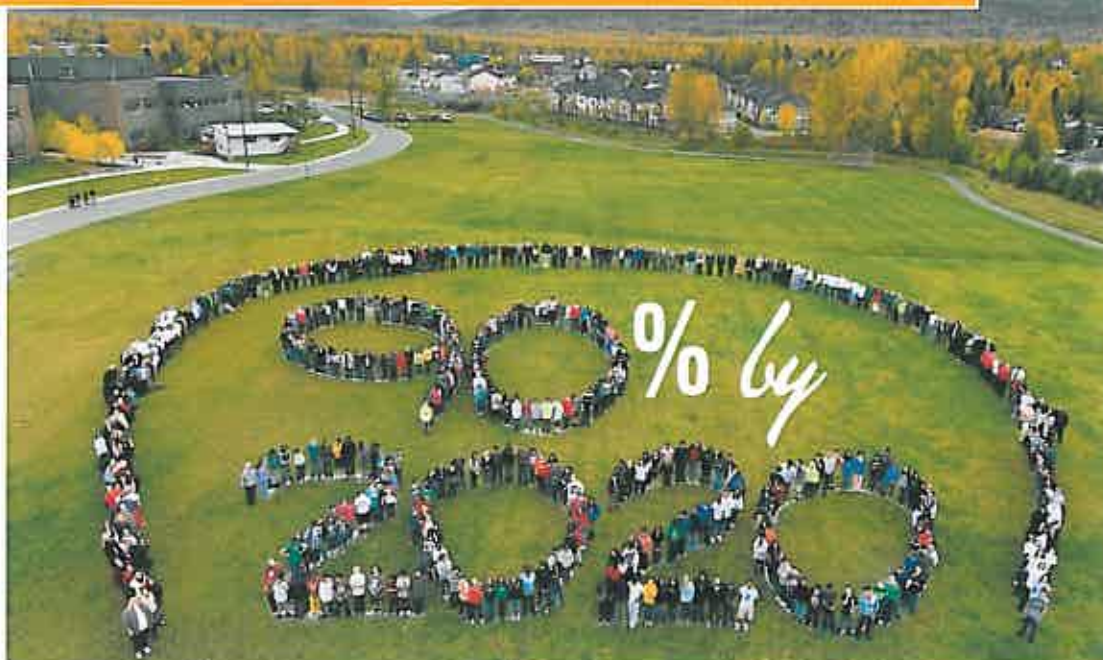


Exploring the Relationship between Protective Factors, Risk Behaviors, and School Engagement Factors among Anchorage High School Students



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Anchorage United for Youth Partners

Abused Women's Aid In Crisis (AWAIC)	Cook Inlet Region, Inc.
Alaska Baptist Family Services	Cook Inlet Tribal Council
Alaska Children's Services	Covenant House Alaska
Alaska Community Services	Credit Union 1
Alaska Housing Finance Corporation	D.A.R.E.
Alaska Immigration Justice Project – Language Interpreter Center	Elmendorf Youth Programs
Alaska Job Corps, Anchorage Office	Food Bank of Alaska
Alaska Mental Health Trust Authority	Girl Scouts Susitna Council of Alaska
Alaska National Guard Child and Youth Program	Leaders Involved Furthering Education (LIFE)
Alaska Native Justice Center	McLaughlin Youth Center
Alaska Pride Program	Mountain View Community Council
Alaska PTA	Mountain View Weed & Seed
Alaska Teen Media Institute	Municipality of Anchorage
Alaska Youth and Family Network	Nine Star Education and Employment Services
Alaska Youth and Parent Foundation	Polynesian Association of Alaska
Alyeska Pipeline Service Company	Reclaiming Futures
American Diabetes Association	Red Ribbon Coalition
Anchorage Assembly	Salvation Army, Alaska Division
Anchorage Chamber of Commerce	Southcentral Foundation
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EXECUTIVE SUMMARY

Background

The trends report of risk and protective factors among Anchorage high school students was recently published by Anchorage United for Youth (AUY) in May 2012. However, the relationship between individual and multiple protective factors and risk and school engagement factors had not been analyzed. United Way of Anchorage contracted Dr. Gabriel Garcia from UAA Department of Health Sciences to address this gap in research.

Research Aims

The aims of this research study are as follows: (1) To identify and assess the relationships between the reported number of protective factors, overall perceptions of alcohol and marijuana use, engagement in risk behaviors (particularly current alcohol use, binge drinking, and current marijuana use), and school engagement factors (particularly school attendance and grades) among Anchorage high school students; and (2) To examine the strength of association between the different protective factors and the identified risk behaviors and school engagement factors.

Methods

Secondary data analysis of the combined 2005 to 2011 Youth Risk Behavior Survey data of Anchorage high school students was conducted. A total of eight protective factors, two perception variables, three risk behaviors, and two school engagement factors were considered in bivariate and/or multivariate analysis.

Results

The results of the study can be summarized in the following bullet points:

- It takes about **3 to 5 protective factors** to significantly decrease the rates of risk behaviors and to significantly increase the rate of high school students getting A's and B's. On the other hand, it takes having **6 to 8 protective factors** to significantly decrease school absenteeism rates.
- Each one-unit increase in the number of protective factors reported by youth can significantly decrease the likelihood of engaging in risk behaviors and increase the likelihood of positive school outcomes from **14% to 40%**.
- The protective factors that had the strongest effect on decreasing the odds of youth engaging in risk behaviors were ***having caring and encouraging teachers, having parents that talk to them about school every day, volunteering or helping three or more hours per week in school or the community, and being involved in organized after school activities two or more days per week.***

- The protective factors that had the strongest impact on decreasing the likelihood of missing classes or school without permission were ***having parents that talk to them about school every day, having caring and encouraging teachers, feeling like they are not alone, and having a school that has clear rules and consequences for their behavior.***
- The protective factors that had the strongest effect on increasing the likelihood of getting A's and B's in school were ***being involved in organized after school activities two or more times per week, spending three hours or more a week volunteering or helping in school or the community, and having parents that talk to them about school every day.***

Conclusion

This study provides strong evidence in the importance of increasing and enhancing youth protective factors in the prevention of risk behaviors and school absenteeism and the promotion of good grades in school. Each of us in the Anchorage community can help in this effort by individually supporting our youth, letting them know they are not alone and that they are valued and cared about. We should also provide youth meaningful opportunities to get them involved in the community and in school. Lastly, we should also provide opportunities and resources to help support parents and teachers in improving their relationships with youth. By truly coming together, we can help guide our youth to high school graduation and a successful, healthy future.

INTRODUCTION

Anchorage United for Youth

Anchorage United for Youth (AUY) is a coordinated, community-wide partnership of public, private, and nonprofit partners working together to help our youth succeed. AUY partners are committed to the common goals of increasing the rates of Anchorage youth who graduate from high school and increasing the rates of our youth who avoid substance use and violence.

Graduation from high school is an important marker of youth success and the reason why United Way of Anchorage and Anchorage United for Youth partners are committed to increasing the Anchorage high school graduation rate to 90% by the year 2020. Since 2005, the Anchorage School District on-time graduation rate has risen from 59.6% to 72.77% in 2012. This is a significant increase, but nearly 30% of our students are still not graduating on time. We have a lot of progress to make, but believe that by working together to ensure our youth have the assets they need to be successful, we can achieve this bold community goal.

According to research, youth who have a greater number of assets like meaningful out-of-school-time activities to engage in, stable, caring adults in their lives and supportive, involved families are more likely to be engaged in school, make positive choices, and avoid risk behaviors (Search Institute, n.d.). AUY implements strategies based on increasing these assets (also called resiliency or protective factors) so our youth are equipped to make healthy choices and avoid risk behaviors. Specifically, the AUY community plan is designed to increase these external developmental assets:

- Family support and engagement
- Supportive adults in the community to help guide youth toward positive choices
- Meaningful opportunities for youth to engage in the community and workforce

About this study

While research supports the above approach, AUY partners sought to analyze local Anchorage (Youth Risk Behavior Survey) data to identify how the presence of individual and multiple protective factors is related with youth risk behaviors and engagement in school. Studies also show that if youth have negative perceptions about alcohol and drug use, they are less likely to engage in those behaviors (Abdelrahman, Rodriguez, Ryan, & Weinbaum, 1999; Hawkins, Catalano, & Miller, 1992; Petraitis, Flay, Ryan, & Weinbaum, 1995). AUY partners were interested in finding out if local youth perceptions about alcohol and marijuana use influenced decisions to engage in these risk behaviors.

This study, conducted by Dr. Gabriel Garcia (University of Alaska Anchorage Department of Health Sciences), uses data reported by high school students in the Anchorage Youth Risk Behavior Survey from 2005 to 2011. Specifically, this study seeks first to identify and assess the relationships between the reported number of protective factors, overall perceptions of alcohol and marijuana use, engagement in risk behaviors (particularly current alcohol use, binge drinking, and current marijuana use), and school engagement factors (particularly school attendance and grades) among Anchorage high school students. Secondly, this study examines the strength of association between the different protective factors and the identified risk behaviors and school engagement factors. Findings from this study alert us to the importance of multiple protective factors in the lives of our youth and illuminate opportunities for our community to continue working together to support and guide our kids to a successful future.

Strengths of Our Youth

This analysis examined the association between specific protective factors and the youth risk behaviors of alcohol, marijuana and absenteeism. As a community, we must keep in mind that overall, Anchorage youth are making healthy choices. Most teens are not drinking alcohol or using marijuana. The following are highlights from the results of the 2011 Anchorage Youth Risk Behavior Survey (Garcia & Sledge, 2012):

- Two thirds of Anchorage students in traditional high schools are not currently using alcohol. (The percent of students not drinking has increased from 41% in 2005 to 66% in 2011)
- Almost 80% of Anchorage students in traditional high schools do not binge drink. (The percent of students not binge drinking has increased from 72% in 2005 to 79.5% in 2011)
- 77% of Anchorage students in traditional high schools are not currently using marijuana. (The percent of students not smoking marijuana has increased from 77% in 2005 to 79% in 2011)

As seen from the findings above, we have made good progress in preventing youth from drinking and smoking marijuana in the past six years. However, despite our progress, a third of teens are still engaged in some risk behaviors and need our attention and outreach.

METHODS

Dataset and Study Design

The analysis was conducted with the Anchorage specific Youth Risk Behavioral Survey (YRBS) dataset. YRBS is a nationwide cross-sectional, self-completion survey about risk and health behaviors, lifestyle, and protective factors among high school students. This survey uses a two-stage cluster sampling design in each state to produce a representative sample of 9th to 12th grade students statewide and nationwide (Brener et al., 2004). To ensure representativeness of the YRBS results, states must have a response rate of at least 60%. YRBS has been conducted every other year since 1990, but not all states or cities/towns within each state have participated in every YRBS cycle. For example, the Anchorage School District (ASD) has participated in YRBS only in years 1995, 2005, 2007, 2009, and 2011. Three types of ASD high schools participated in YRBS: traditional, alternative, and the McLaughlin school. This study focuses only on data collected in ASD traditional high schools from 2005 to 2011.

