

State of Hawai'i, Department of Health, Alcohol and Drug Abuse Division

# THE HAWAI'I STUDENT ALCOHOL, TOBACCO, AND OTHER DRUG USE STUDY:

## 2007-2008 COMPREHENSIVE REPORT

Contract with the University of Hawai'i at Mānoa, John A. Burns School  
of Medicine, Department of Psychiatry, Research Division

Deborah Goebert, DrPH  
Associate Professor

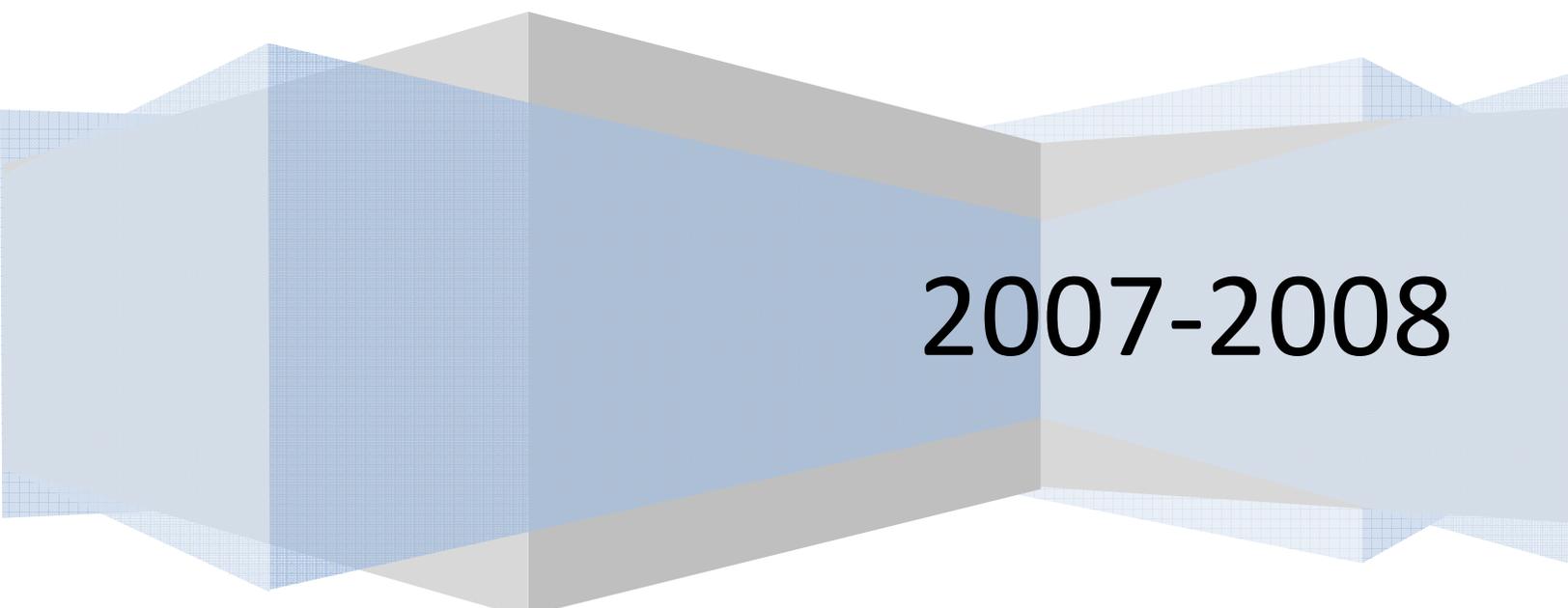
Stephanie Nishimura, PhD  
Assistant Professor

Jane Onoye, PhD  
Assistant Professor

Erin Boyd, BS  
Project Manager

Davis Rehuher, BS  
Assistant Project Manager

Paul Christensen, MA  
Research Associate



2007-2008

**Submitted by:**

University of Hawai'i at Mānoa

John A. Burns School of Medicine, Department of Psychiatry

1441 Kapiolani Boulevard, Suite 1803

Honolulu, HI 96814

This report has been prepared by the Research Division of the Department of Psychiatry, John A. Burns School of Medicine, University of Hawai'i at Mānoa for the Alcohol and Drug Abuse Division of the Hawai'i State Department of Health.

This report has been approved by ADAD for public dissemination.

**Suggested citation:**

Goebert, D., Nishimura, S., Onoye, J., Boyd, E., Rehuher, D. and Christensen, P. (2009). The Hawai'i Student Alcohol, Tobacco, and Other Drug Use Study: 2007-2008 Comprehensive Report. Final Report submitted to the State of Hawai'i, Department of Health, Alcohol and Drug Abuse Division, ASO Log #09-061. Honolulu, HI.

---

## ACKNOWLEDGMENTS

Keith Yamamoto, Virginialee Jackson, Susan Saka, and State Departments of Health and Education’s Adolescent Workgroup have been instrumental in planning and implementing the study. Keith Yamamoto, Virginialee Jackson, and the State Department of Health’s Epidemiology Workgroup also provided constructive review of the report.

We thank the following whose contributions made this project possible: June Andrade, Randy Bautista, Michelle Ching, Nolan Chung, Vanessa Cunanan, Danielle Giroux, Tara Hiramatsu, Rowena Kellough, Tiffinie Kiyota, Alyssa Lefkowitz, Tamara Luthy, Heather Mills, Linda Minamoto, Jessica Nakamura, Chia-Yin Naone, Eri Oura, Tim Unten, Devin Yamada, and Victor Yee.

We would also like to thank the staff and students of the participating schools, without whom this study could not have been successful.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>VI</b>
<b>STUDY OBJECTIVE</b> .....	<b>VI</b>
<b>DATA COLLECTION AND MANAGEMENT</b> .....	<b>VI</b>
PARENTAL CONSENT TO PARTICIPATE .....	VI
SURVEY ADMINISTRATION .....	VII
CONFIDENTIALITY AND ANONYMITY .....	VII
DATA MANAGEMENT.....	VIII
<b>ONSET AND PREVALENCE OF SUBSTANCES</b> .....	<b>VIII</b>
PREVALENCE OF LIFETIME SUBSTANCE USE .....	VIII
PREVALENCE OF 30 DAY SUBSTANCE USE .....	X
AGE AT FIRST USE OF SUBSTANCES .....	X
<b>RISK AND PROTECTIVE FACTORS</b> .....	<b>XI</b>
INDIVIDUAL DOMAIN.....	XI
PEER DOMAIN .....	XI
FAMILY DOMAIN .....	XII
SCHOOL DOMAIN .....	XIII
COMMUNITY DOMAIN.....	XIV
<b>TREATMENT NEEDS AND TREATMENT UTILIZATION</b> .....	<b>XV</b>
<b>CONCLUSIONS</b> .....	<b>XVI</b>
<b>CHAPTER 1: INTRODUCTION</b> .....	<b>1</b>
ADOLESCENT SUBSTANCE USE AS A PUBLIC HEALTH PROBLEM .....	1
THE 2007-2008 HAWAII STUDENT ALCOHOL, TOBACCO, AND OTHER DRUG (ATOD) USE STUDY.....	2
<i>Background and Significance</i> .....	3
<i>Study Objective</i> .....	5
<b>CHAPTER 2: METHODS</b> .....	<b>6</b>
SURVEY SAMPLE.....	6
SAMPLE DESCRIPTION.....	9
PROCEDURES.....	10
INSTRUMENT .....	13
MEASURES.....	14
<i>Demographic information</i> .....	14
<i>Measures of substance use</i> .....	15
<i>Accessibility of substances</i> .....	15
<i>Treatment needs</i> .....	15
<i>Substance dependence versus substance abuse</i> .....	16
<i>General Treatment Needs for Each Drug Category</i> .....	18
DEVELOPMENT OF RISK/PROTECTIVE SCALES FOR PREVENTION NEEDS .....	18

ANALYSES .....	18
LIMITATIONS.....	18
<b>CHAPTER 3: PREVALENCE AND ONSET OF YOUTH SUBSTANCE USE.....</b>	<b>22</b>
PREVALENCE AND FREQUENCY OF YOUTH SUBSTANCE USE .....	22
<i>Prevalence of lifetime substance use.....</i>	23
<i>Prevalence of substance use in the past 12 months.....</i>	28
<i>Prevalence of substance use in the past 30 days.....</i>	29
<i>Frequency of substance use in the past 30 days.....</i>	34
<i>Comparison to nationwide prevalence reports.....</i>	41
ONSET OF YOUTH SUBSTANCE USE.....	45
<i>Age at First Use of Substances.....</i>	47
CONCLUSION .....	53
<b>CHAPTER 4: RISK AND PROTECTIVE FACTORS .....</b>	<b>55</b>
INTRODUCTION .....	55
<i>Definitions of Risk and Protective Factors .....</i>	55
<i>Overview of Risk and Protective Factor Domains.....</i>	56
<b>INDIVIDUAL DOMAIN .....</b>	<b>58</b>
INTRODUCTION .....	58
EARLY INITIATION OF PROBLEM BEHAVIORS.....	65
ANTISOCIAL BELIEFS .....	71
ANTISOCIAL BEHAVIOR.....	80
RISK TAKING AND SENSATION SEEKING .....	86
REBELLIOUSNESS .....	92
DELINQUENCY.....	98
VALUES ABOUT SUBSTANCE USE.....	104
PERCEIVED RISK OF HARM FROM ATOD USE.....	110
CONCLUSION .....	120
<b>PEER DOMAIN .....</b>	<b>122</b>
INTRODUCTION .....	122
PEER SUBSTANCE USE .....	126
PEER ANTISOCIAL OR DEVIANT BEHAVIOR.....	133
PEER VALUES ABOUT SUBSTANCE USE .....	141
CONCLUSION .....	150
<b>FAMILY DOMAIN .....</b>	<b>152</b>
INTRODUCTION .....	152
EXPOSURE TO FAMILY SUBSTANCE USE .....	156
POOR FAMILY SUPERVISION .....	165
LACK OF PARENTAL SANCTIONS FOR ANTISOCIAL BEHAVIORS.....	173
PARENTAL ATTITUDES .....	179
FAMILY ATTACHMENT.....	186

FAMILY OPPORTUNITIES FOR POSITIVE INVOLVEMENT.....	191
FAMILY REWARDS FOR POSITIVE INVOLVEMENT.....	197
CONCLUSION .....	205
<b>SCHOOL DOMAIN .....</b>	<b>206</b>
INTRODUCTION .....	206
ACADEMIC PERFORMANCE.....	211
EDUCATIONAL ASPIRATIONS.....	217
SCHOOL COMMITMENT.....	224
SCHOOL OPPORTUNITIES FOR POSITIVE INVOLVEMENT.....	233
SCHOOL REWARDS FOR POSITIVE INVOLVEMENT.....	240
CONCLUSION .....	245
<b>COMMUNITY DOMAIN .....</b>	<b>247</b>
INTRODUCTION .....	247
COMMUNITY DISORGANIZATION .....	252
LAWS AND NORMS FAVORABLE TO DRUG USE .....	259
PERCEIVED AVAILABILITY OF DRUGS .....	266
EXPOSURE TO COMMUNITY ATOD Use.....	274
OPPORTUNITIES FOR PROSOCIAL COMMUNITY INVOLVEMENT .....	281
REWARDS FOR PROSOCIAL COMMUNITY INVOLVEMENT .....	288
CONCLUSION .....	294
<b>CHAPTER 5: TREATMENT NEEDS AND TREATMENT UTILIZATION.....</b>	<b>296</b>
INTRODUCTION .....	296
TREATMENT NEEDS .....	298
TREATMENT UTILIZATION .....	300
CONCLUSION .....	314
<b>CHAPTER 6: CONCLUSION.....</b>	<b>316</b>
ONSET AND PREVALENCE.....	316
RISK AND PROTECTIVE FACTORS .....	316
TREATMENT .....	319
<b>REFERENCES .....</b>	<b>321</b>
<b>APPENDIX: THE 2007-2008 HAWAI'I STUDENT ALCOHOL, TOBACCO, AND OTHER DRUG USE SURVEY .....</b>	<b>A1</b>

# EXECUTIVE SUMMARY

## STUDY OBJECTIVE

The primary objective of this study was to provide a needs assessment of middle and high school students in order to build upon Hawai'i's past efforts in youth substance use research. The report provides first an assessment of the nature and scope of tobacco, alcohol, and other drug use among participating school students in grades 6, 8, 10, and 12 throughout the state of Hawai'i. Additionally, the report contributes to risk and protective factor data that the State of Hawai'i and other organizations can use for planning evaluation, prevention, and treatment programs.

