING_SITUATION: With parents, With grandparents or other relatives, With foster parents, In a shelter care, In a residential group or home, Independent living, Other

Goals/Expectations

- **Primary Goal**

Investigate and characterize the associations between the bullying variables and each of the potential risk factors

- **Secondary Goal**

Explore the importance of the other covariates of interest and assess their role as potential confounders

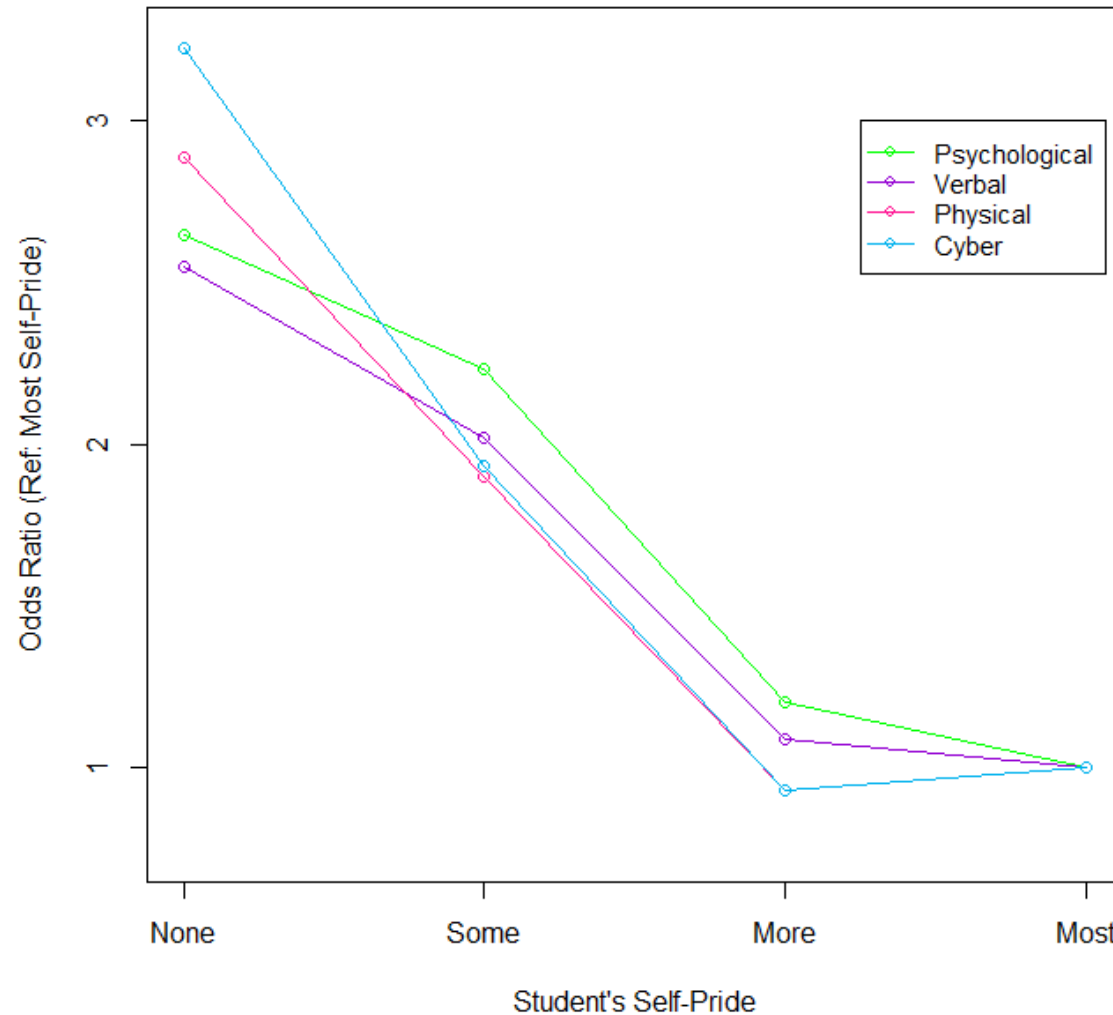
- **Expectations**

Prior to analyzing the data, we anticipated finding monotonic (i.e. dose-response) relationships between the levels of our potential risk factors and the likelihood of bullying