Variables of Interest

For this study, we focused on 15 variables, of which, eight are protective factors, three are risk behaviors, two are school engagement factors, and two are composite variables relating to perceptions about alcohol and marijuana use. The eight protective factors are as follows, categorized into five external developmental youth assets:

Family Support & Engagement

- Talking to parents about school every day

Supportive Adult Relationships

- Having 3 or more adults they are comfortable seeking help from

Meaningful Opportunities

- Spending 3 or more hours a week volunteering or helping at school or in the community
- Being involved in organized after school activities two or more days per week

Community Support and Environment

- Feeling like they matter to people in their community
- Feeling like they are not alone

School Environment

- Having teachers really care about them and give them a lot of encouragement
- Having school that has clear rules and consequences for behavior

The three risk behaviors are:

- Current alcohol use (drinking alcohol in the past 30 days)
- Binge drinking (drinking 5 or more servings of alcohol in one sitting)
- Current marijuana use (smoking marijuana in the past 30 days)

The two school engagement factors are:

- Missing class without permission in the past 30 days
- Getting mostly A's and B's in school

All variables above were treated as dichotomous variables, having “yes” or “no” as their categories. Then, we made the assumption that each of the protective factors is additive and has a value of 1 for a “yes” response. All “yes” responses were added together, giving a range of score from 0 to 8, with 0 having no protective factor and 8 having all 8 protective factors.

A composite variable relating to perception of alcohol use and a composite variable relating to perception of marijuana use were developed. Each composite variable came from the combination of three variables, with each variable category scored as either 0 or 1. Combined together, the alcohol perception score and marijuana perception score ranged from 0 to 3 points each, with 0 points indicating a positive perception of alcohol or marijuana use and 3 points indicating a negative perception of alcohol or marijuana use. The three alcohol perception variables and three marijuana perception variables with their corresponding scores are shown in Table 1 below. Note that not all of the alcohol and marijuana perception variables were available in all of the years that the YRBS was conducted; they were only available for 2009 and 2011.

Table 1. Alcohol Perception and Marijuana Perception Variables

Variables	Points
<u>Alcohol Perception Variables:</u>	
Students think there is no or very little chance of drinking alcohol regularly as being seen as cool	0=No, 1=Yes
Students think their parents consider it very wrong for them to drink alcohol regularly	0=No, 1=Yes
Students who think one or two drink of alcohol nearly every day has moderate to great risk	0=No, 1=Yes
Total Possible Score	0-3 points
<u>Marijuana Perception Variables:</u>	
Students think there is no or very little chance of smoking marijuana as being seen as cool	0=No, 1=Yes
Students think their parents consider it very wrong for them to smoke marijuana	0=No, 1=Yes
Students who think smoking marijuana has moderate to great risk	0=No, 1=Yes
Total Possible Score	0-3 points
Score ranges from 0 to 3, with 0 having positive perception of alcohol or marijuana use and 3 having negative perception of alcohol or marijuana use.	

Analysis

All of the analyses were done via SPSS Version 19.0 with the complex sampling module, using the combined 2005 to 2011 YRBS dataset. Frequencies and proportions of all of the variables of interest were determined. Then, the mean number of protective factors and mean score of alcohol and marijuana perceptions were assessed for each YRBS year, grade level, and sex. Cross-tabulations were also run between the number of protective factors and each of the risk behaviors and school engagement factors. Additionally, cross-tabulations between perceptions of risk behaviors and actual behaviors were examined. To determine whether the number of protective factors has an independent association with each of the risk behaviors and school engagement factors, controlling for the students' sex and grade level, multiple logistic regressions were run. Finally, to determine the strength of association of each protective factor, relative risk was calculated between each of the protective factors and each of the risk behaviors and school engagement factors. It must be noted that all of the analysis involving the variable, "missing class within the past 30 days," was limited to the 2011 YRBS data because that was the only year it was available.

RESULTS

YRBS Sample

The combined total sample from 2005 to 2011 Anchorage YRBS dataset was 3,615, of which 871 were from 2005, 954 were from 2007, 832 were from 2009, and 958 were from 2011. The 2005 to 2011 YRBS sample represented a population of Anchorage high school students totaling 53,857 (see Table 2).

Table 2. 2005 to 2011 YRBS Total Sample and Population Representation

YRBS Year	Unweighted Count (Sample Size)	Weighted Count (Population Size)
2005	871	13,193
2007	954	13,834
2009	832	13,594
2011	958	13,236
Total	3,615	53,857

Characteristics of Anchorage High School Students

Collectively, from 2005 to 2011, approximately 51% of Anchorage high school students were boys and 49% were girls. The distribution of 9th, 10th, 11th, and 12th graders was fairly even – 27% were 9th graders, 26% were 10th graders, 25% were 11th graders, and 22% were 12th graders. With regards to risk behaviors, about 38% reported currently drinking alcohol, 24% reported binge drinking, and 20% reported currently smoking marijuana. Approximately one-third of the students reported missing classes or school without permission and about 70% of them reported getting mostly A's and B's. With regards to protective factors, more than half reported feeling like they matter to people in their community, feeling like they are not alone, having teachers that really care about them, and having a school that has clear rules and consequences for their behavior. One-fifth of students reported spending 3 or more hours a week volunteering or helping at school or in the community. For more details, please see Table 3.

Table 3. Demographic Characteristics, Risk Behaviors, and Protective Factors, Year 2005 to 2011 Combined

Characteristics	Weighted Percent
Sex	
Boys	48.9
Girls	51.1
Grade Level	
9 th	26.9
10 th	26.1
11 th	24.9
12 th	22.1
Risk Behavior	
Current alcohol use	37.8
Binge drinking	24.3
Current marijuana use	20.0
School-Related Factors	
Missing classes without permission ¹	31.8
Getting mostly A's and B's	68.4
Protective Factors	
Talking to parents about school about every day	44.7
Having 3 or more adults they are comfortable seeking help ²	44.7
Spending 3 or more hours a week volunteering/helping at school or community ³	20.0
Being involved in organized after school activities two or more days per week ⁴	39.9
Feeling like they matter to people in their community	52.7
Feeling like they are not alone	79.2
Having teachers that really care about them and give them a lot of encouragement	57.5
Having school that has clear rules and consequences for behavior	63.0

¹Missing classes or school without permission variable is only available for YRBS 2011.

²It takes having 3 or more supportive adults to start seeing significant decrease in rates of some risk behaviors and negative school related factors.

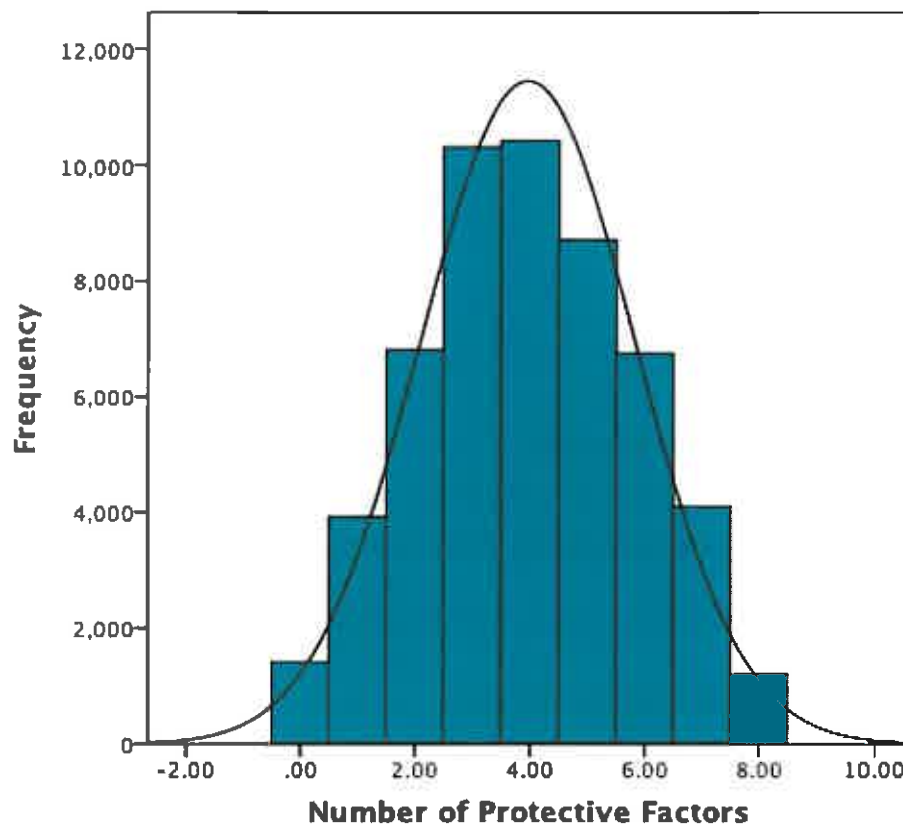
³It takes having 3 or more hours per week of volunteering to start seeing significant decrease in rates of some risk behaviors and negative school related factors.

⁴It takes having 2 or more days per week of being involved in after school activities to start seeing significant decrease some risk behaviors and negative school related factors.

Number of Protective Factors

As seen from the bell-shaped curve on the histogram below (Graph 1), the number of protective factors from 2005 to 2011 is normally distributed among Anchorage high school students. The overall average number of protective factors in the span of six years was 3.96. The median was at 4.00.

Graph 1. Histogram Showing the Distribution of the Number of Protective Factors among Anchorage High School Students from 2005 to 2011 Combined



From 2005 to 2011, the mean number of protective factors decreased, but not significantly, from 4.08 to 3.89 (see Table 4). When protective factors were categorized into 0-2, 3-5, and 6-8 protective factors, most youth fell in the category of having 3-5 protective factors (Figure 1). For each succeeding grade level, there was an upward trend in the mean number of protective factors (from 3.91 to 4.13), but it was not significant (Table 2). For adolescent boys and girls, there was no significant difference in the mean number of protective factors (Table 4).