## DATA COLLECTION AND MANAGEMENT

Data were gathered from 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students at participating public, charter, and one private school across Hawai'i using standardized survey methods. This approach was similar to that used in the Monitoring the Future study and other major studies of adolescent substance use (Retrieved June 8<sup>th</sup>, 2009 from <http://www.monitoringthefuture.org/>). Data were collected on prevalence rates of alcohol, tobacco and other drugs among Hawai'i's students. The data will also allow comparison between Hawai'i and other states and determine how Hawai'i's needs with regard to combating adolescent substance use differ from the needs of the rest of the nation.

The risk and protective factors for substance use among students were measured using a scannable survey with questions selected for their proven reliability in previous studies. The treatment needs were assessed using survey questions modeled on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> edition (DSM-IV; American Psychiatric Association, 1994).

The DSM-IV is the standard text for defining mental disorders, including substance use. The DSM-IV criteria for substance abuse reflect the consensus developed by researchers on patterns of behavior and conduct that constitute substance dependence and substance abuse. For the 2007-2008 Hawai'i Student ATOD Survey, the DSM-IV was used to differentiate between the diagnosis for dependence and that for abuse.

## PARENTAL CONSENT TO PARTICIPATE

The Department of Psychiatry worked with the Hawai'i Department of Health's Alcohol and Drug Abuse Division (ADAD), key individuals from other Department of Health adolescent surveys, and the Hawai'i

Department of Education (DoE) to develop a logistical plan for the distribution and collection of parental consent forms and the administration of the survey. The study was subject to DoE's policy, which requires active written parental consent for survey participation.

During teacher training sessions, the consent materials were given to the school liaison and/or teachers who had classes participating in the survey. The classroom teacher distributed the consent material to the students. Instructions were provided to the classroom teachers on how to mark their class rosters to indicate students who obtained parental consent. Students were told that they may refuse to participate in all or part of the survey and that the information they provided was anonymous and confidential. The purpose of the study, the importance of the survey, and the nature of the questionnaire items were described both verbally and on the survey instrument.

### SURVEY ADMINISTRATION

---

An email was sent to principals in August 2007, introducing the research team and requesting that they provide staff with the name of their designated school liaison. School liaisons were contacted through a phone call or email by a staff member to briefly explain the important role of school liaisons and to schedule a survey training session with study staff, participating teachers, and school liaisons.

### CONFIDENTIALITY AND ANONYMITY

---

Because of the extremely sensitive nature of the information collected in this study and the need for accurate and uninhibited reports by the students, a number of steps were taken to ensure confidentiality and anonymity. Confidentiality was maintained by keeping private the list of schools and classes participating in the study, use of a private fax line, and disposal of any private information.

Student names or other identifying information were not placed on surveys. On the day of the survey, teachers were instructed to explain to students the nature of the study, the importance and value of the survey, and the steps that would be taken to assure anonymity. Anonymity was explained as follows: (1) through the absence of identifying information on the survey (2) by teachers remaining at the front of the room during survey completion, and (3) by the placement of each survey in an envelope, which was sealed by one of the students in the classroom and delivered to the school liaison. The students were told that the envelope will only be opened by the researchers at the University of Hawai'i. Since the surveys only contained school identification, there was no way to connect individual surveys to specific students. The surveys were in scannable form and were processed at the Department of Psychiatry. Data were protected on computers through security codes. Access to the data was limited to the principal researchers, ADAD and connecting parties, and individuals given permission by ADAD.

## DATA MANAGEMENT

---

To minimize students incorrectly filling out the surveys, steps were taken to prevent this problem from occurring. First, the surveys contained clear instructions and examples of appropriate and inappropriate ways to mark answers. These instructions were repeated by the classroom teacher after the surveys were handed out. Additionally, the research staff examined each survey prior to scanning to ensure that answers were marked appropriately. If a survey contained inappropriate markings (e.g., circled answers rather than blackened responses) a staff member corrected the error prior to analyzing the data on the survey. In addition, the scanning process identified any surveys/responses that could not be scanned. These were checked for correctable errors and entered manually by survey staff. The result was a clean, edited data set for analyses.

## ONSET AND PREVALENCE OF SUBSTANCES

### PREVALENCE OF LIFETIME SUBSTANCE USE

---

- *Grade:* Lifetime use of most substances increased as the students moved through the school system.
  - Lifetime substance use rates in Hawai'i were highest for alcohol and approximated those for the nation.
  - This pattern was repeated for substances including cigarettes, marijuana, prescription drugs, and illicit drugs (e.g. hallucinogens, cocaine, methamphetamine, heroin, and tranquilizers). Much higher lifetime prevalence rates for 12<sup>th</sup> graders for all substances were reported.

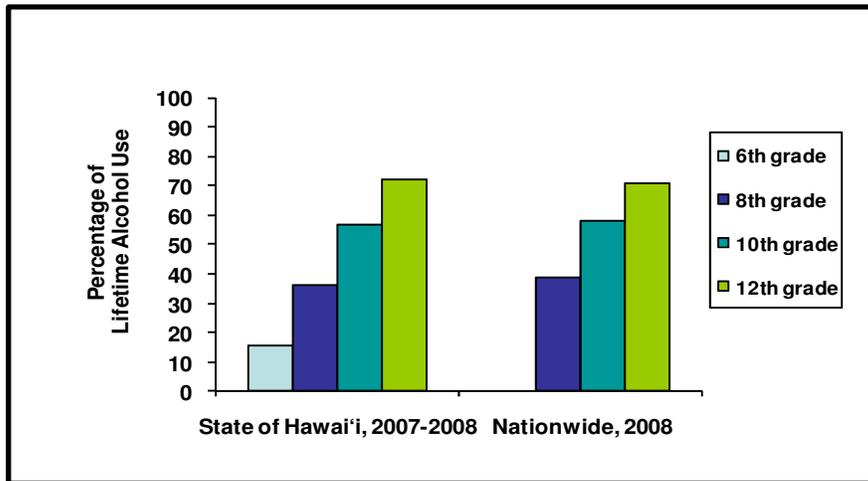


Figure i.a. Hawai'i and Nationwide Lifetime Alcohol Use by Grade (in percentages)

- **Gender:** Higher percentages of females than males reported use included cigarettes (females 22.2%, males 19.1%), alcohol (females 42.5%, males 37.6%), and prescription drugs (females 5.3%, males 4.7%). Comparable rates of marijuana use were found (males 17.6%, females 17.3%). Males reported slightly higher rates for illicit drugs (males 5.0%, females 4.1%).
- **Ethnicity:** Native Hawaiians, Caucasians, students with 2 or more ethnicities, and students of Other ethnicities reported the highest rates of lifetime substance use.
  - 29.4% of Other students, 27.7% of Native Hawaiians, and 22.2% of Caucasians reported having smoked cigarettes. In addition, 27.6% of Pacific Islanders and 27.3% of students who reported two or more ethnicities also reported smoking cigarettes.
  - Alcohol was the most widely used substance, with 49.5% of students of Other ethnicities, 49.4% of students of 2 or more ethnicities, 47.5% of Native Hawaiian, 47.4% of Caucasian, 38.5% of Japanese, 36.7% of Filipino, and 31.6% of Pacific Islander students reported use of alcohol in their lives.
  - Lifetime marijuana use was reported by 26.0% of Caucasians, 25.4% of Native Hawaiians, and 25.4% of students of Other ethnicities.
  - Use of prescription drugs was reported by 9.2% of Caucasians and 5.1% of Native Hawaiians.

---

## PREVALENCE OF 30 DAY SUBSTANCE USE

---

- Grade: Differences in past 30 day substance use prevalence rates were found between students in Hawai'i and students throughout the nation.
  - For past 30 day cigarette use, 10<sup>th</sup> (Hawai'i 9.0%, nationwide 12.3%) and 12<sup>th</sup> (Hawai'i 15.2%, nationwide 20.4%) grade students in Hawai'i reported lower rates.
  - For past 30 day alcohol use, 8<sup>th</sup> grade students in Hawai'i reported slightly higher prevalence rates (Hawai'i 18.4%, nationwide 15.9%). However, comparable rates were found for 10<sup>th</sup> grade students and slightly lower rates for 12<sup>th</sup> grade students in Hawai'i (Hawai'i 40.8%, nationwide 43.1%) compared to the nation.
  - For past 30 day marijuana use, slightly higher rates were reported by students in Hawai'i compared to the nation (8<sup>th</sup> grade: Hawai'i 7.0%, nationwide 5.8%; 10<sup>th</sup> grade: Hawai'i 13.7%, nationwide 13.6%; 12<sup>th</sup> grade: Hawai'i 20.5%, nationwide 19.4%).
- Gender:
  - For past 30 day use by gender, higher percentages of females than males reported using substances for alcohol, cigarettes, and prescription drugs while males reported more marijuana use and other illicit drug use than females.
- Ethnicity:
  - For past 30 day substance use by ethnicity, Caucasians and Native Hawaiians reported the highest percentages of substance use. For example, 10.2% of Native Hawaiians, 9.2% of Caucasians, and 5.6% of Filipinos reported smoking cigarettes.
  - For alcohol, 30.7% of Native Hawaiians, 27.6% of students of Other ethnicities, 27.1% of students of 2 or more ethnicities, 25.5% of Caucasians, 18.0% of Japanese, 17.4% of Filipinos, and 16.4% of Pacific Islanders reported drinking alcohol.

---

## AGE AT FIRST USE OF SUBSTANCES

---

- The use of cigarettes, alcohol, and marijuana were more likely to be initiated before the age of 14 for both males and females, with the exception of prescription drug use.
- Alcohol had the highest reported percentages as a substance that students used when they tried a substance for the first time.

## RISK AND PROTECTIVE FACTORS

### INDIVIDUAL DOMAIN

- As students get older they were more likely to accept values that favor antisocial behavior, risk taking and sensation seeking behavior, rebelliousness, and substance use.
- For students who engaged in early initiation of problem behaviors (which included questions related to binge drinking, suspension or expulsion from school, arrest, and attacking someone), there was a clear relationship with substance abuse, and dependence.

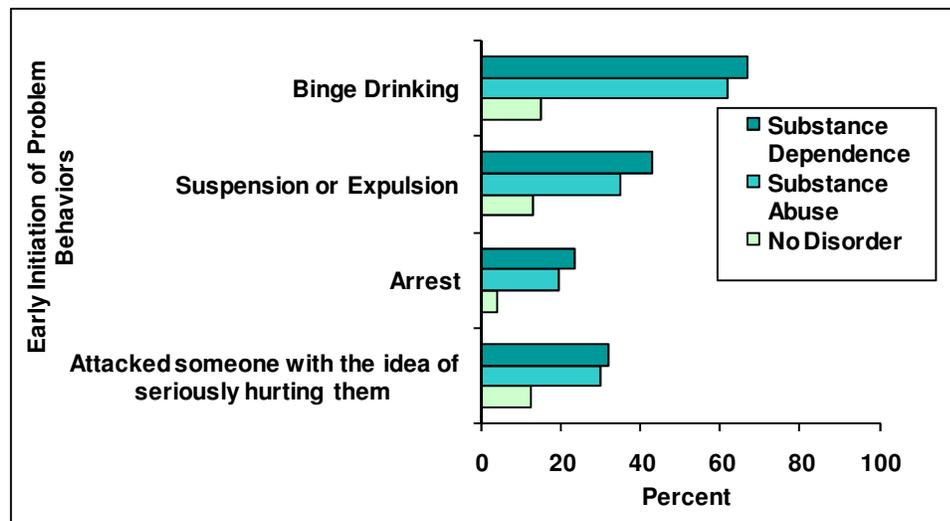


Figure i.b. Early Initiation of Problem Behaviors by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

### PEER DOMAIN

- Risk factors such as peer substance use and antisocial behavior can vary by grade, gender, and ethnicity, with the largest increase occurring between elementary and middle school.
- Peer substance use and peer approval of substance use put students at a greater risk for substance use and substance dependence.