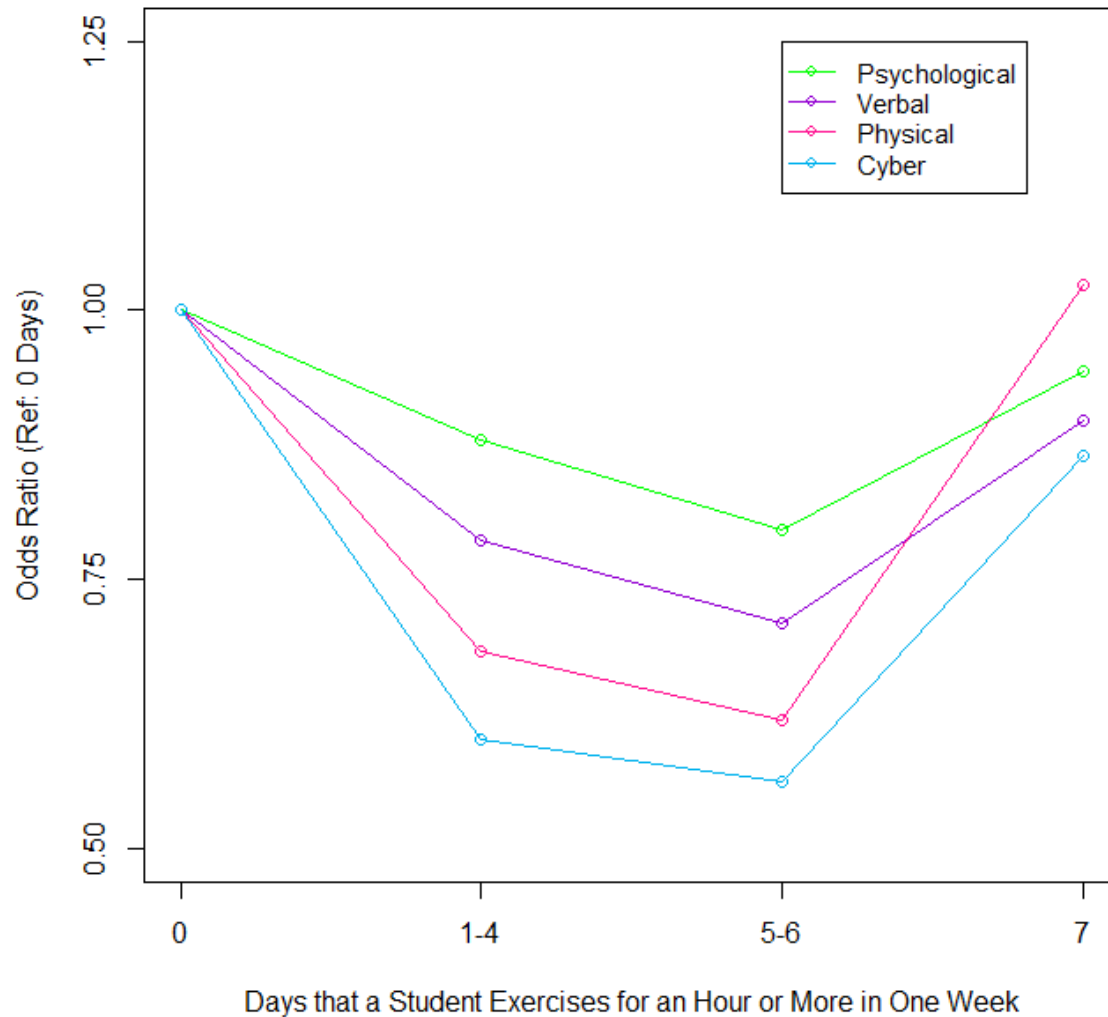
Analytical Approach

- Data was analyzed using logistic regression models (PROC LOGISTIC in SAS)
 - Univariable models were fit to characterize the nature of the relationships between our potential risk factors and the log odds of bullying
 - Multivariable models were fit to investigate the role of the potential confounders
- The Bayesian Information Criterion (BIC) was used to determine the most efficient way to collapse levels of ordinal explanatory variables
- Results were summarized using odds ratios
 - Graphical displays were constructed with R