Table 4. Mean Number of Protective Factors by Year, Grade Level, and Sex

Item	Mean Number of Protective Factors
Year	
2005	4.08
2007	4.01
2009	3.87
2011	3.89
Grade Level	
9 th	3.91
10 th	3.88
11 th	3.85
12 th	4.13
Sex	
Boys	3.92
Girls	4.00

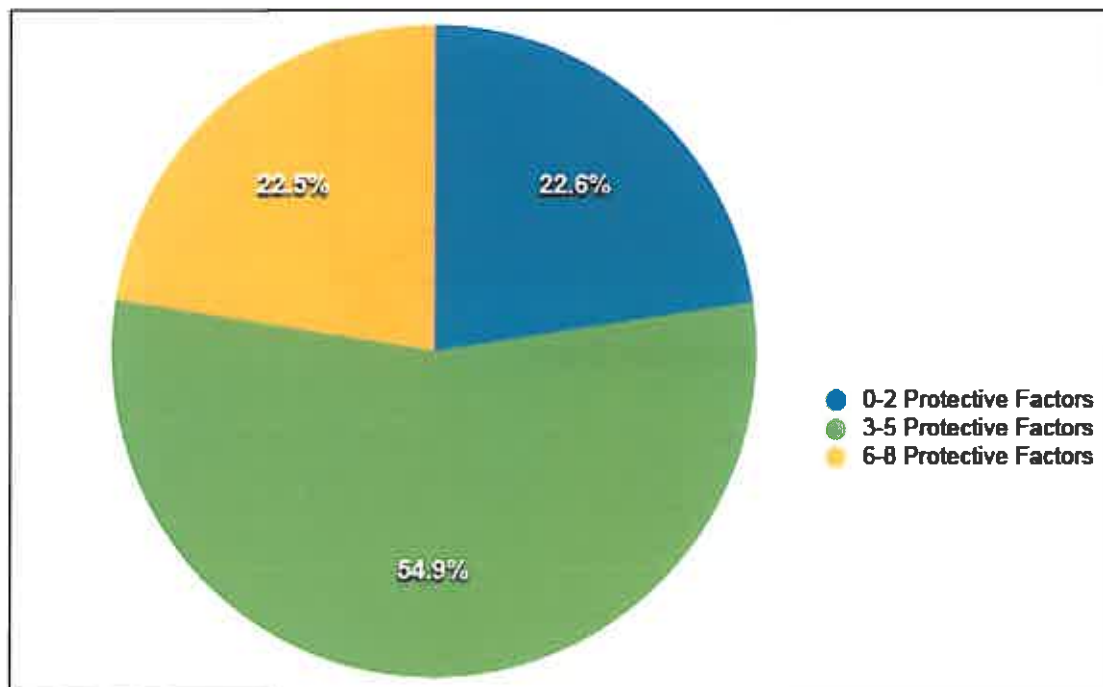
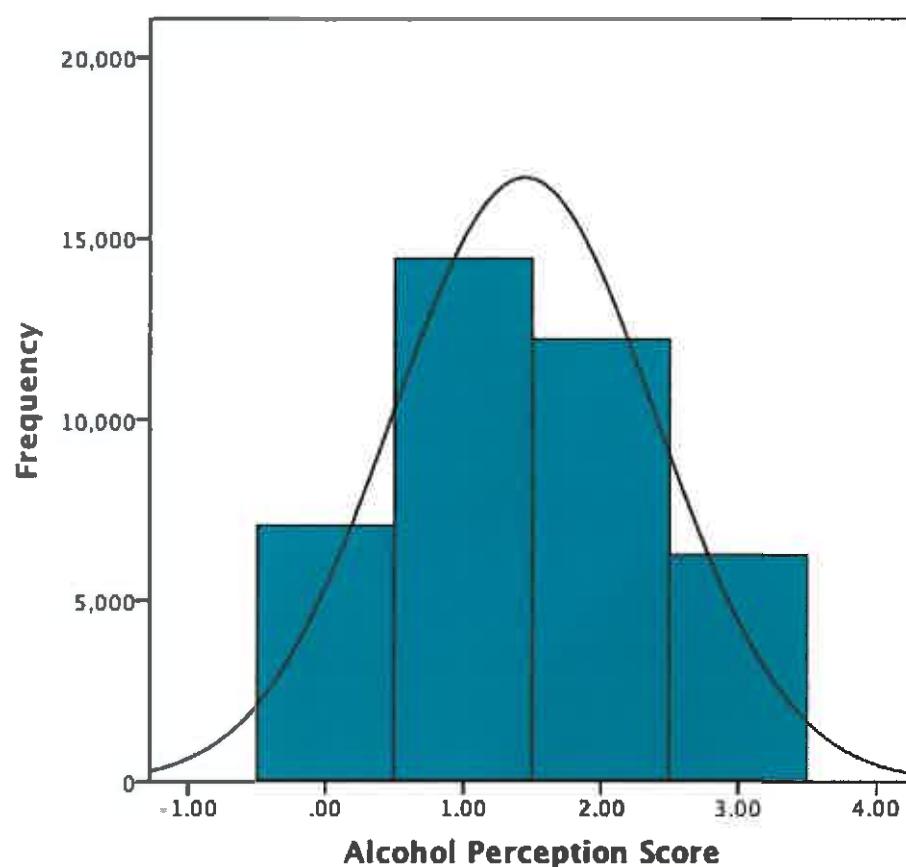


Figure 1. Proportion of youth having 0-2, 3-5, and 6-8 protective factors

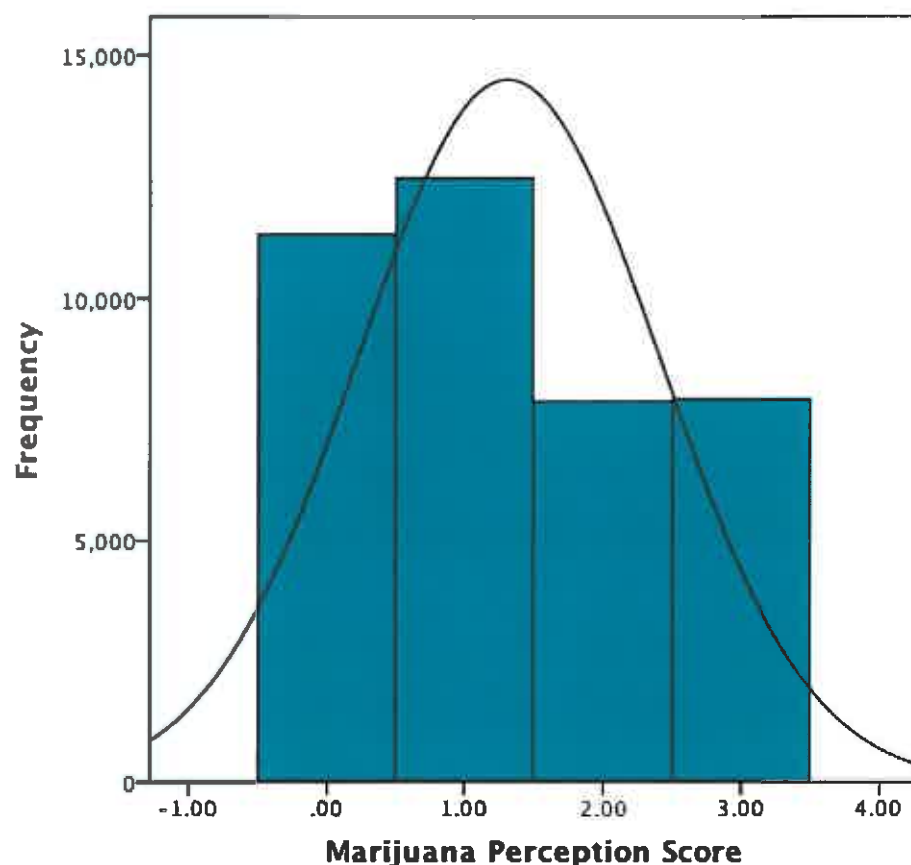
Perceptions on Alcohol and Marijuana Use

For 2009 to 2011, the overall mean alcohol perception score was 1.44, while the mean marijuana perception score was 1.31, where 0 indicates a positive perception of alcohol or marijuana use and 3 indicates a negative perception. Histograms showing the distribution of alcohol and marijuana perception scores are shown below.

Graph 2. Histogram Showing the Distribution of Alcohol Perception Score among Anchorage High School Students from 2009 to 2011, Combined



Graph 3. Histogram Showing the Distribution of Marijuana Perception Score among Anchorage High School Students from 2009 to 2011, Combined



The mean alcohol and marijuana perception scores were not significantly different from 2009 to 2011. When different grade levels were compared, the mean alcohol and marijuana perception scores decreased but not by a statistically significant margin. Among adolescent boys and girls, girls had significantly higher mean alcohol perception score, indicating that girls had greater negative perceptions of alcohol use compared to boys. Perceptions about marijuana use were not significantly different for boys and girls. See Table 5 for more details.

Table 5. Mean Number of Alcohol and Marijuana Perception Score by Year, Grade Level, and Sex

Item	Mean Alcohol Perception Score	Mean Marijuana Perception Score
Year		
2005	Not Available	Not Available
2007	Not Available	Not Available
2009	1.67	1.77
2011	1.63	1.65
Grade		
9 th	1.54	1.40
10 th	1.43	1.31
11 th	1.44	1.31
12 th	1.33	1.21
Sex		
Boys	1.35	1.24
Girls	1.53*	1.39

*Significantly different, $p < 0.05$. Higher mean score indicates negative perception of alcohol and marijuana use.

Protective Factors, Risk Behaviors, and School-Related Factors

As the number of reported protective factors increased, the proportion of youth reporting current alcohol use, binge drinking, and current marijuana use decreased, while the rates of youth reporting mostly A's and B's increased. A significant decrease in rates of risk behaviors could be observed when youth reported having at least four protective factors, whereas a significant increase in rates of students reporting getting mostly A's and B's could be observed when they reported having at least three protective factors. Unlike other risk behaviors, the rate of students missing classes did not significantly change with increasing number of protective factors. This finding may be due to unstable estimates for missing classes (i.e., it had wide confidence interval) because this variable only had one year of data unlike other risk behaviors that had four years of data. In other words, the wide confidence intervals of absenteeism rates across the number of protective factors overlapped, thus small significant changes were not detected. For more details, please see Table 6 and Graph 1.

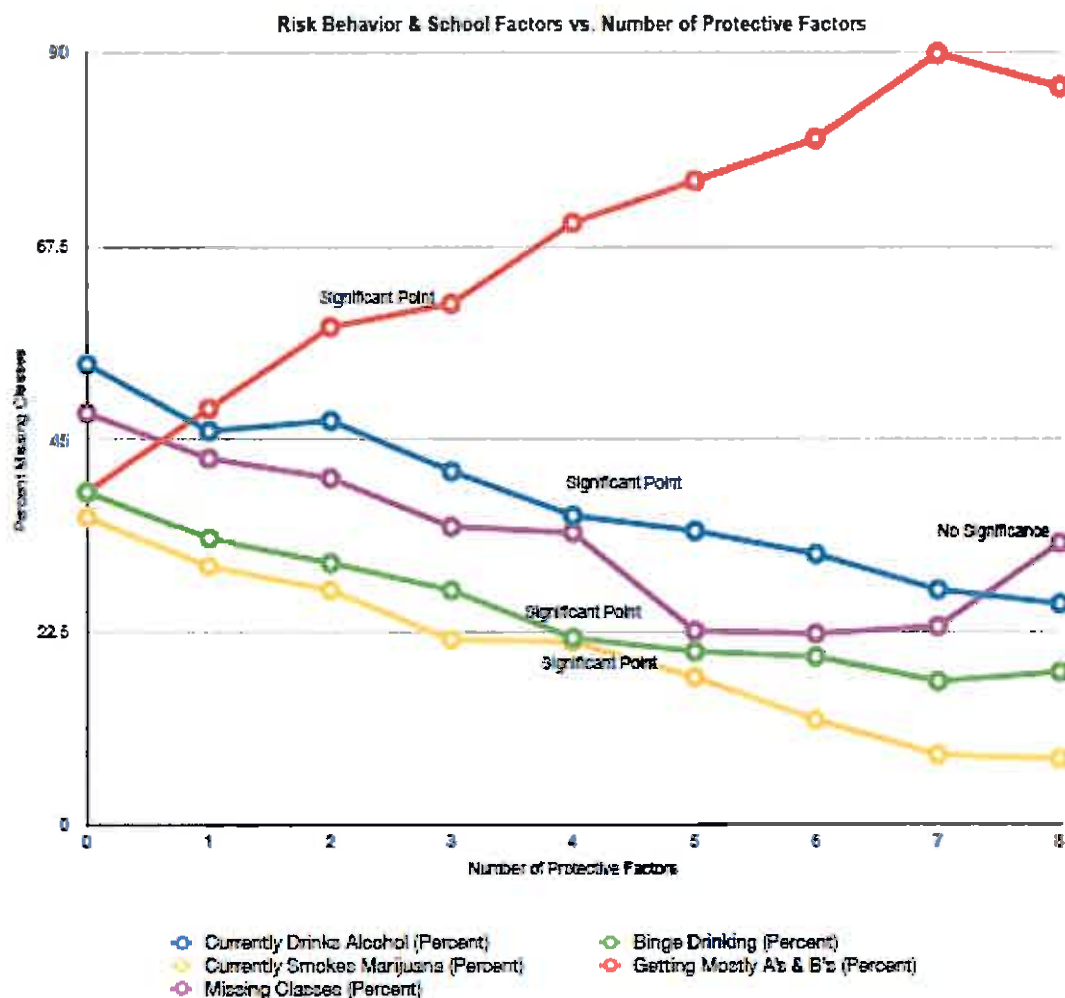
Table 6. Number of Protective Factors and Rates of Current Alcohol Use, Binge Drinking, Current Marijuana Use, Missing Classes, and Getting Mostly A's and B's