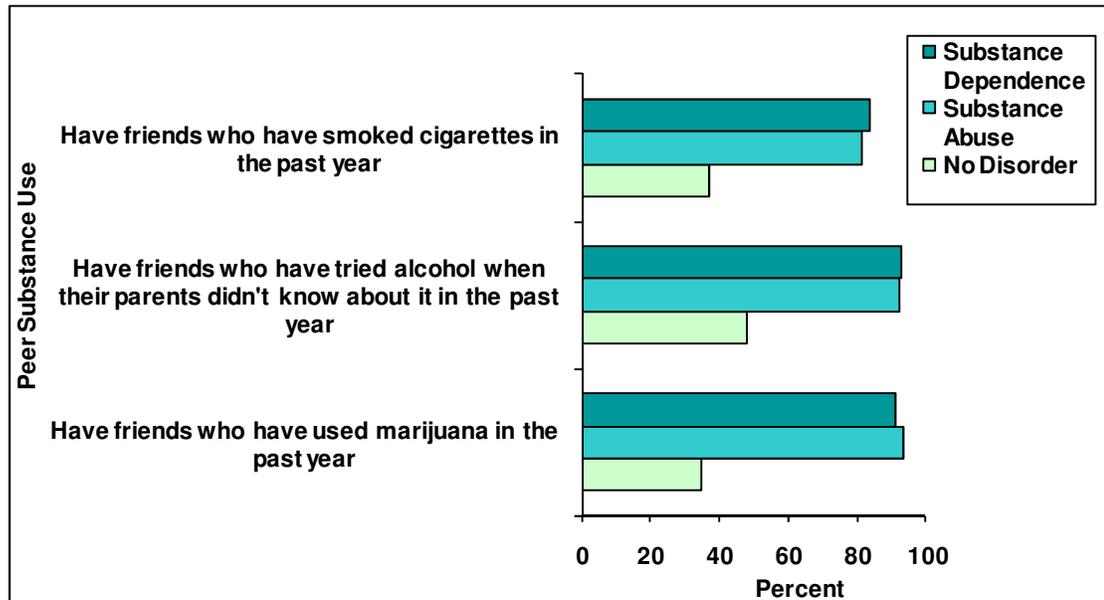


Figure i.c. Peer Substance Use by Student Substance Abuse and Dependence, 2007 (Weighted Data)

## FAMILY DOMAIN

- Overall, risk factors within the family domain such as exposure to family substance use, poor family supervision, lack of parental sanctions, and parental attitudes favorable to substance use, had stronger associations with substance use than protective factors such as family attachment or family opportunities and rewards.
- Students with substance abuse or dependence were significantly more likely to indicate that they had been exposed to family alcohol, tobacco and other drug use.

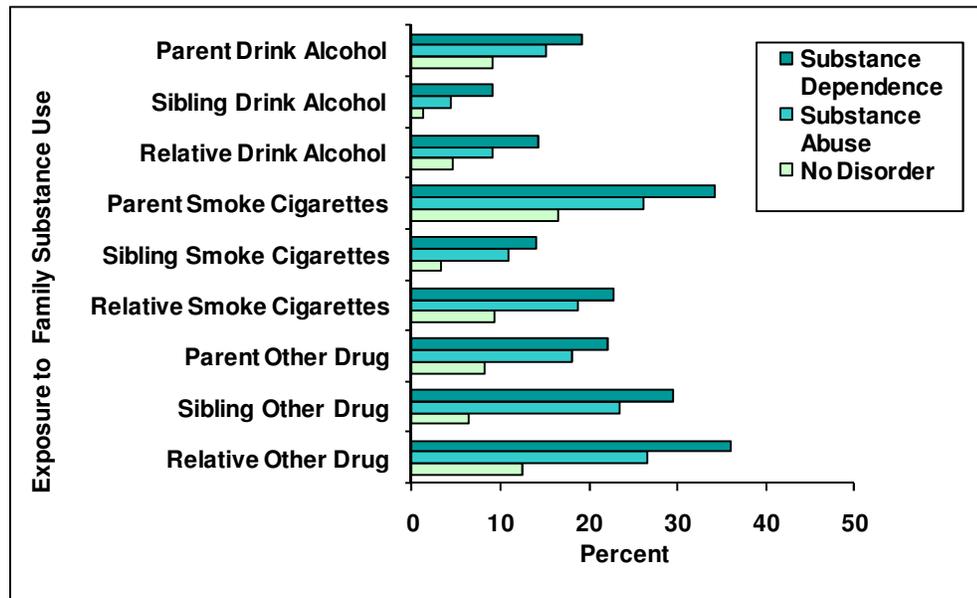


Figure i.d. Exposure to Family ATOD Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

## SCHOOL DOMAIN

- While none of the factors individually are strongly associated with substance use, a combination of these factors may contribute to putting adolescents at risk, especially if they do not feel that their school work is meaningful or important or if they are not enjoying school, which often occurs for youth as they transition from elementary to middle school.
- School protective factors varied by grade level, with educational aspirations for higher education appearing to act, suggesting it may serve as a general mild protective buffer for a majority of youth.
- Students with substance dependence and abuse reported less teacher praise for working hard in school and fewer times when the teacher notices and tells students that they are doing a good job.

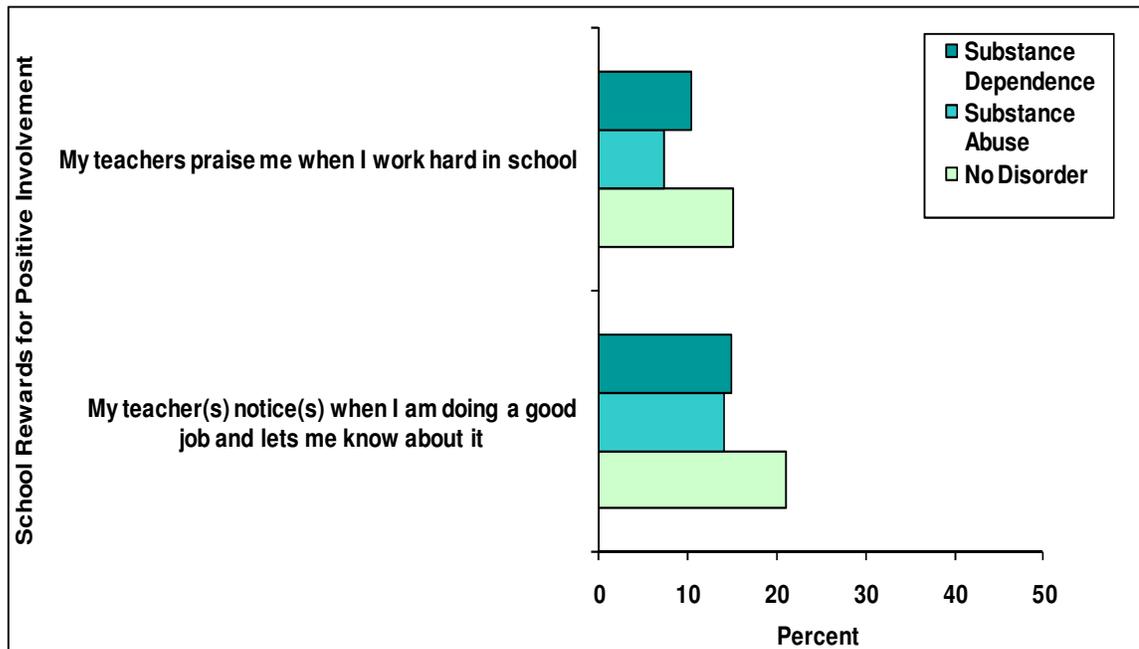


Figure 4d.28. School Rewards for Positive Involvement by Student Substance Abuse and Dependence, 2007 (Weighted Data)

## COMMUNITY DOMAIN

- Overall, older students reported higher rates of community risk factors (e.g., community disorganization, belief students would *not* get caught by the police if drinking alcohol or smoking marijuana, perceived availability of drugs, and exposure to community ATOD use).
- Overall, students with a substance disorder were more likely to have higher prevalence rates of risk factors. For example, students with substance abuse or dependence were significantly more likely to indicate community disorganization.
- Interestingly, both students with a substance disorder and students with no substance disorder were similarly aware of opportunities and rewards for prosocial community involvement.
- Although a large number of students reported that it would probably be impossible to obtain drugs (e.g., cocaine, methamphetamine, hallucinogens, “club drugs,” and prescription drugs), a significant amount of students reported that it would be easy to obtain gateway drugs such as cigarettes (41.2%), alcohol (46.0%), and marijuana (31.5%).

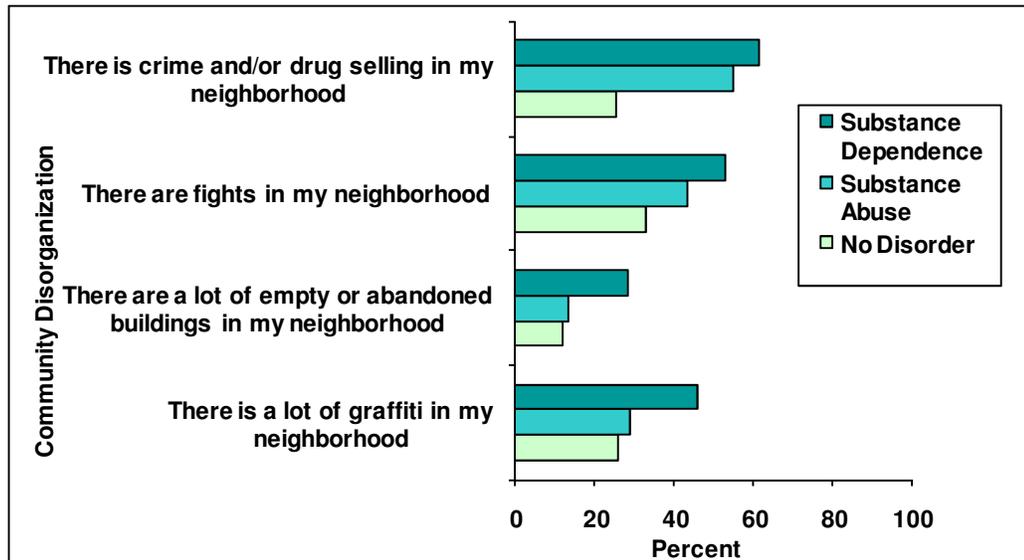


Figure i.e. Community Disorganization by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

## TREATMENT NEEDS AND TREATMENT UTILIZATION

- Overall, about one in 13 students met criteria for substance abuse or dependence. That approximates two students in every class. The rates of students meeting criteria for a substance abuse or dependence diagnosis were the highest for females (8.3%) and 12<sup>th</sup> graders (17.8%).
- Older students report higher rates of substance use disorders with rates increasing progressively from 6<sup>th</sup> grade to 12<sup>th</sup> grade.
- Rates for 12<sup>th</sup> grade students in Hawai'i that met criteria for substance abuse or dependence were much higher than national rates, which are approximately 10% of the adolescent population.
- Aside from students of two or more ethnicities, Caucasian (11.5%) and Native Hawaiian (11.1%) students reported the highest rates of substance abuse and dependence.
- Results also showed that of the students who met criteria for substance abuse or dependence, the vast majority (73.0%) did not receive treatment.

- Additionally, 8.4% of students did not meet criteria for a substance disorder but thought they needed help with cigarettes, alcohol, or drug use yet did not receive treatment.

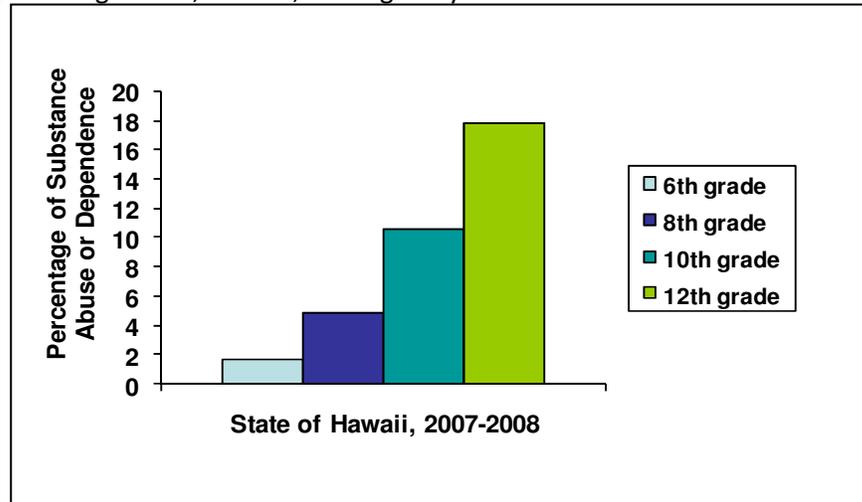


Figure i.f. Diagnosis for Abuse or Dependence of any Substance Based on DSM-IV Criteria, by Grade Level

## CONCLUSIONS

- Based on the Hawai'i Student ATOD Study findings, the "gateway drugs" (cigarettes, alcohol, and marijuana) were the substances that students were more likely to use prior to the age of 14. Therefore, it is extremely important for prevention efforts to focus on students younger than 14 years of age.
- This study found that the rate of prescription drug use more than doubled for 12<sup>th</sup> graders in comparison to the rates reported for 10<sup>th</sup> graders. Given that national rates for prescription drug use has escalated, it will be important to continue to monitor the use of prescription drugs for youth in the state of Hawai'i.
- Early initiation of binge drinking, peer substance use, peer approval of substances, family exposure to substances, unclear rules related to substance use, and perceived availability of substances were found to be important factors associated with youth substance abuse and dependence. These findings indicate that peer and family domains are important factors to address when developing prevention and intervention programs for youth.
- There is more than a three-fold increase in the number of students who report binge drinking from 6<sup>th</sup> to 8<sup>th</sup> grade. Based on this finding, it is extremely important that prevention and intervention programs address binge drinking as early as elementary school.