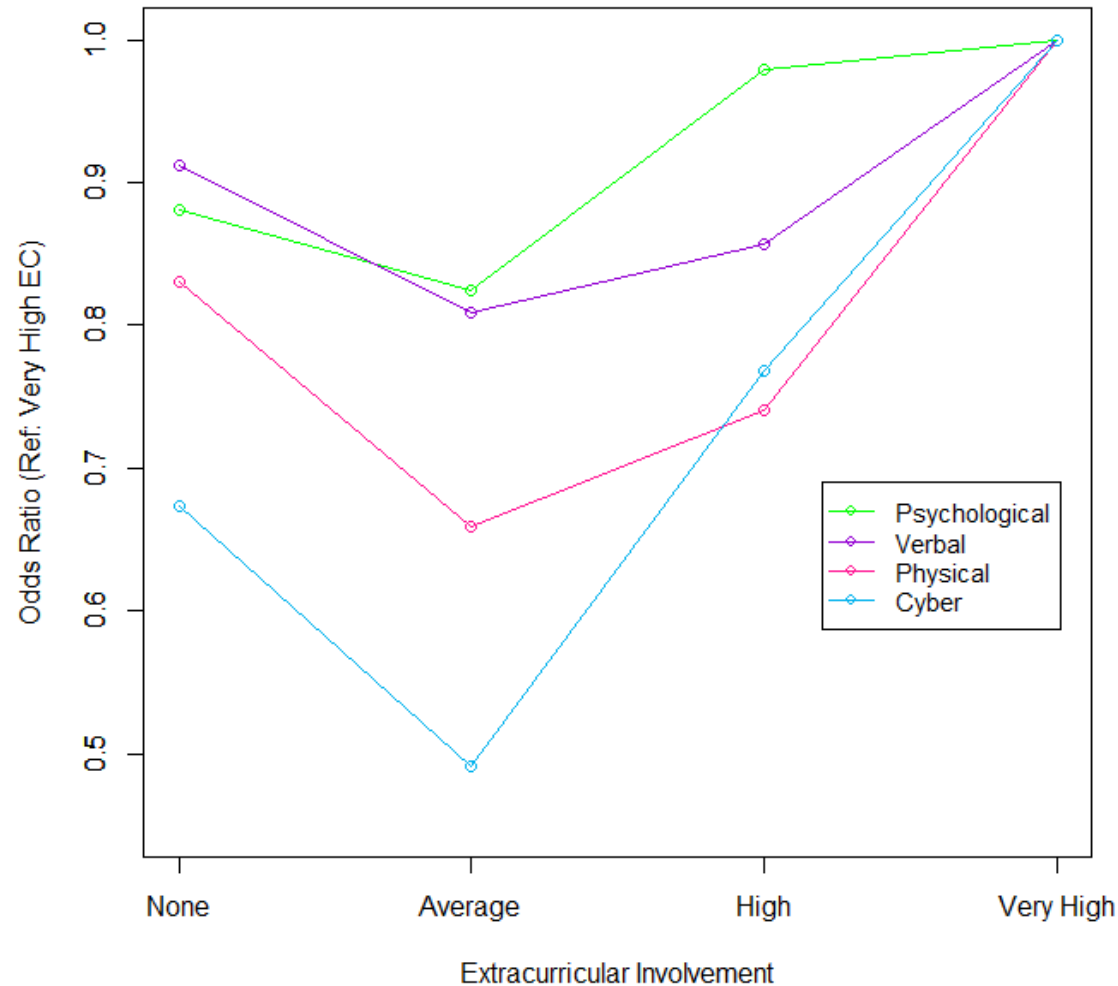
Odds Ratios of Bullying vs. Self-Pride



Odds Ratios of Bullying vs. Exercise

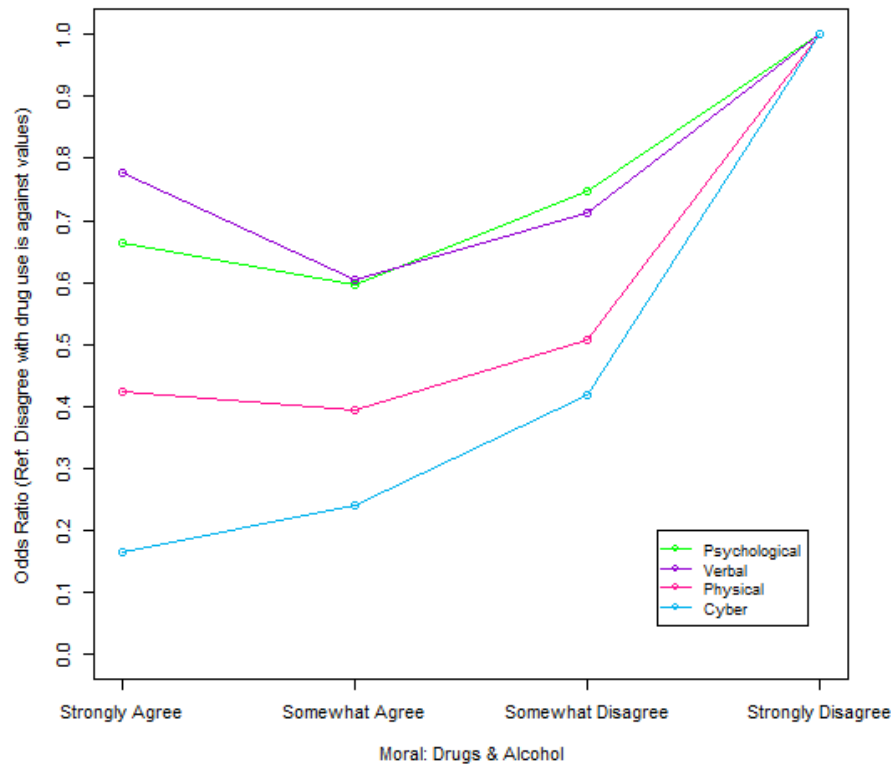


Odds Ratios of Bullying vs. Extracurricular Involvement

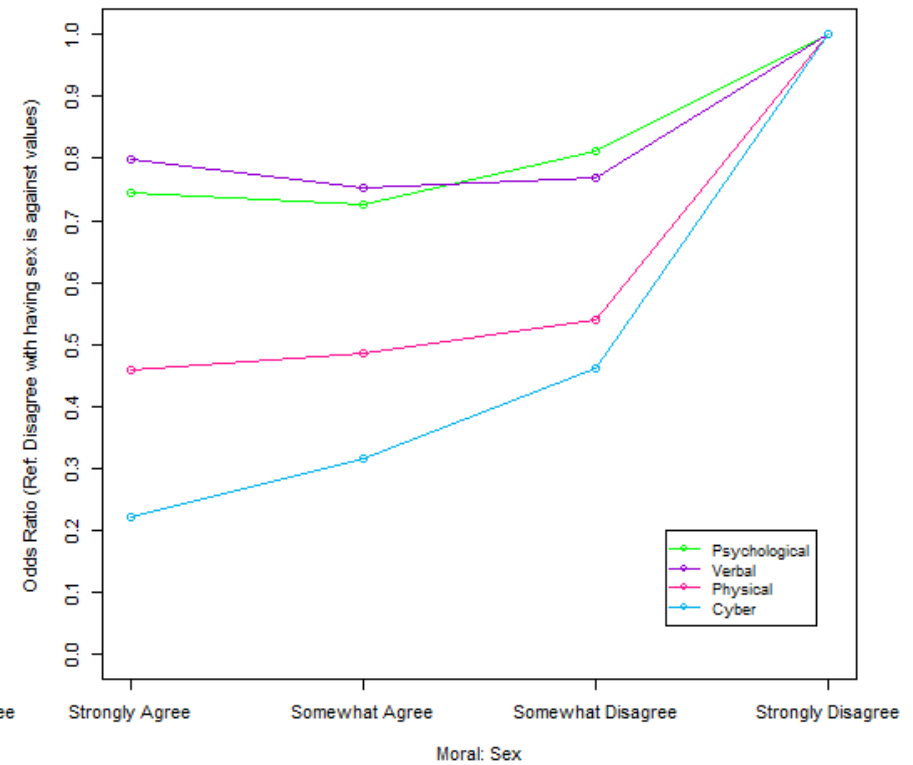


Odds Ratios of Bullying vs. Morals

Against my values to use alcohol and drugs as a teenager



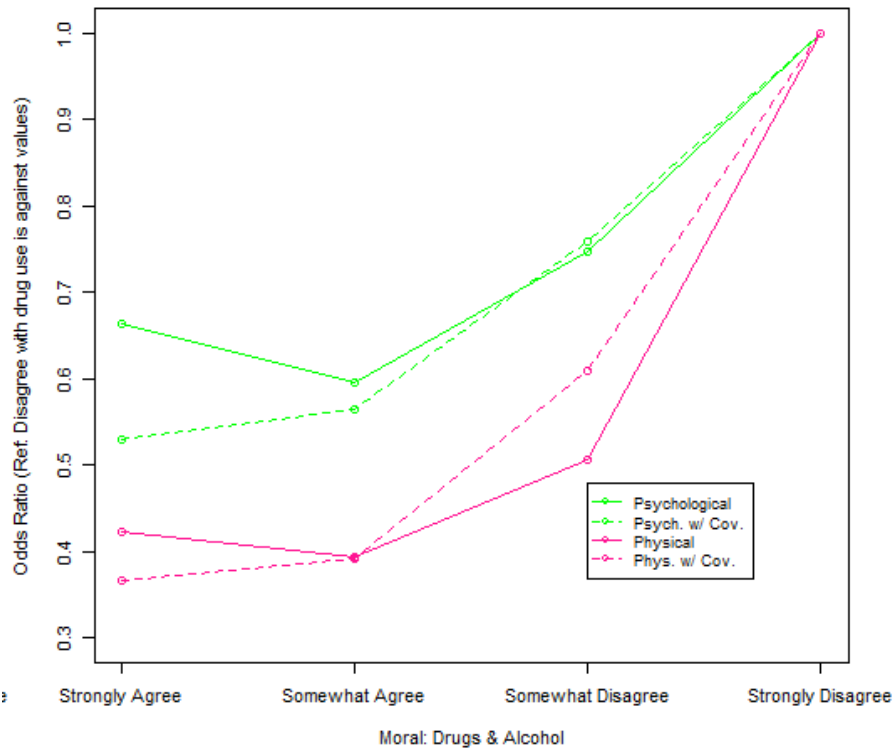
Against my values to have sex as a teenager



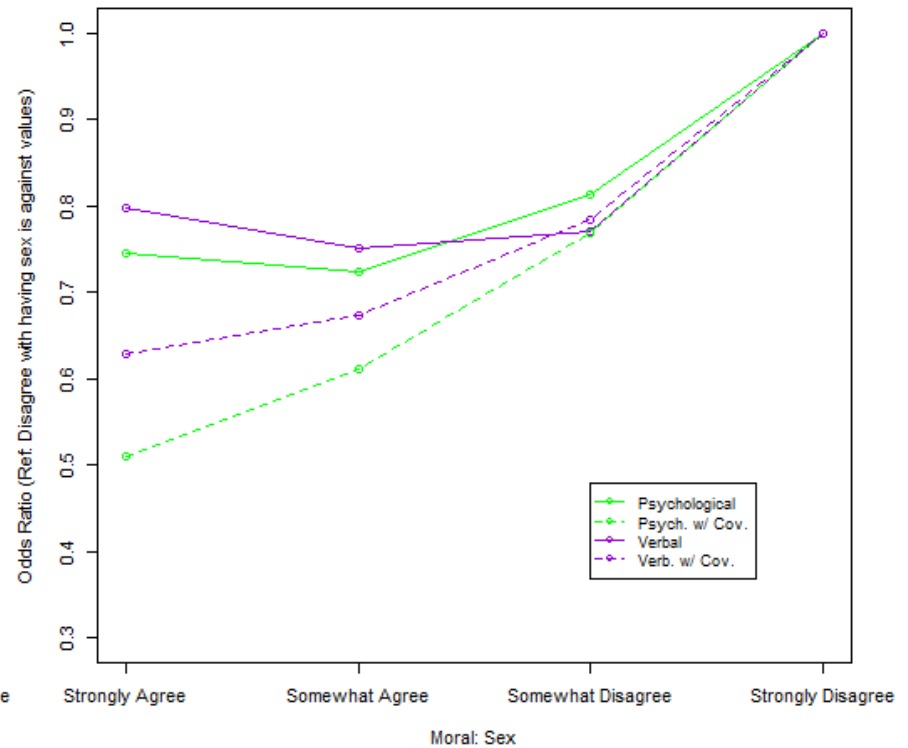
Relevant Confounders:

SURVEY_YEAR, GRADE, GENDER, ETHNICITY, LIVING_SITUATION

Against my values to use alcohol and drugs as a teenager



Against my values to have sex as a teenager



Summary

- Overall, deviating from normalcy in either direction is associated with being at-risk for bullying
- Aside from the student's self-pride variable and three of the moral outcome variables, no other candidate risk factors displayed the monotonic relationship with the odds of bullying that we initially expected
- The potential confounders did not change the nature of the association between the risk factors and the odds of bullying, apart from some of the moral values variables

Conclusions

- It is important to implement guidelines aimed towards students at both extremes of the spectrum and towards students with low self-esteem
- Future work could investigate why our potential confounding variables changed the association between the moral values variables and the odds of being bullied
- Additionally, further research could examine the impact of clustering effects based on school district
- Sexual orientation may be an important risk factor for bullying, but was not included in this study since it is not currently an IYS question

THANK YOU!



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