# of Protective Factors	Current Alcohol Use Percent	Binge Drinking Percent	Current Marijuana Use Percent	Missing Classes* Percent	Getting Mostly A's and B's Percent
0	53.8	38.9	35.9	48.1	38.9
1	46.0	33.4	30.2	42.8	48.6
2	47.2	30.6	27.4	40.5	58.1
3	41.3	27.4	21.6	34.8	60.8
4	36.1	21.8	21.3	34.1	70.2
5	34.3	20.2	17.2	22.6	75.1
6	31.6	19.6	12.2	22.3	80.0
7	27.4	16.7	8.1	23.1	89.8
8	25.8	17.8	7.6	32.9	86.0

Green Font: Point of significance, $p < 0.05$.

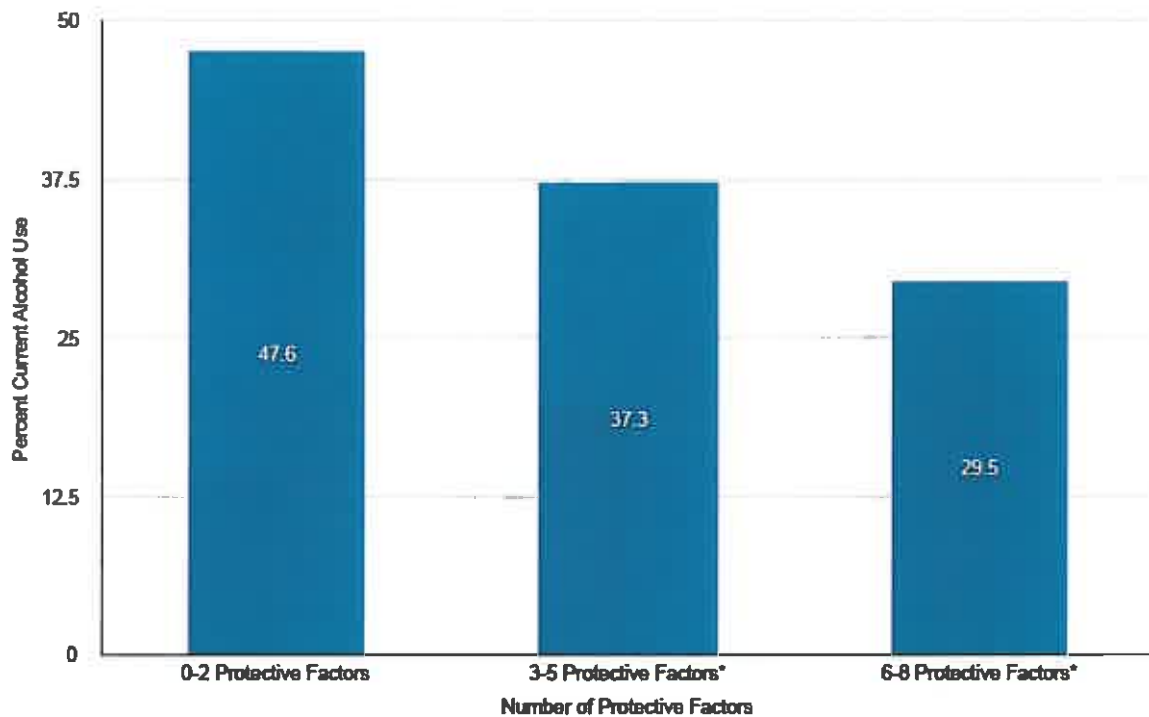
*Rate of missing classes is based on YRBS 2011. Rates of current alcohol use, binge drinking, current marijuana use, and getting A's and B's are based on the combined YRBS data for 2005 to 2011.

Graph 1. Number of Protective Factors vs. Risk Behaviors and School-Related Factors



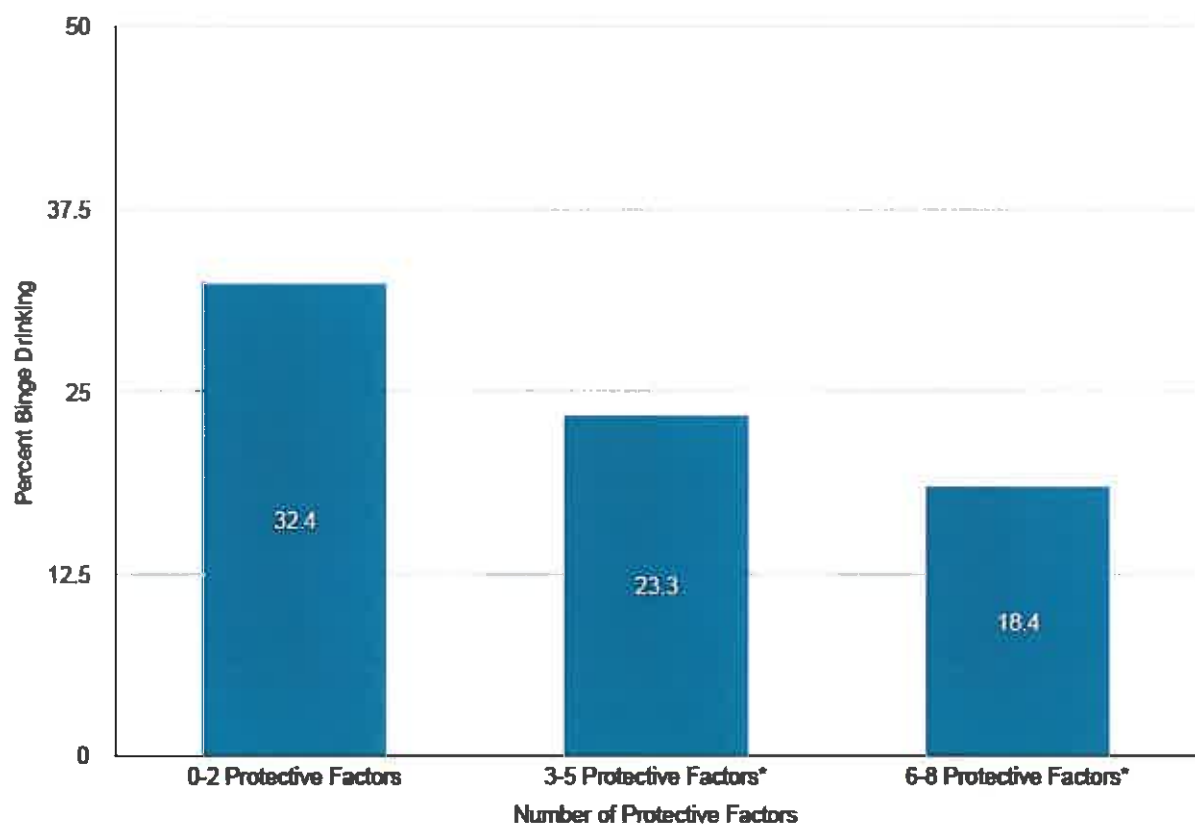
Another way of viewing the effect of the number of protective factors with risk behaviors and school engagement factors is by grouping the protective factors into three categories: 0 to 2, 3 to 5, and 6 to 8 protective factors. This perspective is important because it treats the number of protective factors in ranges rather than absolutes. In the real world setting, the number of protective factors among individuals may not necessarily be absolute, but rather falls in some range. Graphs 2, 3, 4, 5, and 6 (beginning on next page) show how the number of protective factors categorized into three groups affect rates of current alcohol use, binge drinking, current marijuana use, absenteeism, and grades, respectively.

Graph 2. Current Alcohol Use vs. Number of Protective Factors (Categorized to 0-2, 3-5, and 6-8 Protective Factors), Combined Data for YRBS 2005 to 2011



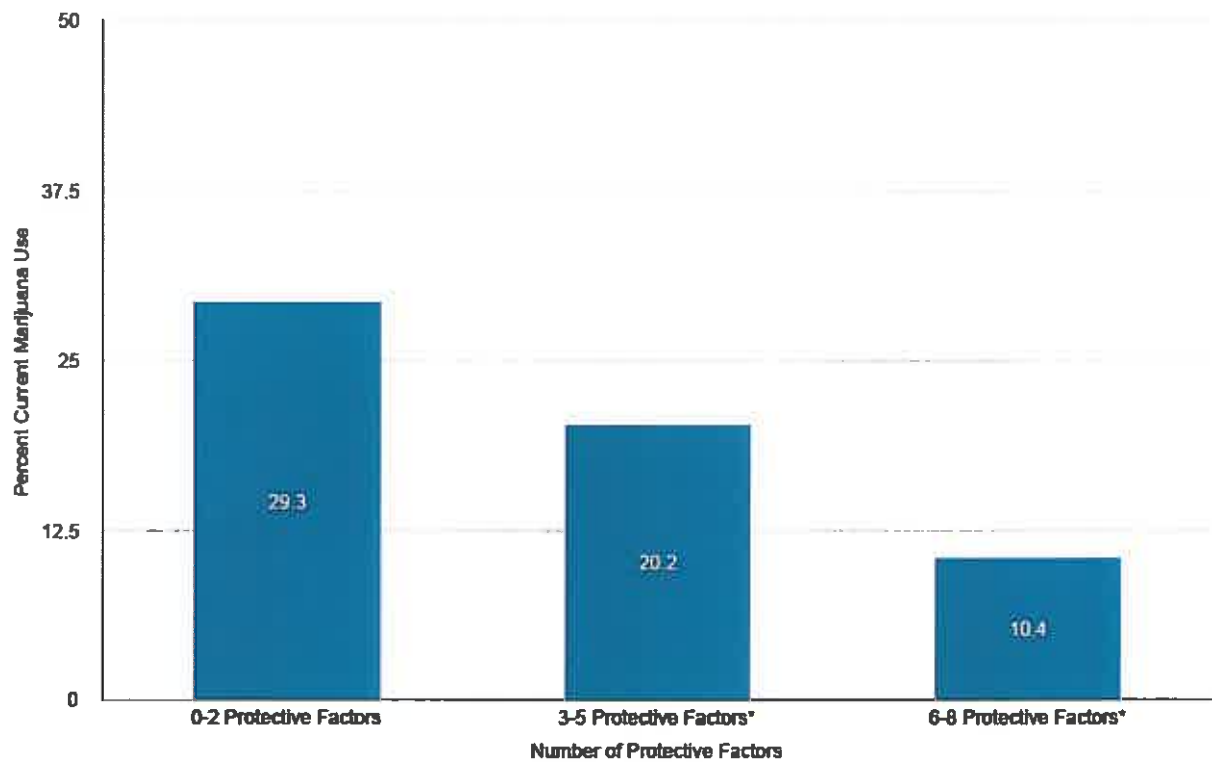
*There is a significant difference in the proportion of youth currently drinking alcohol who have 0-2 protective factors versus having 3-5 and 6-8 protective factors.