- Given that prevention and intervention approaches are often school-based, it is critical to consider the risk and protective context for designing, implementing, and evaluating prevention and intervention programs for effectiveness and outcomes.
- Nearly 18% of 12<sup>th</sup> graders are in need of treatment in Hawaii. Additionally, 25.8% of students who met criteria for a substance use diagnosis and thought they needed treatment but did not receive it. Intervention and treatment services are not adequately addressing the gap.

# CHAPTER 1: INTRODUCTION

## ADOLESCENT SUBSTANCE USE AS A PUBLIC HEALTH PROBLEM

---

This report summarizes the findings from the 2007-2008 Hawai'i Student Alcohol, Tobacco, and Other Drug (ATOD) Use Survey. The survey was administered to 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students at participating public and charter schools, and one private school throughout Hawai'i. The study is the result of a joint effort between the State of Hawai'i Department of Health, Alcohol and Drug Abuse Division (ADAD) and the Department of Psychiatry (DoP), John A. Burns School of Medicine at the University of Hawai'i at Mānoa. Funding for this study was provided by the Alcohol and Drug Abuse Division of the State of Hawai'i, Department of Health through the Substance Abuse Prevention and Treatment (SAPT) Block Grant.

Individuals typically begin to use and experiment with substances in adolescence with some youth starting even earlier. Youth substance use is a public health concern, with enormous social and financial costs to the individual, community, and society. A large amount of resources are spent to combat the problem of youth substance use, which includes both prevention and treatment efforts. For example, \$60.3 billion was spent, nationally, on problems and costs (e.g., medical care and associated problems) related to underage drinking in 2005 (Pacific Institute for Research and Evaluation [PIRE], 2007).

In 2005, the total costs associated with underage drinking in Hawai'i totalled \$215 million, of which \$89 million was accounted for by medical care and loss of work (PIRE, 2006). Further, adolescent drinkers consumed 7.2% of the alcohol sold in Hawai'i, accounting for \$66 million in sales and generating \$32 million in profits to alcohol companies (PIRE, 2006).

The public has been made aware of the dangers associated with substance use through public service announcements. One example was the television campaign entitled "This is Your Brain on Drugs" that aired during the late 1980's warning about the dangers of drug use. The campaign used an egg to

depict a person's brain and a hot frying pan to represent drug use. The egg was cracked and dropped into the frying pan to represent a person's brain being "fried" by drugs. The Partnership for a Drug Free America's website states that this advertisement is the most widely-shown television message they have created. However, a CNN online report from 2000 notes that some students were skeptical of the advertisement's message, calling it a "scare tactic" (Alexander, 2000, ¶7). Regardless, the television campaign was an example that demonstrated the difficulties and challenges faced when confronting the problem of adolescent substance use.

Between 1998 and 2004, the Office of National Drug Control Policy (ONDCP) ran a national marketing campaign to establish, strengthen, and reinforce anti-drug attitudes and beliefs among teenagers and their parents by using available media, including television, radio, print, and Internet outlets (Office of National Drug Control Policy, 2008). Studies on the effectiveness of the advertising campaign reported mixed results. One evaluation showed that teens in a school-based drug prevention program paired with exposure to the campaign were less likely to smoke marijuana than teens that were only exposed to the prevention program (Longshore, Ghosh-Dastidar, & Ellickson, 2006). However, another study that surveyed adolescents in their homes over a 4-year period found that while the campaign was able to achieve high levels of exposure for its messages, it did not have an effect on adolescent marijuana use (Hornik, Jacobsohn, Orwin, Piesse, & Kalton, 2008). The funding for this campaign was appropriated by the U.S. Congress and cost nearly \$1 billion. Additionally, in early 2008 the ONDCP launched a \$14 million media campaign to educate teens and parents about teen prescription drug use (Office of National Drug Control Policy, 2008). These numbers do not reflect additional costs that state or local agencies may have spent to address local drug prevention programs in their communities.

#### THE 2007-2008 HAWAII' I STUDENT ALCOHOL, TOBACCO, AND OTHER DRUG (ATOD) USE STUDY

The 2007-2008 Hawai'i Student ATOD Survey is part of an ongoing project to guide prevention programs and treatment policy for adolescent substance use in Hawai'i. Data for this report was collected

from students in grades 6, 8, 10, and 12 across the State, using a risk and protective factors approach, to report levels of substance use and treatment needs in Hawai'i. Specifically, this report's data illustrates the prevalence rates of alcohol, tobacco, and other drug use among Hawai'i's adolescents and provides information on risk and protective factors associated with adolescent substance use. Finally, as a side note, although the term "sex" is normally used to refer to the biological classification of male versus female, for purposes of this report, the term "gender" has been used to refer to sex.

## BACKGROUND AND SIGNIFICANCE

Beginning with a pilot study in 2006, the Department of Psychiatry, John A. Burns School of Medicine at the University of Hawai'i at Mānoa collaborated with the State of Hawai'i, Department of Health to assess the prevalence of drug use, treatment needs, and related risk and protective factors associated with adolescent substance use for selected schools on the island of O'ahu. The pilot study was conducted during the 2006-2007 school year, followed by the statewide survey administered in 2007-2008 among students in grades 6, 8, 10, and 12. The Hawai'i Student ATOD Survey is part of an ongoing effort that started in 1987. The study was conducted until 1993, by the Hawai'i State Department of Education (DoE) and the Northwest Regional Educational Laboratory. From 1996-2003 the survey was administered about every two years by the State of Hawai'i Department of Health, Alcohol and Drug Abuse Division (ADAD) in collaboration with the University of Hawai'i Speech Department. Since 1996, the survey has been administered to participating students within grades 6, 8, 10, and 12 (with the 2003 administration including students in grades 6-12) who have written parental consent to take part in the study.

The 2000 survey began assessing prevention needs utilizing the risk and protective factors framework, as recommended by the Center for Substance Abuse Prevention (Pearson, 2004). Research on risk and protective factors have focused on multiple domains, notably family, school, community, peer, and individual (Newcomb & Felix-Ortiz, 1992; Hawkins, Catalano, & Miller, 1992; Newcomb, 1995; Scheier, Newcomb, & Skager, 1994). Risk factors in this report are defined as "those characteristics, variables, or

hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected at random from the general population, will develop a disorder” (Mrazek & Haggerty, 1994). Protective factors are defined as characteristics that reduce the “likelihood of problem behavior either directly or by mediating or moderating the effect of exposure to risk factors” (Arthur et al., 2002). Risk factors are often the precursors to drug and alcohol problems and protective factors are often the insulating components that minimize risk by improving coping, adaptation, and individual competence to resist temptation to use substances.

Unique to this study is an approach that does not emphasize one risk or protective factor over another. The position of this study is that youths’ vulnerability to use and abuse various substances is the result of numerous risk factors to which an adolescent is exposed, and no single predictor can best explain a given behavior. Conversely, protective psychosocial factors can directly limit or reduce ATOD involvement (Newcomb & Felix-Ortiz, 1992) or can act as a buffer to moderate the association between risk factors and ATOD use (Newcomb & Felix-Ortiz, 1992; Institute of Medicine, 1994).

The need for prevention research and interventions is formidable as substance use or abuse has been causally related to depression, suicide, teen pregnancy, delinquency, and violence among adolescents (Dryfoos, 1990). Substance use has also been shown to be associated with conduct problems (Mason, Hitchings, Spoth, 2008). Reducing risk and enhancing protection across these domains could positively impact a wide range of behavioral outcomes.

Risk factors may not need to be directly manipulated. Instead they may be moderated by certain protective factors within the same domain. These moderating protective factors may operate directly on a previous risk factor or indirectly by mediating the relationship between the factor and a potential outcome (Institute of Medicine, 1994). Identified protective factors can inhibit drug use among those at risk and prevention approaches may mediate or moderate the effects of exposure to risk. Protection against ATOD use is associated with rewards to adolescents for pro-social involvement in family, school, and community

domains as well as the development of effective social skills among peers and bonding with significant adults (Hawkins et al., 1992; Rutter, 1987; Werner, 1989). Examining protective factors reveals how these factors operate to simply reduce the number of individual related risk factors (Sher, 1994). Consequently, protective factors are critical when risk factors for adolescent ATOD use are not amenable to change (Hawkins et al., 1992). Put simply, strengthening protective factors is a viable means of working with youth who are at a high risk for substance use.

As this report will document, prevention is not enough. Substance use among youth in Hawai'i has remained steady. Nationally, the latest findings from an annual national survey on adolescent behaviors and attitudes about substance use and abuse in the United States--the 2008 Monitoring the Future study--indicated that by the end of high school in 2007, 47% of teenagers have tried illicit drugs, 72% have consumed alcohol (defined as more than just a few sips), and 46% have tried cigarettes (Johnston, O'Malley, Bachman & Schulenberg, 2008). Moreover, by the eighth grade, 19% of students have tried illicit drugs, 39% have consumed alcohol, and 22% have tried cigarettes. Rates of substance abuse and dependence among youth approach those for adults. Given this demonstrated need, information on the nature and availability of adolescent substance abuse treatment programs has been increasing over the last decade. Although still limited in number, promising practices have been identified.

## STUDY OBJECTIVE

The primary objective of this study was to provide a needs assessment of middle and high school students in order to build upon Hawai'i's past efforts in youth substance use research. The report provides an assessment of the nature and scope of tobacco, alcohol, and other drug use among participating school students in grades 6, 8, 10, and 12 throughout the state of Hawai'i. Additionally, the report contributes to risk and protective factor data that the State of Hawai'i and other sources can use to assist in planning evaluation, prevention, and treatment programs.

## CHAPTER 2: METHODS

The Hawai'i Student ATOD Survey was administered during the 2007-2008 school year to public, charter, and private school students in grades 6, 8, 10, and 12. Overall, 132 selected schools participated in the survey, which included 118 public schools, 13 charter schools, and one private school. Only students with permission (parental or self if 18 years of age or older), who agreed to take part in the study and filled out the anonymous survey, were included in the sample.

### SURVEY SAMPLE

---

Public and charter schools were selected to participate in the survey to be representative of school complex information. According to the Department of Education (DoE), a school complex consists of a high school and its elementary and middle/intermediate feeder schools. Although charter schools are not governed by the DoE, they are included within a school complex based on geographic location and support services provided by a school complex (DoE, 2009). Schools with enrollments of at least 100 students in the 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, or 12<sup>th</sup> grades were eligible to participate in the survey.

Four large private schools within the State of Hawai'i were approached to participate in the survey, with only one of the schools agreeing to participate. The private school only included 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students.

Table 2.1 provides a comparison of participating schools within the Hawai'i Student ATOD Study and schools approached to participate in the survey. For the purposes of this study, schools were selected to participate based on whether the schools had students in the 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and/or 12<sup>th</sup> grades. Elementary schools within the state of Hawai'i include students in grades K-5 or K-6. Middle schools include students in 6<sup>th</sup>-8<sup>th</sup> grade, while intermediate schools include students in 7<sup>th</sup> and 8<sup>th</sup> grade. High schools include 9<sup>th</sup>-12<sup>th</sup> grade students, although some schools combine elementary, intermediate and/or high school students on the same campus (DoE, 2009).

	Number of Schools Approached to Participate in ATOD Survey	Number of Schools that Participated in ATOD Survey	Percentage of Schools Approached that Participated in ATOD Survey	Number of Schools Selected for the ATOD Sample	Percentage of Schools Selected for ATOD Sample
Public	125	119	95.2%	118	94.4%
Charter	19	15	78.9%	13	68.4%
Private	4	1	25.0%	1	25.0%

School class lists were provided to the ATOD study staff in order for classes to be randomly selected. The ideal class size was considered to be 20 or more students. Approximately 4-5 classes were selected from each grade level (depending on class size), with more classes being selected when a class size was less than ideal. The survey participation rate for each grade within each district is provided in Table 2.2. Please note that the table only includes figures from public and charter schools. Table 2.2 does not include private school students who took part in the study or students who were excluded from analyses for other reasons such as a missing parental consent.