Graph 3. Binge Drinking vs. Number of Protective Factors (Categorized to 0-2, 3-5, and 6-8 Protective Factors), Combined Data for YRBS 2005 to 2011



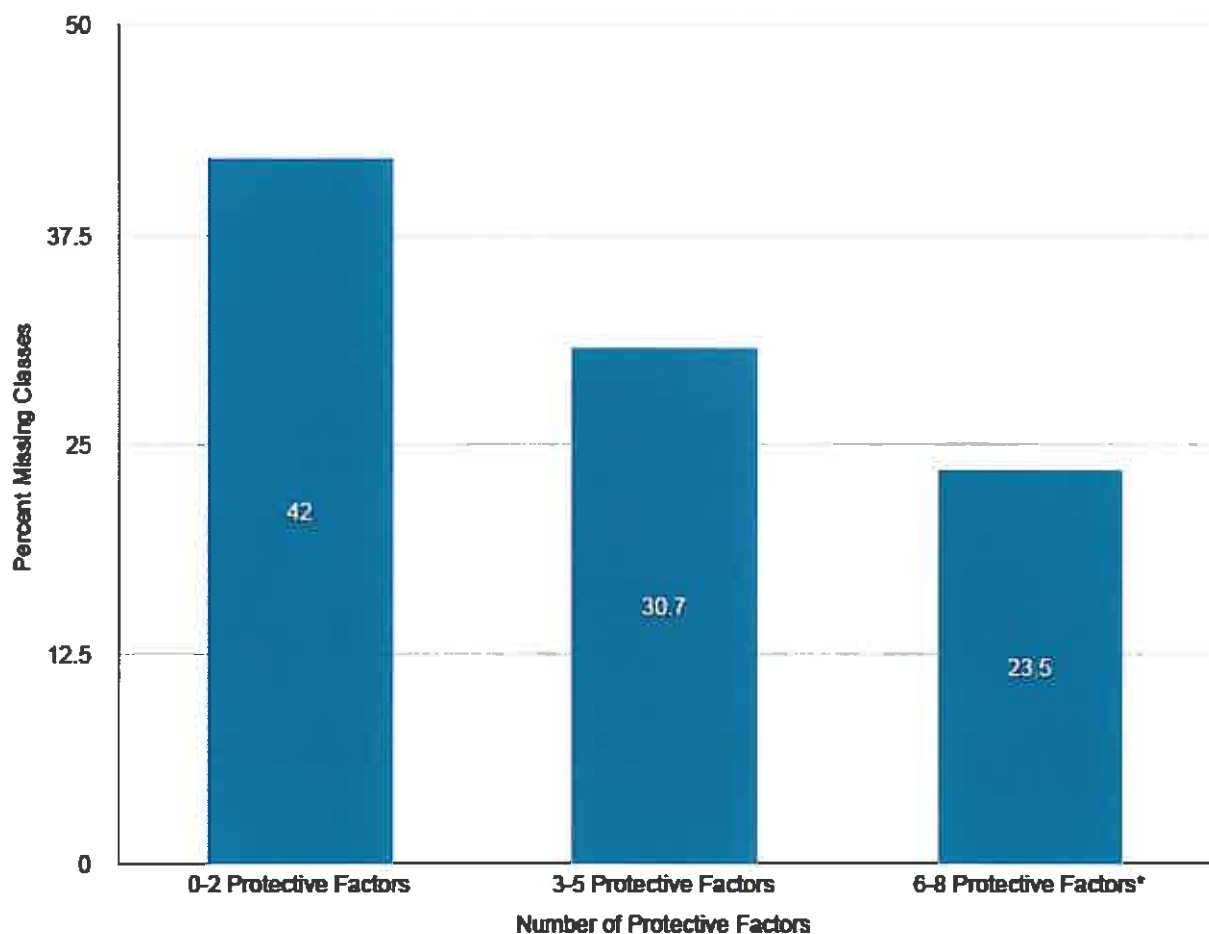
*There is a significant difference in the proportion of youth binge drinking who have 0-2 protective factors versus having 3-5 and 6-8 protective factors.

Graph 5. Current Marijuana Use vs. Number of Protective Factors (Categorized to 0-2, 3-5, and 6-8 Protective Factors), Combined Data for YRBS 2005 to 2011



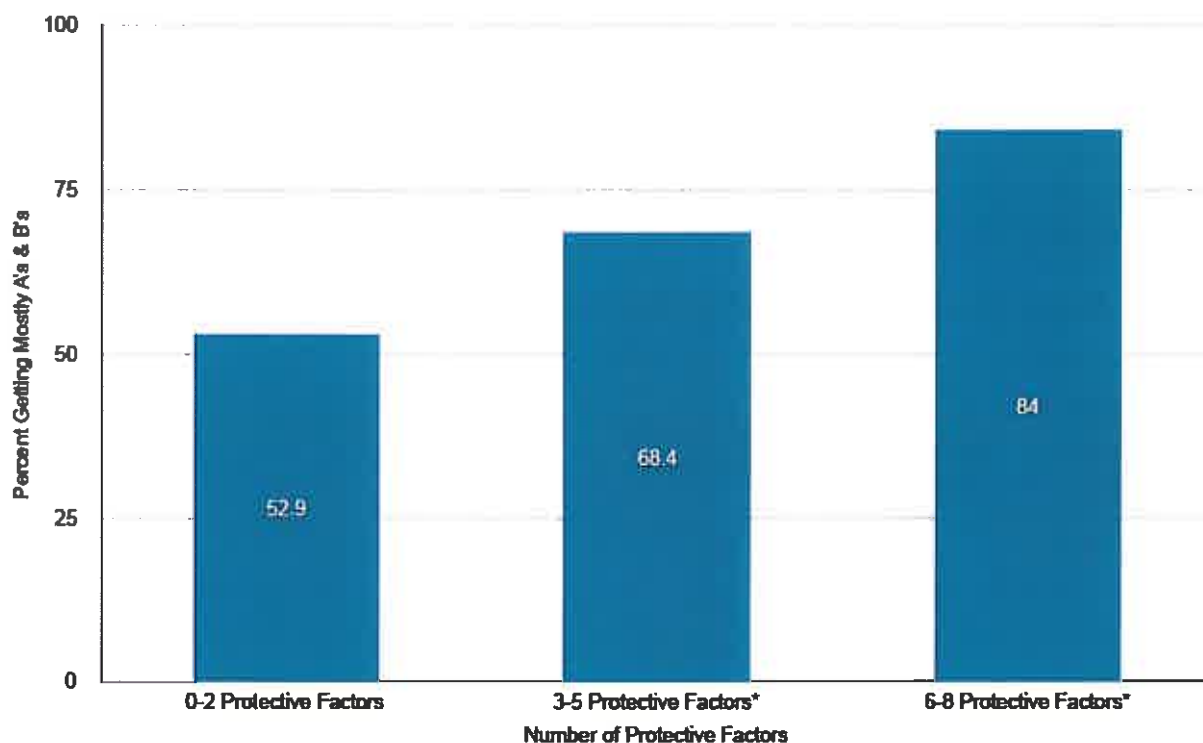
*There is a significant difference in the proportion of youth currently smoking marijuana who have 0-2 protective factors versus having 3-5 and 6-8 protective factors.

Graph 7. Missing Classes/School Without Permission vs. Number of Protective Factors
(Categorized to 0-2, 3-5, and 6-8 Protective Factors), Combined Data for YRBS 2005 to 2011



*There is a significant difference in the proportion of youth missing classes/school without permission who have 0-2 protective factors versus having 6-8 protective factors.

Graph 8. Getting Mostly A's and B's vs. Number of Protective Factors (Categorized to 0-2, 3-5, and 6-8 Protective Factors), Combined Data for YRBS 2005 to 2011



*There is a significant difference in the proportion of youth getting mostly A's and B's who have 0-2 protective factors versus having 3-5 and 6-8 protective factors.

As seen from the previous graphs, when protective factors were grouped in three categories, a significant difference was found between youth having 0 to 2 protective factors and youth having 3 to 5 or 6 to 8 protective factors for all three risk behaviors and school grades. In other words, youth that reported at least 3 to 5 protective factors had significantly lower rates of current alcohol use, binge drinking, and marijuana use, and higher rates of getting mostly A's and B's in school as compared to their peers who reported only 0 to 2 protective factors. With regards to absenteeism, as can be seen in Graph 7, students reporting 6 to 8 protective factors had significantly lower rates of missing classes/school without permission than those with only 0 to 2 protective factors.

Alcohol Perception, Marijuana Perception, and Risk Behaviors

As stated previously, the higher the alcohol and marijuana perception scores, the more negative the perceptions are of alcohol and marijuana use. Results show that current alcohol use and binge drinking rates decreased as the alcohol perception scores increased. Likewise, the rates of current marijuana use decreased with increasing marijuana perception scores. A minimum alcohol and marijuana perception score of 1.0 was all that was needed to see a significant decrease in rates of these risk behaviors. For more details, please see Tables 7, Table 8, Graph 9, and Graph 10.

Table 7. Alcohol Perception Score and Alcohol Use, 2009 to 2011

Alcohol Perception Score	Current Alcohol Use (Percent)	Binge Drinking (Percent)
0	63.5	41.1
1	46.1	29.3
2	24.9	15.3
3	9.4	3.9

Green Font: Point of significance, $p < 0.05$.

Graph 9. Alcohol Perception Score vs. Alcohol Use, 2009 to 2011

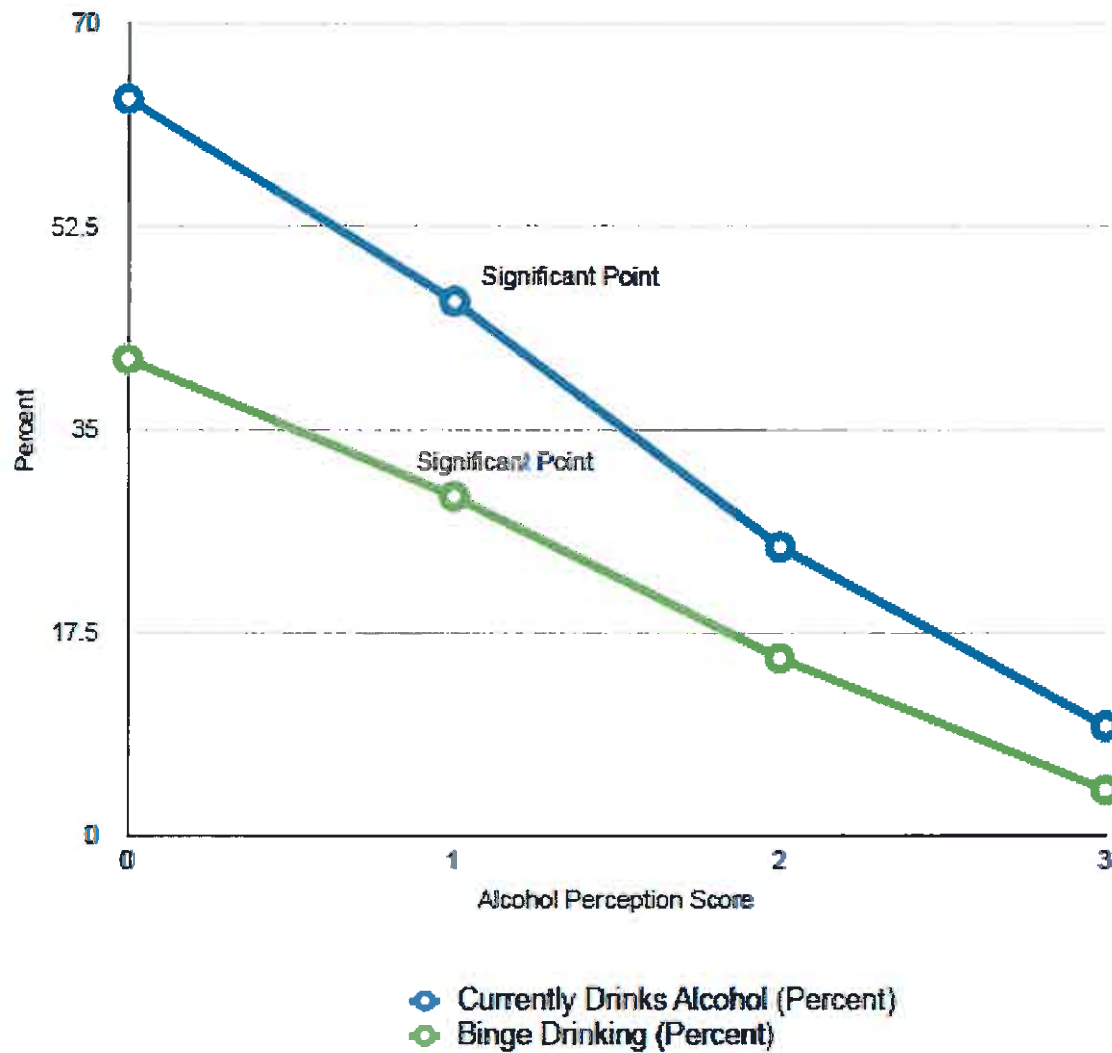
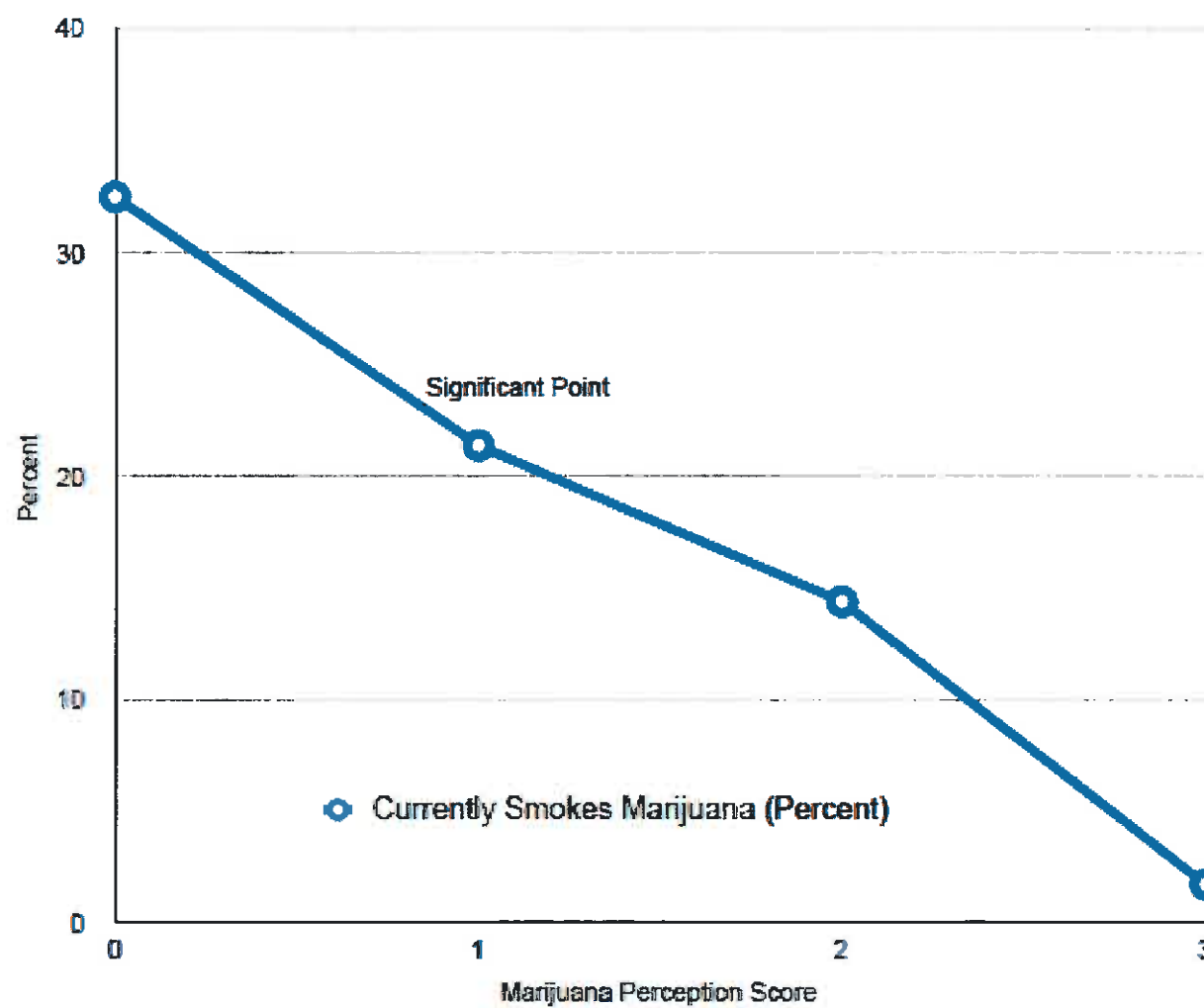


Table 8. Marijuana Perception Score and Current Marijuana Use, 2009 to 2011

Marijuana Perception Score	Current Marijuana Use (Percent)
0	32.5
1	21.4
2	14.4
3	1.7

Green Font: Point of significance, $p < 0.05$.

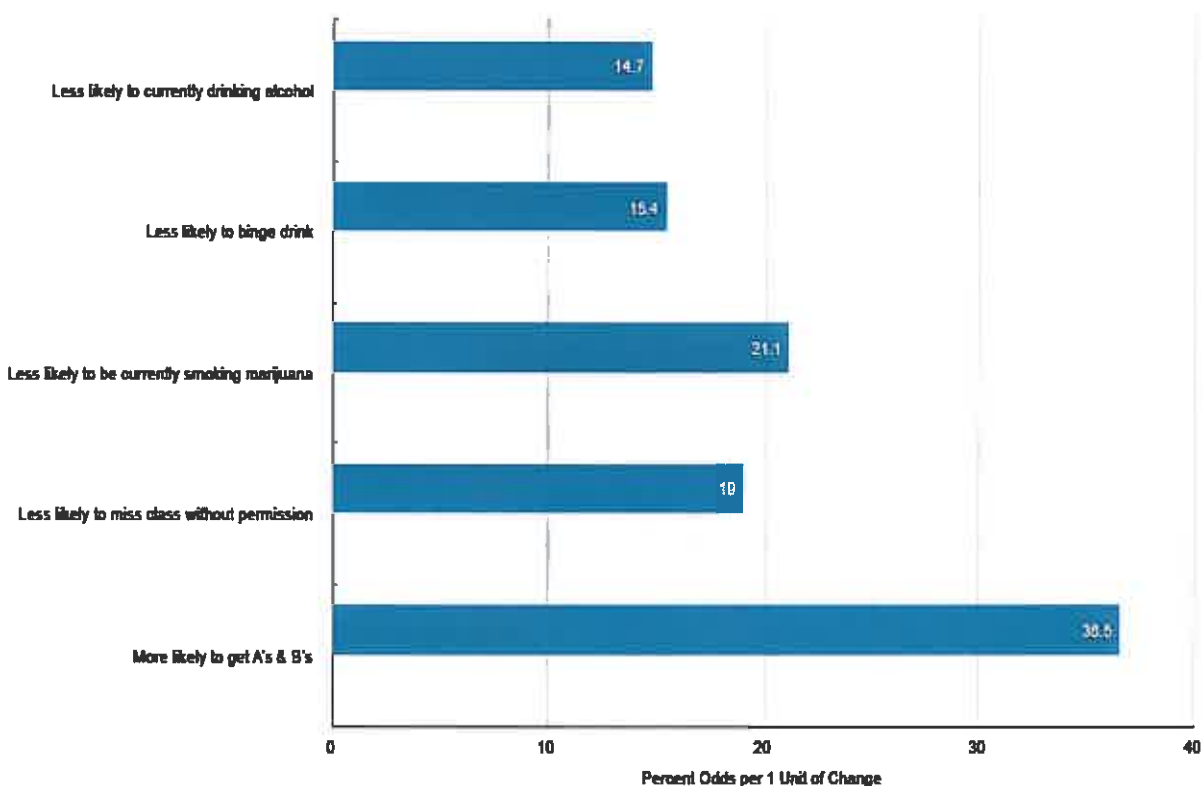
Graph 10. Marijuana Perception Score vs. Current Marijuana Use, 2009 to 2011



Relationship between the Number of Protective Factors, Risk Behaviors, and School Engagement Factors

Based on multiple regression analysis, the number of protective factors was significantly associated with all of the risk behaviors and school engagement factors, controlling for grade level and sex. For every 1 unit increase in the number of protective factors, students were 15% less likely to currently drink alcohol, 15% less likely to binge drink, 21% less likely to currently smoke marijuana, 19% less likely to miss class without permission, and about 37% more likely to mostly get A's and B's in school (see Graph 11).