	Total Number of Students Who Participated in the Survey	Total Number of Students Approached to Participate in the Survey	% of Students Who Participated in the Survey of Those Who Were Approached
<b>Central District</b>			
6th Grade	246	374	65.8%
8th Grade	289	428	67.5%
10th Grade	200	358	55.9%
12th Grade	231	386	59.8%
<b>Honolulu District</b>			
6th Grade	403	542	74.4%
8th Grade	357	580	61.6%
10th Grade	198	443	44.7%
12th Grade	264	502	52.6%
<b>Leeward District</b>			

<b>Table 2.2: 2007-2008 Hawai'i Student ATOD Survey Participation Rate by District and Grade</b>			
	<b>Total Number of Students Who Participated in the Survey</b>	<b>Total Number of Students Approached to Participate in the Survey</b>	<b>% of Students Who Participated in the Survey of Those Who Were Approached</b>
6th Grade	460	637	72.2%
8th Grade	208	427	48.7%
<b>Leeward District (cont)</b>			
10th Grade	173	363	47.7%
12th Grade	154	345	44.6%
<b>Windward District</b>			
6th Grade	187	316	59.2%
8th Grade	220	363	60.6%
10th Grade	226	376	60.1%
12th Grade	189	320	59.1%
<b>City &amp; County of Honolulu</b>			
6th Grade	1,296	1,869	69.3%
8th Grade	1,074	1,798	59.7%
10th Grade	797	1,540	51.8%
12th Grade	838	1,553	54.0%
<b>Hawai'i County</b>			
6th Grade	483	771	62.6%
8th Grade	367	605	60.7%
10th Grade	313	725	43.2%
12th Grade	377	727	51.9%
<b>Kauai County</b>			
6th Grade	170	249	68.3%
8th Grade	144	225	64.0%
10th Grade	95	142	66.9%
12th Grade	170	234	72.6%
<b>Maui County</b>			
6th Grade	320	519	61.7%
8th Grade	252	446	56.5%
10th Grade	302	496	60.9%
12th Grade	310	543	57.1%
<b>Statewide</b>			
6th Grade	2,269	3,408	66.6%
8th Grade	1,837	3,074	59.8%
10th Grade	1,507	2,903	51.9%
12th Grade	1,695	3,057	55.4%
Statewide Total	7,308	12,442	58.7%

For a subset of 53 schools (not including two schools who refused to participate in the study), class selection was first determined by whether or not the school was selected to participate in the Hawai'i

Youth Risk Behavior Survey and the Hawai'i Youth Tobacco Survey, in addition to the Hawai'i Student ATOD Survey. In cases where a school was selected to participate in all three surveys, random selections for the Hawai'i Student ATOD Survey were made after sample selection occurred for the Hawai'i Youth Risk Behavior Survey and the Hawai'i Youth Tobacco Survey.

## SAMPLE DESCRIPTION

---

Overall, a total of 14,418 students (12,442 in public and charter schools; 261 in one private school; and 1715 omitted) were approached to participate in the survey and 8,679 students participated in survey administration. Classes in which the number of permission forms did not match or exceed the number of completed surveys were dropped from the sample to avoid inclusion of data provided by students who did not have parent permission to participate in the survey. In total, 87 classes or 1,423 (9.9%) students were omitted from the survey due to a lack of parent permission forms. Another 239 students were dropped from the data because they reported being in the seventh (9), ninth (49), or eleventh grades (181). Three students selected multiple grades and 53 did not select a grade level at all; these students were not included in the data set as we could not determine whether they were in the target sample of 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade.

Ethnicity was determined using the survey question asking students which ethnic group describes them best. Although instructions informed students they were to only choose one response to this question, many students chose more than one response. These students were grouped together into the group known as "2 or more ethnicities." Due to relatively small sample sizes for some ethnicities, certain groups were combined. Students who reported that they were Chinese, Korean, Indo-Chinese, or Vietnamese were grouped into the category known as "Other Asian." Students who reported that they were Samoan or Other Pacific Islander were grouped into the category of "Other Pacific Islander." Students who reported they were Black or African-American, Hispanic/Latino/Spanish, or American Indian or Alaska Native were grouped into the category of "Other." Finally, students who reported they were Portuguese

were grouped with the “Caucasian” students. Of the 7,141 students included in the final data set, 1,330 were Caucasian, 1,286 were Native Hawaiian, 1,726 were Filipino, 910 were Japanese, 504 were Other Asian, 623 were other Pacific Islander, 179 were of 2 or more ethnicities, and 454 were of Other ethnicities. This does not include 129 students that did not indicate an ethnicity. A total of 2,233 sixth, 1,892 eighth, 1,393 tenth, and 1,623 twelfth grade students were included in the sample, with 3,109 being male and 3,708 being female. This does not include the 324 students who did not indicate a gender. Students who did not indicate a gender and/or ethnicity were not included in the analyses using those variables. For more detailed information on ethnicity, grade, and gender, please refer to Table 2.3. The “*n*” or *n*-size refers to sample size and is used several times throughout the report. For this and all other tables throughout this report, the percentages are based on weighted data while the *n*-sizes are based on unweighted data. Data were weighted based on the sampling frame and led to adjustments for enrollments for each grade within each complex in order to lessen the effects of a sample bias. For County and District information, please refer to the individual County and District Reports.

**Table 2.3: Gender and Ethnicity of Participating Students by Grade**

Ethnicity	6th Grade		8th Grade		10th Grade		12th Grade		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Japanese	228	10.9	218	10.5	219	16.3	245	16.2	910	12.9
Caucasian	338	13.4	358	16.7	292	19.0	342	20.0	1,330	16.7
Filipino	542	26.4	494	30.1	320	24.7	370	23.4	1,726	26.5
Native Hawaiian	500	20.1	333	16.0	179	12.2	274	15.9	1,286	16.6
Other Asian	145	8.3	133	7.8	115	9.6	111	8.2	504	8.4
Other Pacific Islander	232	12.4	165	9.9	117	8.7	109	7.2	623	10.0
2 or more ethnicities	49	2.3	48	2.1	44	3.0	38	2.2	179	2.4
Other	138	6.3	118	6.8	90	6.4	108	6.8	454	6.6
Total	2,172	100.0	1,867	100.0	1,376	100.0	1,597	100.0	7,012	100.0
<b>Gender</b>										
Male	979	45.9	827	46.5	575	43.6	728	46.8	3,109	45.8
Female	1,138	54.1	967	53.5	764	56.4	839	53.2	3,708	54.2
Total	2,117	100.0	1,794	100.0	1,339	100.0	1,567	100.0	6,817	100.0

PROCEDURES

---

The Department of Psychiatry, John A. Burns School of Medicine partnered with the University of Hawai'i Curriculum Research and Development Group (CRDG) to coordinate the administration of the Hawai'i School Health Surveys (which included the Hawai'i Youth Risk Behavior Survey, the Hawai'i Youth Tobacco Survey, and The Hawai'i Student ATOD Survey).

In the summer of 2007, a letter was sent by the Superintendent of the DoE, Patricia Hamamoto, to the Complex Area Superintendents, School Renewal Specialists, and Secondary School Principals, which included general information regarding the administration of the 2007 Hawai'i School Health Surveys. The Hawai'i Youth Risk Behavior Survey and the Hawai'i Youth Tobacco Survey were conducted by CRDG. The Hawai'i Student ATOD Study was conducted by the Department of Psychiatry. The three surveys were administered in 53 schools, shared between the Hawai'i Student ATOD Study and CRDG staff. For the remaining 82 schools in the sample (of which 3 schools declined to take part in the study), ATOD study staff worked independently.

In August 2007, the principals of selected schools were sent an e-mail. The email explained procedures for the survey process and requested that the principals designate a liaison for their school to coordinate the survey administration. Follow up emails and phone contact occurred with schools that did not respond to the initial email.

Once a school liaison was selected by individual schools, class lists were requested and obtained. ATOD study staff requested that class lists consist of a required class for the grade level(s) to be surveyed so all students would have an equal chance of being randomly selected to participate in the survey. After obtaining the class lists, an ATOD study staff member randomly selected the classes to participate in the survey based on class size and contacted the school liaison to schedule a training session with teachers of selected classes.

An ATOD study staff member would typically meet, for approximately 20 minutes, with the school liaison and teachers of selected classes. This meeting provided background information on the survey (e.g., anonymous survey for students), reviewed procedures for distribution and collection of parent permission forms, and explained survey administration instructions. Parent permission forms and survey materials were also distributed at the meeting. Snacks and a \$5.00 gift certificate to a local establishment were provided to the teachers and the school liaisons. Teachers and school liaisons were also informed that they were eligible to receive gift cards that could be used to purchase educational materials if the class returned a specific percentage of signed parent permission forms, regardless of whether or not a parent granted permission for the student to participate in the survey. Teachers were informed that if their class returned 70-84% of signed parent permission forms, they would be eligible to receive a \$5.00 gift card and if the class returned 85% or more of signed parent permission forms, teachers were eligible to receive a \$10.00 gift card. A school liaison was eligible to receive a \$25.00 gift card if at least 70% of the students from selected classes throughout the school returned signed parent permission forms.

Generally, a time frame of two weeks was provided for students to return signed parent permission forms. Parent permission was tracked using a permission tracking roster (that was provided in the training packet) or a teacher's class roster, whichever option was determined to be the easiest for the teacher. Teachers collected parent permission forms up to the day of survey administration. The ATOD study staff used the permission tracking roster to verify survey packets. For example, roster information was used to ensure there was an adequate number of parent permission forms to account for the number of surveys that were administered in each class. Although teachers were instructed to only administer the survey to students who had parental permission to participate in the survey, surveys from 87 classes (1,243 students) needed to be dropped from the sample because the number of surveys administered did not equal the number of collected parent permission forms. Due to the survey being anonymous, there was no way to distinguish which students took the survey without parent permission. Therefore, the entire class had to be

dropped from the study when the number of surveys administered for that class exceeded the number of “yes” parent permission forms.

Teachers were asked to follow instructions provided by ATOD study staff when administering the survey and to remain at the front of the room during administration to protect student anonymity. No student names or identifiers were collected. Completed materials were collected by the school liaison or ATOD study staff. After ATOD study staff verified the materials in the survey packets, thank you letters and gift cards were distributed to appropriate school staff members.

## INSTRUMENT

---

The 14-page scannable questionnaire, which included an instruction sheet to students that briefly described the study and provided instructions on how to bubble in response choices, was developed utilizing Cardiff Teleform™ software. A large portion of the survey was based on previous versions of the Hawai'i Student ATOD Survey. The current version included the following changes: 1) dropped 13 questions from the 2003 version of the survey; 2) revised one question; 3) included prescription drugs and cigarettes to the section related to substance abuse and dependence; 4) changed the definition of binge drinking from drinking 5 or more alcoholic drinks on one occasion to drinking 4 or more alcoholic drinks on one occasion to reflect changes made by the National Institute on Alcohol Abuse and Alcoholism; and 5) updated questions related to substance abuse and dependence to reflect abuse and dependence criteria from the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition (DSM-IV; American Psychiatric Association, 1994).

The survey also measured risk and protective factors based on five domains: individual, peer, family, school, and community. Prevalence of alcohol, tobacco, and other drug use was measured using survey questions similar to those used on comparable national surveys such as the Monitoring the Future Study (Johnston, O'Malley, Bachman, & Schulenberg, 2009).

The survey was divided into seven parts. Questions in Part A related to demographic information about the student [e.g., gender, grade, and ethnicity]. Part B contained questions related to risk and protective factors associated with the students' school experiences [e.g., opportunities to be involved in class discussions]. Perceptions about self and peer attitudes related to antisocial behaviors were included in Part C of the questionnaire [e.g., how wrong students think it is for someone their age to take a handgun to school]. Questions regarding current substance use, age at first use of substance(s), and access and availability of substances were included in Part D of the questionnaire. Part E contained questions related to the neighborhood and community in which the student lives [e.g., the number of adults the student knows personally who have used substances in the past 12 months]. Part F contained survey items regarding the student's family [e.g., whether students enjoyed spending time with their mother and father]. Finally, Part G included questions to determine whether the student met DSM-IV (American Psychiatric Association, 1994) criteria for substance abuse or dependence as well as questions related to treatment needs.

Each survey contained a unique identification number that included coded information about school complex, school, grade, and class. However, no personal identifier such as the student's name was placed on the survey as the survey was anonymous.

## MEASURES

---

### DEMOGRAPHIC INFORMATION

Demographic information was collected for age, grade level, and gender of each student. Information on the one ethnic group with which the student identifies most was collected. Items to assess family and household environment included language spoken in the home, the number of people living in the household, and the number of siblings the student has. Geographic information was gathered using two questions – one asked about the zip codes of students' home addresses, and the other asked which high

school the student attends, will attend. If the student attends a private school, charter school, or has a district exception, the questions asks which school the student would otherwise attend.

## MEASURES OF SUBSTANCE USE

Measures of current use and frequency of substance use were obtained through questions related to the use of tobacco (cigarettes, snuff, or chewing tobacco), alcohol (including binge drinking), marijuana, inhalants, hallucinogens, stimulants (including cocaine and methamphetamine), sedatives (including heroin, tranquilizers, ketamine, GHB, and Rohypnol), steroids, MDMA, and prescription drugs. Related to these substances, students were asked the age at which they first used substances and on how many occasions students used substances in the past 30 days.

## ACCESSIBILITY OF SUBSTANCES

Access to substances were assessed through questions related to where and from whom substances were obtained or offered. Additionally, students were asked how easy it would be to obtain various substances.

## TREATMENT NEEDS

Treatment needs were assessed using DSM-IV (American Psychiatric Association, 1994) criteria for abuse and dependence along with whether or not a student received treatment in the past 12 months. For the 2007-2008 Hawai'i Student ATOD Survey, the DSM-IV was used to differentiate between the diagnosis for dependence and that for abuse. Dependence is the more critical diagnosis and includes symptoms of tolerance and withdrawal as well as behavioral symptoms. Abuse is a diagnostic category applied to those who do not meet the criteria for the dependence category but whose substance use causes problems for the individual (e.g., persistent substance use in circumstances that could prove to be physically harmful).

Additionally, students were asked if they received treatment for substance use over the past 12 months and, if so, if they received treatment from school or a place other than school. Students were also asked if they ever thought they should seek help for substance use but did not.

## SUBSTANCE DEPENDENCE VERSUS SUBSTANCE ABUSE

Questions associated with the symptoms of abuse and dependence were asked for the subsequent drug categories: alcohol, cigarettes, marijuana, stimulants, depressants, hallucinogens, ecstasy or other club drugs, and prescription drugs. All questions related to abuse and dependence inquired about alcohol and drug use in the last 12 months. For each question, the student was asked if the symptom occurred and, if so, with what substance(s) and whether the symptom occurred once or several times.

According to the DSM-IV, an individual is considered to be abusing a substance if they qualify for one or more of the following criteria over the past 12 months: 1) repeated substance use, the outcome of which is a failure to perform key duties at home, work, or school; 2) repeated substance use in circumstances in which it is physically dangerous; 3) recurring legal troubles due to substance use; and 4) maintaining substance use in spite of continuous or repeated social or interpersonal troubles triggered or worsened by the effects of substance use. For the 2007-2008 Hawai'i Student ATOD Survey, the criterion for recurring legal troubles due to substance use was not included. Due to the nature of adolescent substance use, students may not have been involved in substance use long enough for the use of substances to cause legal problems for them. In a study by Harrison, Fulkerson, and Beebe (1998), legal problems was one of two DSM-IV criteria that were reported least often.

According to the DSM-IV (American Psychiatric Association, 1994), an individual is considered to be substance dependent if they qualify for three or more of the following criteria over the past 12 months: 1) needing to use more of a substance in order to attain intoxication or the desired result; 2) a noticeably decreased effect when continuing to use the substance without altering the amount; 3) withdrawal

symptoms; 4) taking more of the substance than the individual planned over a lengthier time period; 5) continuous desire to reduce or manage use of the substance or making unsuccessful attempts to do so; 6) spending large amounts of time attempting to acquire the substance, use the substance, or recuperate from the effects of the substance; 7) participation in important work-related, social, or leisure activities is halted or diminished due to substance use; and 8) use of the substance is maintained in spite of recognition that use of the substance is likely to have triggered or worsened a continuous or repeated psychological or physical problem. To address the criteria involving “continued substance use despite problems” for abuse and dependence, the response of *yes, several times* indicated the student had experienced the DSM-IV symptom several times and was interpreted as endorsement that the students recognize that the problem exists yet are continuing use.

Abuse and dependence were coded to reflect DSM-IV criteria. Therefore, if a student endorsed one or more substance abuse criteria, they were considered as qualifying for substance abuse. If students endorsed three or more dependence criteria, they were considered to be substance dependent. Abuse and dependence were coded such that the diagnoses were mutually exclusive. That is, a student could only qualify for abuse or dependence, not both. If students met the criteria to qualify for both abuse and dependence, they were considered to qualify for substance dependence as it is the more severe diagnosis. For this study, most of the sample sizes (*n*-sizes) for abuse and dependence were too small for all substances to be analyzed individually. Therefore, for the purposes of this study, abuse and dependence were coded as two variables. For the first of these variables, all substances (i.e., alcohol, tobacco, and other drugs) were aggregated and if students endorsed the necessary criteria for abuse of any substance or dependence of any substance they were considered to qualify for that particular diagnosis. The second of these variables not only combined all substances but combined abuse and dependence criteria so that it could be determined if students qualified for abuse or dependence of any substance. DSM-IV criteria are diagnostic criteria and indicate a need for treatment. They do not indicate the level of treatment needed.

ADAD uses ASAM (American Society of Addiction Medicine) placement criteria which also include risky substance use among youth. Thus, using the ATOD survey and DSM-IV criteria for estimating treatment likely will underestimate actual need for services at the school and community level (Goebert, Helm, Rehuher, Hiramatsu, & Keopaseut, 2008).

#### GENERAL TREATMENT NEEDS FOR EACH DRUG CATEGORY

Questions 48-58 (see Appendix for a copy of the survey instrument) address issues related to substance abuse or dependence for each drug category. Students were considered to be in need of treatment or screening for treatment if they met criteria for either abuse or dependence.

#### DEVELOPMENT OF RISK/PROTECTIVE SCALES FOR PREVENTION NEEDS

---

The 2007-2008 Hawai'i Student ATOD Survey assessed several risk and protective factors related to individual, peer, family, school, and community domains to aid in planning for prevention efforts. Risk factors are attributes of the five domains that have been shown to foretell increased probability of substance use, delinquency, and problem behaviors in young people (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002), while protective factors are characteristics of the five domains that appear to have a hand in reducing or preventing problem behaviors in adolescents. Risk and protective factors will be described in more detail in Chapter four.

#### ANALYSES

---

As previously discussed, data were weighted according to grade enrollments in each complex. Descriptive and bivariate analyses were conducted on the data for this study using crosstabs, chi-square tests, and correlations.

#### LIMITATIONS

---

As is true with all studies, there are limitations to this study that should be considered when examining the results. For the current study, if a target grade level at a certain school did not have at least 100 students enrolled during the previous school year that particular grade level at that school was not included in the sample. This was done in an effort to reduce the number of classes and schools included in the study, thereby lessening the interruption of instructional time. For similar reasons, classes at selected schools were not included to participate if the enrollment in the class was less than 10 students.

The sample for the study was limited due to the fact that only students who obtained written permission from a parent or guardian could participate in the survey. Additionally, some students were excluded from the sample if they chose not to participate in the survey. Students who were absent throughout the survey process (i.e., absent from the time parent permission forms were passed out to the time the survey was administered) were also not included in the sample as well as students who were absent the day of survey administration and were unable to take the survey at a later time. Since substance use is normally higher among non-participating students, absentee students, and dropouts, this study may underestimate substance use among Hawai'i's youth.

The 2007-2008 Hawai'i Student ATOD Survey was a paper and pencil survey. According to results from the 2006-2007 pilot study (Onoye, Goebert, & Nishimura, under review 2009) changing the sampling framework to a web-based system in future surveys may improve the honesty with which students answer questions as well as increasing the response rate. A web-based survey would also allow for greater accuracy in the data and expedite the analysis process, allowing for a faster turnaround in the implementation of new programs and policy to confront youth substance use. As a paper and pencil survey, students may have felt uncomfortable in answering certain questions for fear that someone would see their answers. For example, students may not have wanted to risk a classmate or teacher seeing their answers. Therefore, they may not have answered or chose to be dishonest on questions related to things they think could get them into trouble such as drug use or criminal behaviors. Another limitation has to do with the self-

reported, retrospective nature of the survey. For example, students, especially 12<sup>th</sup> graders, may not always remember key dates and situations with regard to substance use, and their answers may not necessarily reflect what actually happened. In a few instances, students selected multiple responses to questions and therefore the data for these questions could not be included.

To account for technical errors on the surveys, each survey was checked, question by question, to ensure that answers were read correctly by the Teleform Verifier program. Any errors that resulted from Teleform Verifier failing to detect survey answers were corrected manually. An additional recheck on a minimum of 10% of data for each class was also conducted. In order to reduce confusion in interpreting survey questions, teachers were informed during the teacher trainings of questions that could be potentially misinterpreted and were given advice on how to accurately explain such questions to students.

Another potential issue is how comparable this study is to national surveys such as the Monitoring the Future Study (Johnston et al., 2009). The Monitoring the Future Study has historically been conducted during the spring while the current study (and other previous survey efforts in Hawai'i) was conducted over the course of the fall and spring semesters with the bulk of the administrations occurring in the fall semester. This may pose a problem when comparing the current study to similar national studies because differences in outcomes may be the result of the difference in time of survey administration rather than other factors. Additionally, findings from this study could not be directly compared to the results from the 2003 Hawai'i Student ATOD Survey because of differing methodologies between the two studies.

One last limitation is that this study only provides cross-sectional data (i.e., provides a snapshot of what is happening at the time the student took the survey) and thus temporal or predictive relationships cannot be established.

Despite these limitations, this study utilizes contemporary methods that are consistent with other state and national student surveys. Furthermore, this report provides the most comprehensive assessment of substance use, risk and protective factors, and treatment needs for youth in Hawai'i.

## CHAPTER 3: PREVALENCE AND ONSET OF YOUTH SUBSTANCE USE

Given the recognition of youth substance use as an ongoing public health issue, it is important to gather, analyze, and disseminate information about the characteristics of youth substance use. Obtaining information on the age of initiation (when youth begin to experiment with substances), how often substances are being used, and the impact substance use has upon health is critical in making informed decisions on strategies to curb adolescent substance use and its related negative outcomes.

This chapter first provides an overview of the literature on the onset (or age of first use) of adolescent substance use. Next, factors and outcomes associated with onset of adolescent substance use will be discussed, followed by findings from the 2007-2008 Hawai'i Student ATOD Survey. Subsequently, prevalence rates of adolescent substance use will be reported, which includes comparisons to national data from the 2008 Monitoring the Future Study (Johnston, O'Malley, Bachman, & Schulenberg, 2009), where applicable. Finally, the conclusion section will address key findings for onset and prevalence and discuss the importance of programs targeting youth at a younger age.

### PREVALENCE AND FREQUENCY OF YOUTH SUBSTANCE USE

---

In order to determine the extent of adolescent substance use, measures of drug use are carried out in terms of prevalence and frequency (Johnston, O'Malley, Bachman, & Schulenberg, 2008). Prevalence means the proportion of adolescents using substances in a particular time frame. Frequency refers to the number of times adolescents have used particular substances in a particular time frame (Johnston et al., 2007). In this report, we will look at prevalence rates for lifetime substance use, substance use in the past 12 months, and substance use in the past 30 days. For frequency measures, we will look at rates of substance use in the past 30 days.

## PREVALENCE OF LIFETIME SUBSTANCE USE

The measure of lifetime prevalence was obtained by a set of questions in the 2007-2008 Hawai'i Student ATOD Survey that asked students at what age they first used substances. Specifically, students were asked *How old were you when you FIRST* tried various substances. The students' response choices were coded as follows: *0 = Never have, 9 = age 9 or younger, 10 = age 10, 11 = age 11, 12 = age 12, 13 = age 13, 14 = age 14, 15 = age 15, 16 = age 16, and 17 = age 17 or older.* Although the students were not asked if they have EVER used various substances, by marking the age of first use, a new variable of ever using substances can be extrapolated. This coding technique decreases the number of questions students are asked. For example, if a student said he or she first used alcohol at age 14, the student would be positive for EVER using alcohol in his or her life. For the purposes of this report, students' responses were recoded into two categories: *0 = never used a substance* and *1 = used a substance at least once.* This was done to ensure that substance use rates for lesser used substances would be captured and reported. Tables 3.1-3.5 list the lifetime prevalence rates of cigarettes, alcohol, marijuana, prescription drugs, and illicit drug use, respectively, by gender, grade and ethnicity. For the purposes of this study and to facilitate later comparison with the national Monitoring the Future study, illicit drugs are defined as hallucinogens, cocaine, methamphetamine, heroin, and tranquilizers that have been recoded into the single category of "illicit drugs." Marijuana, another illicit drug, is categorized separately because of its higher prevalence of use.