Graph 11. Percent Odds of Engaging in Risk Behaviors, Missing Classes, and Getting A's and B's with the Number of Protective Factors as Independent Variable and Grade Level and Sex as Control Variables*

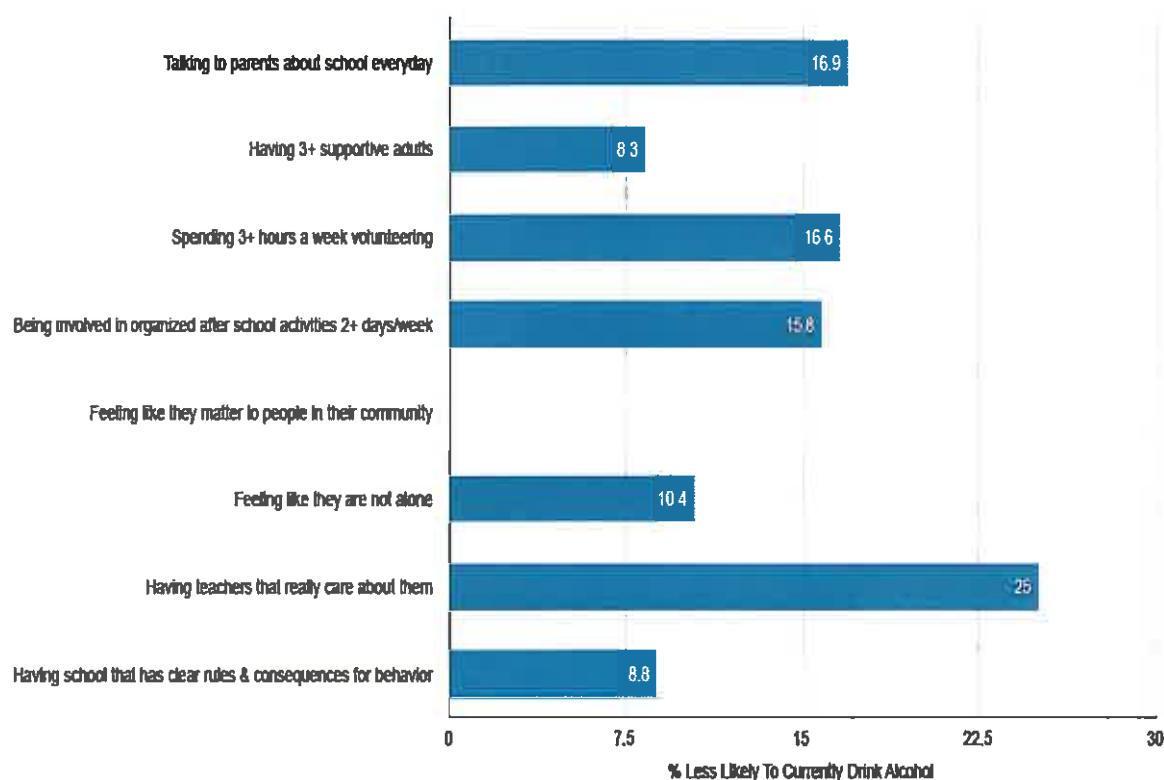


*The number of protective factors is significantly associated with all risk behaviors and school-related factors

Strength of Association of Each Protective Factor

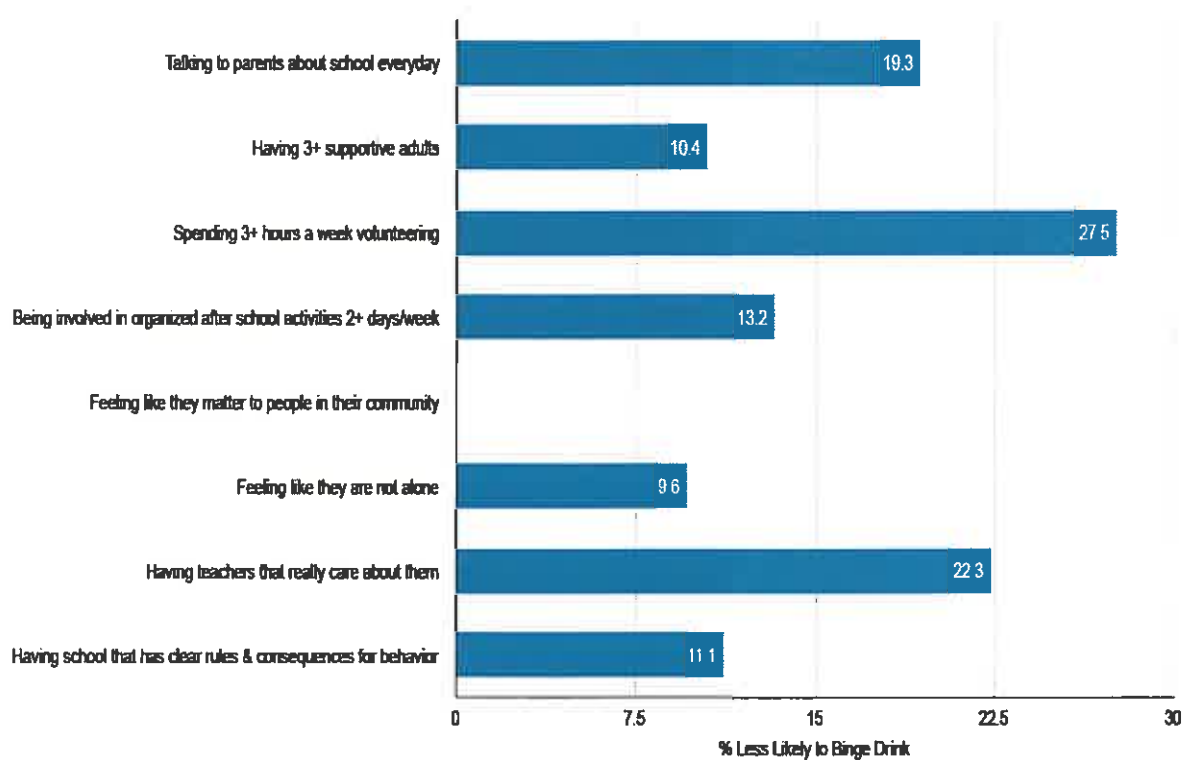
The strength of association between each protective factor and each of the risk behaviors and school engagement factors was assessed. The three strongest protective factors that decrease the odds of current alcohol use among youth (in descending order) were having teachers that care about them, talking with parents about school every day, and spending three or more hours a week volunteering (see Graph 12).

Graph 12. Strength of Association of each Protective Factor with Not Currently Drinking Alcohol



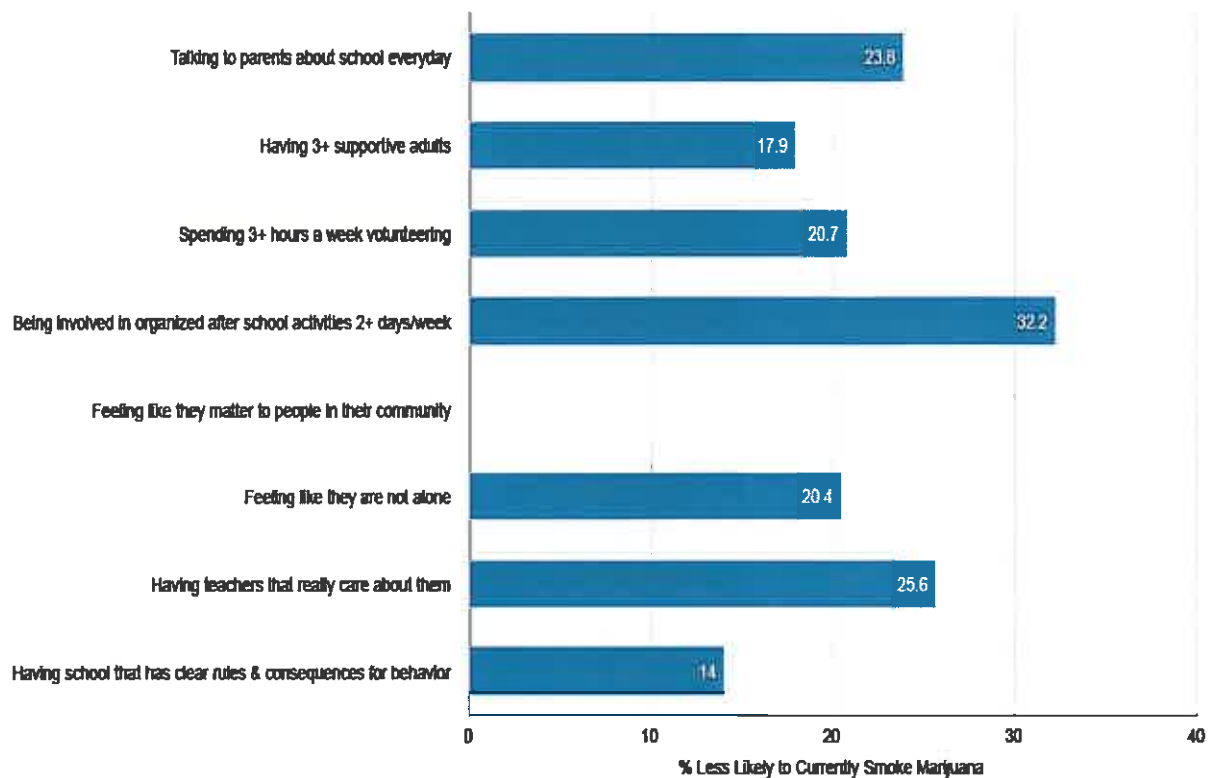
The three strongest protective factors in decreasing the odds of binge drinking (in descending order) were spending three or more hours a week volunteering or helping in school or the community, having teachers that care about them, and talking with parents about school every day (see Graph 13).

Graph 13. Strength of Association of each Protective Factor with Not Binge Drinking



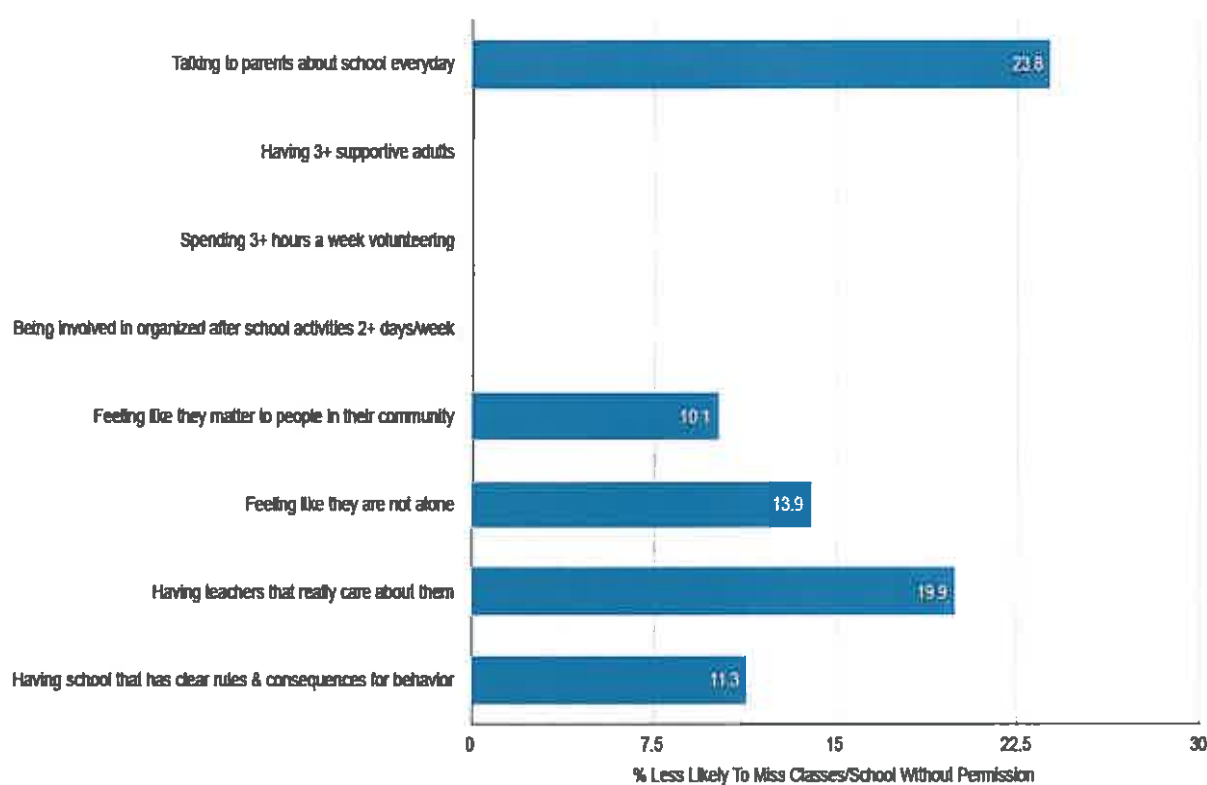
In decreasing the odds of current marijuana use among youth, the strongest protective factors included being involved in organized after school activities two or more days per week, having teachers that care about them, and talking with parents about school every day (see Graph 14).

Graph 14. Strength of Association of each Protective Factor with Not Currently Smoking Marijuana



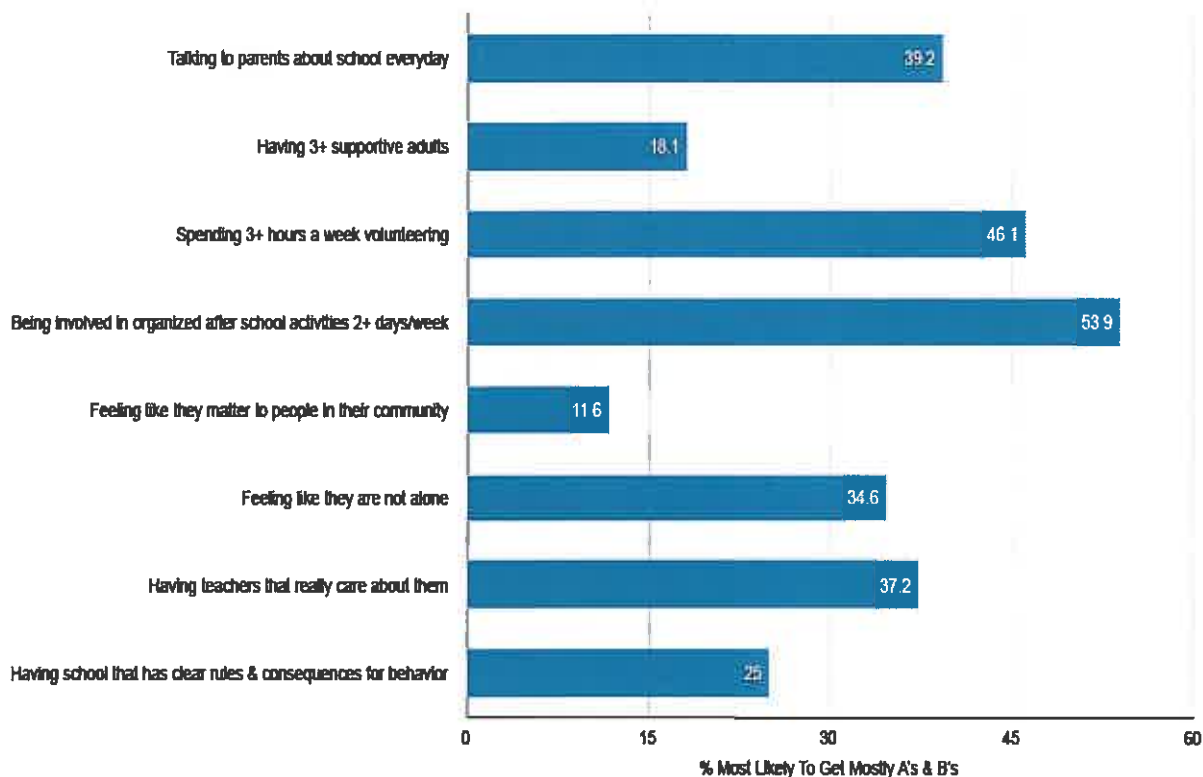
In decreasing the odds of missing classes or school without permission, the three strongest protective factors were talking to parents about school every day, having teachers that care about them, and feeling like they are not alone (see Graph 15).

Graph 15. Strength of Association of each Protective Factor with Not Missing Classes or School without Permission



With regards to getting A's and B's in school, the strongest predictors were being involved in organized after school activities two or more days per week, spending three or more hours volunteering or helping in school or the community, talking with parents about school every day, and having teachers that care about them (see Graph 16).

Graph 16. Strength of Association of each Protective Factor with Getting Mostly A's and B's in School



DISCUSSION & CONCLUSION

Discussion

The findings of this study show that, among Anchorage high school students, as the number of reported protective factors increases, the rates of current alcohol use, binge drinking, current marijuana use, and school absenteeism decrease, and the rates of getting A's and B's in school increase. Likewise, negative perceptions of alcohol and marijuana use correlate with lower rates of current alcohol use, binge drinking, and current marijuana use.

Of all the risk behaviors and school engagement factors examined in this study, school grades, current marijuana use, and absenteeism were most sensitive to changes in the number of protective factors. For every one unit increase in the number of protective factors present, students were 37% more likely to report getting mostly A's and B's in school, 21% less likely to be currently smoking marijuana, and 19% less likely to be missing school or classes without permission.

Among the different protective factors, the four that had the strongest effect on decreasing the odds of youth engaging in risk behaviors were:

- Having caring and encouraging teachers
- Having parents that talk to them about school every day
- Volunteering or helping three or more hours per week in school or the community
- Being involved in organized after school activities two or more days per week.

The protective factors that had the strongest impact on decreasing the likelihood of missing classes or school without permission were:

- Having parents that talk to them about school every day
- Having caring and encouraging teachers
- Feeling like they are not alone
- Having a school that has clear rules and consequences for their behavior

In increasing the odds of getting A's and B's in school, the protective factors that had the strongest effect were:

- Being involved in organized after school activities two or more times per week
- Spending three hours or more a week volunteering or helping in school or the community
- Having parents that talk to them about school every day.

Limitations of Study

This study has three significant limitations. First, given that YRBS is a cross-sectional survey (i.e., data is collected in a single point in time), it has limited ability to make claims of causality. In other words, the findings presented here are based on measures of association, which does

not necessarily imply causation. However, social-behavioral theory and previous evidence on this topic strengthens the significant relationship claims made here. Second, since this study is an analysis of data that have already been collected, there was no opportunity to follow-up on some survey questions, add other important questions, or request explanations for some survey responses. This limited the study's ability to look at other potential protective factor(s) and/or understand what the youth respondent may have meant when answering particular questions. For example, the YRBS question on how many adults youth are comfortable seeking help from other than parents is problematic. This question does not necessarily get at the type and quality of relationship the youth may have with other adults. Perhaps it is the type and quality of relationship the youth have with an adult, regardless of how many, that protects them from risk behaviors. Finally, while most of the questions in the YRBS are consistent across the years, a few of the questions that were key in this study were not asked in all of the years that the YRBS was conducted, thereby limiting our analysis. The YRBS question about missing classes was introduced in 2011, and some of the survey questions related to alcohol and marijuana perception were not asked in 2005 or 2007. This limitation certainly affected the size of the sample, which in turn can increase standard errors and confidence intervals in the analysis, thereby losing the ability to detect small significant changes or associations.

Despite these limitations, this study provides an important framework to inform the efforts of Anchorage United for Youth partners and the entire Anchorage community. This study is the first of its kind that focuses on Anchorage youth. Additionally, it is also one of the first studies that examines the effect of how protective factors, individually and in combination, can influence risk behaviors and school engagement factors. Though this study provides important information for community and public health practitioners and researchers, alike, there is certainly more research that needs to be done. In particular, future research should investigate other risk behaviors and potential protective factors as well as the potential influence of race/ethnicity.

Conclusions and Recommendations

This study has several important implications. First, these results support the strategies that Anchorage United for Youth partners have been implementing to increase protective factors so our youth are equipped to make healthy choices and avoid risk behaviors. Having just four of the eight protective factors significantly reduces the likelihood of youth engaging in risk behaviors and increases the likelihood of improving their grades in school. With six or more protective factors, rates of absenteeism among students significantly decrease.

Second, perceptions of alcohol and marijuana use have a strong association with the actual behavior. This indicates that our community should continue to seek ways to educate our youth about the risks of alcohol and marijuana use and promote alcohol and drug prevention programs. AUY partners and the entire community must continue to spread the message – through media, social marketing, personal interactions, and education – that teen use of alcohol and drugs has negative health and social consequences. It is important that we begin shaping youth norms and perceptions so that alcohol and drug use is not seen as cool, but

potentially dangerous to their health and well-being; and that, conversely, youth engagement in the community is valued and promoted.

Third, it is clear from this study that there is no one “silver bullet” that will improve our youth’s likelihood of success. To effectively increase the protective factors that will help our youth make healthy choices and avoid risky behaviors, support will have to come from multiple sectors of the community. Four of the eight protective factors analyzed that had the strongest effect on decreasing the likelihood of risk behaviors and increasing school engagement were:

- 1) Having parents that talk to their children about school every day
- 2) Volunteering or helping in school or the community
- 3) Being involved in organized after school activities
- 4) Having caring and encouraging teachers

This tells us that we need to support and encourage parents to keep talking to their kids about school every day, all the way through high school. We need to provide and support plenty of opportunities – as organizations, individuals, neighborhoods, and businesses – for our youth to volunteer, help out and engage meaningfully in their schools and the community. We must ensure that our kids have multiple options for out-of-school activities, and the ability to access these activities. And, we must continue to support our teachers in providing caring and encouraging environments for their students.

But our efforts should not be limited to increasing just these four protective factors. As the study revealed, each one-unit increase in the number of protective factors reported by youth can significantly decrease the likelihood of engaging in risk behaviors and increase the likelihood of positive school outcomes from between 14% to 40%. Our call as a community is to seek ways to increase all of these protective factors for all of our youth; find ways to individually support kids, let them know they are not alone, and also find ways to create a community that lets kids know that they are valued and cared about. By truly coming together, we can help guide our youth to high school graduation and a successful, healthy future.

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