<b>Table 3.1: Lifetime Prevalence of <u>Cigarette Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	5,505	79.2	78.1-80.0	1,523	20.8	20.1-22.0	7,028
<b>Gender</b>							
Male	2,439	80.9	79.6-82.4	600	19.1	17.6-20.4	3,039
Female	2,823	77.8	76.7-79.3	854	22.2	20.7-23.3	3,677
<b>Grade</b>							
6th Grade	2,006	91.3	89.8-92.2	182	8.7	7.8-10.2	2,188
8th Grade	1,513	81.7	80.3-83.8	347	18.3	16.3-20.0	1,860
10th Grade	1,019	73.8	71.7-76.3	355	26.2	23.7-28.3	1,374
12th Grade	967	60.3	57.6-62.4	639	39.7	37.6-42.4	1,606
<b>Ethnicity</b>							
Japanese	783	87.7	85.9-90.1	121	12.3	9.9-14.1	904
Caucasian	1,015	77.8	75.8-80.2	297	22.2	19.8-24.2	1,312
Filipino	1,382	81.6	80.2-83.8	328	18.4	16.2-19.8	1,710
Native Hawaiian	904	72.3	69.5-74.5	360	27.7	25.5-30.5	1,264
Other Asian	443	90.0	87.4-92.6	53	10.0	7.4-12.6	496
Other Pacific Islander	442	72.4	68.4-75.6	161	27.6	24.4-31.6	603
2 or more ethnicities	120	72.7	66.4-79.6	52	27.3	20.4-33.6	172
Other	314	70.6	66.8-75.2	132	29.4	24.8-33.2	446

<b>Table 3.2: Lifetime Prevalence of <u>Alcohol Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	3,955	59.7	58.9-61.2	3,027	40.3	38.9-41.2	6,982
<b>Gender</b>							
Male	1,807	62.4	60.3-63.7	1,220	37.6	36.3-39.7	3,027
Female	1,972	57.5	56.4-59.6	1,674	42.5	41.4-44.6	3,646
<b>Grade</b>							
6th Grade	1,814	84.4	82.5-85.5	367	15.6	14.5-17.5	2,181
8th Grade	1,133	63.8	61.8-66.2	717	36.2	33.8-38.2	1,850
10th Grade	578	43.5	41.4-46.6	787	56.5	54.4-59.6	1,365
12th Grade	430	27.6	25.8-30.2	1,156	72.4	69.8-74.2	1,586
<b>Ethnicity</b>							
Japanese	537	61.5	58.8-65.2	360	38.5	35.8-42.2	897
Caucasian	659	52.6	50.3-55.7	642	47.4	44.3-49.7	1,301
Filipino	1,023	63.3	60.7-65.3	684	36.7	34.7-39.3	1,707
Native Hawaiian	633	52.5	50.2-55.8	620	47.5	45.2-50.8	1,253
Other Asian	337	71.8	68.0-76.0	157	28.2	24.0-32.0	494
Other Pacific Islander	394	68.4	64.3-71.7	204	31.6	28.3-35.7	598
2 or more ethnicities	81	50.6	43.5-58.5	91	49.4	41.5-56.5	172
Other	217	50.5	46.3-55.7	225	49.5	45.3-54.7	442

<b>Table 3.3: Lifetime Prevalence of <u>Marijuana Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	5,598	82.7	82.1-83.9	1,414	17.3	16.1-17.9	7,012
<b>Gender</b>							
Male	2,415	82.4	80.6-83.4	621	17.6	16.6-19.4	3,036
Female	2,932	82.7	81.8-84.2	736	17.3	15.8-18.2	3,668
<b>Grade</b>							
6th Grade	2,115	97.6	97.4-98.6	68	2.4	1.4-2.6	2,183
8th Grade	1,594	88.0	86.5-89.5	262	12.0	10.5-13.5	1,856
10th Grade	995	74.4	71.7-76.3	375	25.6	23.7-28.3	1,370
12th Grade	894	57.8	55.6-60.4	709	42.2	39.6-44.4	1,603
<b>Ethnicity</b>							
Japanese	767	86.7	84.8-89.2	135	13.3	10.8-15.2	902
Caucasian	946	74.0	71.6-76.4	367	26.0	23.6-28.4	1,313
Filipino	1,489	88.9	87.5-90.5	223	11.1	9.5-12.5	1,712
Native Hawaiian	906	74.6	72.6-77.4	348	25.4	22.6-27.4	1,254
Other Asian	458	93.7	91.1-96.1	36	6.3	3.9-8.1	494
Other Pacific Islander	493	85.2	82.1-87.9	107	14.8	12.1-17.9	600
2 or more ethnicities	121	77.1	70.7-83.3	50	22.9	16.7-29.3	171
Other	320	74.6	71.0-79.0	125	25.4	21.0-29.0	445

<b>Table 3.4: Lifetime Prevalence of <u>Prescription Drug Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	6,573	94.9	94.5-95.5	425	5.1	4.5-5.5	6,998
<b>Gender</b>							
Male	2,851	95.3	94.2-95.8	176	4.7	4.2-5.8	3,027
Female	3,434	94.7	94.3-95.7	227	5.3	4.3-5.7	3,661
<b>Grade</b>							
6th Grade	2,137	98.9	98.6-99.4	26	1.1	0.6-1.4	2,163
8th Grade	1,785	96.8	96.2-97.8	71	3.2	2.2-3.8	1,856
10th Grade	1,273	94.1	92.7-95.3	100	5.9	4.7-7.3	1,373
12th Grade	1,378	86.4	84.3-87.7	228	13.6	12.3-15.7	1,606
<b>Ethnicity</b>							
Japanese	861	95.6	94.7-97.3	42	4.4	2.7-5.3	903
Caucasian	1,173	90.8	89.5-92.6	134	9.2	7.5-10.6	1,307
Filipino	1,651	97.4	96.2-97.8	52	2.6	2.2-3.8	1,703
Native Hawaiian	1,179	94.9	93.8-96.2	79	5.1	3.8-6.2	1,258
Other Asian	481	98.2	96.8-99.2	11	1.8	0.8-3.2	492
Other Pacific Islander	576	96.3	94.4-97.6	25	3.7	2.4-5.6	601
2 or more ethnicities	154	91.7	88.0-96.1	18	8.3	4.0-12.1	172
Other	390	89.2	86.1-91.9	54	10.8	8.1-13.9	444

<b>Table 3.5: Lifetime Prevalence of <u>Illicit Drug Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	6,596	95.4	94.5-95.5	379	4.6	4.5-5.5	6,975
<b>Gender</b>							
Male	2,846	95.0	94.2-95.8	176	5.0	4.2-5.8	3,022
Female	3,464	95.9	95.4-96.6	177	4.1	3.4-4.6	3,641
<b>Grade</b>							
6th Grade	2,116	98.2	97.4-98.6	38	1.8	1.4-2.6	2,154
8th Grade	1,771	96.5	96.2-97.8	74	3.5	3.1-4.9	1,845
10th Grade	1,303	95.6	95.0-97.0	70	4.4	3.0-5.0	1,373
12th Grade	1,406	88.6	87.5-90.5	197	11.4	9.5-12.5	1,603
<b>Ethnicity</b>							
Japanese	867	96.0	94.7-97.3	37	4.0	2.7-5.3	904
Caucasian	1,181	91.6	90.5-93.5	126	8.4	6.5-9.5	1,307
Filipino	1,657	98.1	97.3-98.7	39	1.9	1.3-2.7	1,696
Native Hawaiian	1,187	95.9	94.9-97.1	63	4.1	2.9-5.1	1,250
Other Asian	474	97.5	96.8-99.2	13	2.5	1.5-4.5	487
Other Pacific Islander	573	95.8	94.4-97.6	24	4.2	2.4-5.6	597
2 or more ethnicities	151	90.4	85.5-94.5	20	9.6	5.5-14.5	171
Other	393	90.0	87.2-92.8	50	10.0	7.2-12.8	443

For lifetime substance use by gender, among the substances in which higher percentages of females than males reported use included cigarettes (females 22.2%, males 19.1%), alcohol (females 42.5%, males 37.6%), and prescription drugs (females 5.3%, males 4.7%). Comparable rates of marijuana use were found (males 17.6%, females 17.3%). Males reported slightly higher rates for illicit drugs (males 5.0%, females 4.1%).

For lifetime substance use by grade, the pattern showed that lifetime use of most substances increased as the students moved through the school system. Higher rates of lifetime substance use were reported for gateway drugs including, cigarettes, alcohol, and marijuana. For example, lifetime substance use rates for alcohol, the most commonly used substance, were 15.6% for 6<sup>th</sup> graders, 36.2% for 8<sup>th</sup> graders, 56.5% for 10<sup>th</sup> graders, and 72.4% for 12<sup>th</sup> graders. This pattern was repeated for substances including cigarettes, marijuana, prescription drugs, and illicit drugs. Much higher lifetime prevalence rates for 12<sup>th</sup> graders for all substances were reported. Twelfth graders, in comparison to 6<sup>th</sup> graders reported a 4-6 fold

increase in prevalence rates of cigarettes, alcohol, and illicit drug use. For marijuana use, 17 times as many 12<sup>th</sup> graders reported lifetime marijuana use in comparison to 6<sup>th</sup> graders and 12 times as many 12<sup>th</sup> graders reported prescription drug use in comparison to 6<sup>th</sup> graders.

Overall, for lifetime substance use by ethnicity, Native Hawaiians, Caucasians, students with 2 or more ethnicities, and students of Other ethnicities reported the highest rates of lifetime substance use. For example, 29.4% of Other students, 27.7% of Native Hawaiians, and 22.2% of Caucasians reported having smoked cigarettes. In addition, 27.6% of Pacific Islanders and 27.3% of students who reported two or more ethnicities also reported smoking cigarettes. Alcohol was the most widely used substance, with 49.5% of students of Other ethnicities, 49.4% of students of 2 or more ethnicities, 47.5% of Native Hawaiian, 47.4% of Caucasian, 38.5% of Japanese, 36.7% of Filipino, and 31.6% of Pacific Islander students reported use of alcohol in their lives. Lifetime marijuana use was reported by 26.0% of Caucasians, 25.4% of Native Hawaiians, and 25.4% of students of Other ethnicities. Use of prescription drugs was reported by 9.2% of Caucasians and 5.1% of Native Hawaiians. Although their numbers are relatively small compared to Caucasians and Native Hawaiians, 10.8% of students of Other ethnicities reported using prescription drugs. For lifetime illicit drug use, Caucasians (8.4%), Native Hawaiians (4.1%), and students of Other ethnicities (10%, although the sample size was relatively small) reported the highest lifetime rates.

Data from the Hawai'i Student ATOD Study showed that Caucasians, Native Hawaiians, and students of Other ethnicities appeared more likely than other ethnic groups to report the use of cigarettes, alcohol, marijuana, prescription drugs, and illicit drugs.

For lifetime rates of cigarette use for most groups fell below 30%. Students of Other ethnicities (29.4%) reported the highest rate of use. For gender, females (22.2%) reported higher lifetime rates than males (19.1%). For grade, lifetime use increased with higher grade levels: 8.7%, 18.3%, 26.2%, and 39.7% for 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively.

Alcohol lifetime rates were higher than that of any other substance. More females (42.5%) than males (37.6%) reported use of alcohol. Of 6<sup>th</sup> graders, 15.6% reported having tried alcohol; by the 12<sup>th</sup> grade, 72.4% reported having tried alcohol in their lifetime. For prevalence of drinking enough to get drunk, 30.7% of 10<sup>th</sup> and 12<sup>th</sup> graders and 52.0% of Native Hawaiians reported that they drank enough to get drunk while 39.1% of students in the 12<sup>th</sup> grade reported drinking alcohol on a regular basis.

Marijuana appeared to be the most widely used illicit drug for youth in Hawai'i. Slightly more males (17.6%) than females (17.3%) reported having tried marijuana. In addition, 44.2% of 12<sup>th</sup> graders, 25.6% of 10<sup>th</sup> graders, and 12.0% of 8<sup>th</sup> graders also reported having used marijuana. Like cigarette and alcohol use, marijuana use also appeared to be higher for older students. Among ethnic groups, 26.0% of Caucasians, 25.4% of Native Hawaiians, and 25.4% of students of Other ethnicities reported using marijuana.

Prescription drug use rates appeared to be lower than those for marijuana, cigarettes, and alcohol. More females (5.3%) than males (4.7%) reported having used prescription drugs, while 13.6% of 12<sup>th</sup> graders and 5.9% of 10<sup>th</sup> graders reported having used prescription drugs. Among ethnic groups, 10.8% of students of Other ethnicities, 8.3% of students of 2 or more ethnicities, 9.2% of Caucasians and 5.1% of Native Hawaiians reported using prescription drugs.

Illicit drug use seemed to be comparable to prescription drug use. More males (5.0%) than females (4.1%) reported trying illicit drugs. Twelfth graders (11.4%) reported much higher lifetime rates than students in the 6<sup>th</sup>, 8<sup>th</sup>, or 10<sup>th</sup> grade. As reported earlier, Caucasians (8.4%), Native Hawaiians (4.1%), and students of Other ethnicities (10.0%) appeared more likely to have used illicit drugs.

## PREVALENCE OF SUBSTANCE USE IN THE PAST 12 MONTHS

For substance use in the past year, students were asked: *Have you ever used alcohol, tobacco (cigarettes), or other drugs in the past 12 months?* The possible response choices consisted of 0 = No or 1 = Yes. The question asks about any drug use rather than what specific drugs were used in the past 12 months.

<b>Table 3.6: Prevalence of Substance Use in the Past 12 Months by Gender, Grade, and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	4,544	79.2	78.0-80.0	1,362	20.8	20.0-22.0	5,906
<b>Gender</b>							
Male	2,001	82.3	80.5-83.5	482	17.7	16.5-19.5	2,483
Female	2,352	76.6	75.5-78.5	825	23.4	21.5-24.5	3,177
<b>Grade</b>							
6th Grade	1,558	94.0	92.9-95.1	108	6.0	4.9-7.1	1,666
8th Grade	1,295	85.5	84.3-87.7	241	14.5	13.2-16.8	1,536
10th Grade	897	73.2	70.5-75.5	353	26.8	24.5-29.5	1,250
12th Grade	794	56.2	53.5-58.6	660	43.8	41.5-46.6	1,454
<b>Ethnicity</b>							
Japanese	633	81.4	78.3-83.7	165	18.6	16.3-21.7	798
Caucasian	794	71.7	69.4-74.6	344	28.3	25.4-30.6	1,138
Filipino	1,171	82.9	81.1-84.9	275	17.1	15.1-18.9	1,446
Native Hawaiian	745	72.6	70.3-75.7	295	27.4	24.3-29.7	1,040
Other Asian	380	90.6	88.3-93.7	49	9.4	6.3-11.7	429
Other Pacific Islander	379	82.2	78.5-85.5	91	17.8	14.5-21.5	470
2 or more ethnicities	105	79.2	72.2-85.8	32	20.8	14.2-27.8	137
Other	255	73.5	69.4-78.6	95	26.5	22.4-31.7	350

More females (23.4%) than males (17.7 %) reported trying any substances in the previous 12 months. Students reported higher percentages of substance use in the past 12 months as they progressed through the school system. For example, 6.0% of 6<sup>th</sup> graders, 14.5% of 8<sup>th</sup> graders, 26.8% of 10 graders, and 43.8% of 12<sup>th</sup> graders, reported substance use in the past year.

With regard to ethnicity, 28.3% of Caucasians, 27.4% of Native Hawaiians, 26.5% of students of Other ethnicities, and 20.8% of students of 2 or more ethnicities reported having used drugs in the past 12 months. In addition, 18.6% of Japanese, 17.8% of Pacific Islanders, 17.1% of Filipinos, and 9.4% of Other Asians reported using drugs in the past 12 months.

#### PREVALENCE OF SUBSTANCE USE IN THE PAST 30 DAYS

To assess current use or substance use in the past 30 days, students were asked, *During the last 30 days, on HOW MANY OCCASIONS (if any) have you used the following substances.* Possible response choices were 0 = 0 occasions; 1 = 1-2 occasions; 2 = 3-5 occasions; 3 = 6-9 occasions; 4 = 10-19 occasions; 5 = 20-39 occasions.

occasions; and 6 = 40+ occasions. For the purposes of this report and due to the relatively smaller sample sizes and percentages, responses were collapsed to *No* (0 occasions) and *Yes* (1, if a student reported any use). Tables 3.7 -3.11 present prevalence rates for use of cigarettes, alcohol, marijuana, prescription drugs, and illicit drugs in the past 30 days.

<b>Table 3.7: Prevalence of Past 30 Day Cigarette Use by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI	<i>n</i>
<b>Overall Total</b>	6,413	92.2	91.4-92.6	586	7.8	7.4-8.6	6,999
<b>Gender</b>							
Male	2,802	93.3	92.1-93.9	221	6.7	6.1-7.9	3,023
Female	3,331	91.4	90.1-91.9	332	8.6	8.1-9.9	3,663
<b>Grade</b>							
6th Grade	2,084	96.4	95.2-96.8	81	3.6	3.2-4.8	2,165
8th Grade	1,723	93.2	91.8-94.2	130	6.8	5.8-8.2	1,853
10th Grade	1,247	91.0	89.5-92.5	130	9.0	7.5-10.5	1,377
12th Grade	1,359	84.8	83.3-86.8	245	15.2	13.3-16.8	1,604
<b>Ethnicity</b>							
Japanese	852	94.9	93.6-96.4	49	5.1	3.6-6.4	901
Caucasian	1,180	90.6	89.5-92.6	131	9.4	7.5-10.6	1,311
Filipino	1,590	94.4	93.0-95.1	101	5.6	4.9-7.1	1,691
Native Hawaiian	1,123	89.8	88.3-91.7	139	10.2	8.3-11.7	1,262
Other Asian	479	97.0	95.5-98.5	15	3.0	1.5-4.5	494
Other Pacific Islander	530	87.2	84.3-89.7	73	12.8	10.3-15.7	603
2 or more ethnicities	155	93.8	90.4-97.6	16	6.2	2.4-9.6	171
Other	394	88.3	85.0-91.0	53	11.7	9.0-15.0	447

<b>Table 3.8: Prevalence of Past 30 Day <u>Alcohol Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	5,304	78.9	78.0-80.0	1,636	21.1	20.0-22.0	6,940
<b>Gender</b>							
Male	2,359	80.8	79.6-82.4	642	19.2	17.6-20.4	3,001
Female	2,697	76.9	75.6-78.4	932	23.1	21.6-24.4	3,629
<b>Grade</b>							
6th Grade	1,965	92.2	90.9-93.2	185	7.8	6.9-9.2	2,150
8th Grade	1,466	81.6	80.3-83.8	377	18.4	16.3-19.8	1,843
10th Grade	960	71.7	69.6-74.4	404	28.3	25.6-30.4	1,364
12th Grade	913	59.2	56.6-61.4	670	40.8	38.6-43.4	1,583
<b>Ethnicity</b>							
Japanese	722	82.0	79.5-84.5	171	18.0	15.5-20.5	893
Caucasian	935	74.5	72.7-77.4	366	25.5	23.6-28.4	1,301
Filipino	1,346	82.6	81.2-84.8	331	17.4	15.2-18.8	1,677
Native Hawaiian	852	69.3	66.4-71.6	394	30.7	28.4-37.6	1,246
Other Asian	432	89.4	86.2-91.8	61	10.6	8.2-13.8	493
Other Pacific Islander	488	83.6	81.1-86.9	109	16.4	13.1-18.9	597
2 or more ethnicities	116	72.9	66.3-79.7	54	27.1	20.3-33.7	170
Other	315	72.4	67.8-76.2	130	27.6	23.8-32.2	445

<b>Table 3.9: Prevalence of Past 30 Day <u>Marijuana Use</u> by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	6,215	90.8	90.3-91.7	760	9.2	8.3-9.7	6,975
<b>Gender</b>							
Male	2,672	90.5	90.0-92.0	340	9.5	8.9-11.1	3,012
Female	3,266	91.0	90.1-91.9	385	9.0	8.1-9.9	3,651
<b>Grade</b>							
6th Grade	2,109	98.2	97.4-98.6	47	1.8	1.4-2.6	2,156
8th Grade	1,698	93.0	91.8-94.2	154	7.0	5.8-8.2	1,852
10th Grade	1,171	86.3	84.2-87.8	202	13.7	12.2-15.8	1,373
12th Grade	1,237	79.5	78.0-82.0	357	20.5	19.0-23.0	1,594
<b>Ethnicity</b>							
Japanese	834	93.6	92.5-95.6	64	6.4	4.5-7.6	898
Caucasian	1,099	85.7	84.1-87.9	206	14.3	12.1-15.9	1,305
Filipino	1,587	95.1	94.0-96.0	102	4.9	4.0-6.0	1,689
Native Hawaiian	1,058	85.8	84.1-87.9	196	14.2	12.1-15.9	1,254
Other Asian	476	96.7	95.5-98.5	18	3.3	1.5-4.5	494
Other Pacific Islander	535	91.0	88.7-93.3	65	9.0	6.7-11.3	600
2 or more ethnicities	143	87.9	83.1-92.9	28	12.1	7.1-16.9	171
Other	378	85.9	82.8-89.2	67	14.1	10.8-17.2	445

<b>Table 3.10: Prevalence of Past 30 Day Prescription Drug Use by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	6,740	97.3	96.6-97.4	223	2.7	2.6-3.4	6,963
<b>Gender</b>							
Male	2,909	97.5	97.5-98.5	92	2.5	2.4-3.6	3,001
Female	3,529	97.1	96.5-97.6	121	2.9	2.5-3.6	3,650
<b>Grade</b>							
6th Grade	2,120	98.9	98.6-99.4	25	1.1	0.6-1.4	2,145
8th Grade	1,804	97.9	97.4-98.6	44	2.1	1.4-2.6	1,848
10th Grade	1,311	96.4	95.0-97.0	61	3.6	3.0-5.0	1,372
12th Grade	1,505	94.5	93.9-96.1	93	5.5	4.8-7.2	1,598
<b>Ethnicity</b>							
Japanese	881	97.9	97.1-98.9	18	2.1	1.1-2.9	899
Caucasian	1,232	95.2	93.8-96.2	72	4.8	3.8-6.2	1,304
Filipino	1,667	99.2	98.5-99.5	20	0.8	0.5-1.5	1,687
Native Hawaiian	1,202	96.9	96.1-98.0	48	3.1	2.1-4.0	1,250
Other Asian	488	99.0	98.1-99.9	5	1.0	0.1-1.9	493
Other Pacific Islander	583	97.4	95.6-98.4	16	2.6	1.6-4.4	599
2 or more ethnicities	162	95.7	93.1-98.9	9	4.3	1.1-6.9	171
Other	412	93.2	90.6-95.4	30	6.8	4.6-9.4	442

<b>Table 3.11: Prevalence of Past 30 Day Illicit Drug Use by Gender, Grade and Ethnicity (percentages are from weighted data)</b>							
	<b>Never Used</b>			<b>Used</b>			<b>Total</b>
	<i>n</i>	%	<i>95%CI</i>	<i>n</i>	%	<i>95%CI</i>	<i>n</i>
<b>Overall Total</b>	6,763	97.7	97.7-98.3	187	2.3	1.7-2.3	6,950
<b>Gender</b>							
Male	2,908	97.4	96.4-97.6	92	2.6	2.4-3.6	3,000
Female	3,559	98.1	97.5-98.5	78	1.9	1.5-2.5	3,637
<b>Grade</b>							
6th Grade	2,108	98.5	98.6-99.4	32	1.5	1.4-2.6	2,140
8th Grade	1,795	97.7	97.4-98.6	49	2.3	1.4-2.6	1,844
10th Grade	1,343	98.6	98.5-99.5	25	1.4	0.9-1.9	1,368
12th Grade	1,517	95.1	93.9-96.1	81	4.9	3.9-6.1	1,598
<b>Ethnicity</b>							
Japanese	880	98.2	97.1-98.9	15	1.8	0.9-2.8	895
Caucasian	1,244	96.1	94.9-97.1	59	3.9	2.9-5.1	1,303
Filipino	1,669	99.4	98.5-99.5	12	0.6	0.2-1.0	1,681
Native Hawaiian	1,217	97.5	97.2-98.8	35	2.5	2.1-3.9	1,252
Other Asian	483	98.6	98.1-99.9	7	1.4	0.4-2.4	490
Other Pacific Islander	582	97.3	95.6-98.4	17	2.7	1.4-4.0	599
2 or more ethnicities	160	94.6	91.7-98.3	11	5.4	2.0-8.8	171
Other	415	94.2	91.8-96.2	27	5.8	3.6-8.0	442

For past 30 day use by gender, higher percentages of females than males reported using substances for alcohol, cigarettes, and prescription drugs. More females (8.6%) than males (6.7%) reported cigarette use and more females (23.1%) than males (19.2%) reported alcohol use as well. Females also reported a higher percentage of prescription drug use (females 2.9% vs. males 2.5%). Marijuana use by males (9.5%) surpassed use by females (9.0%). Males (2.6%) also reported a higher percentage of illicit drug use than females (1.9%).

For past 30 day use by grade, patterns showed that for most substances, substance use rates increased for higher grade levels. For example, 7.8% of 6<sup>th</sup> graders, 18.4% of 8<sup>th</sup> graders, 28.3% of 10 graders, and 40.8% of 12<sup>th</sup> graders reported using alcohol in the past 30 days. This pattern was repeated for cigarettes (3.6%, 6.8%, 9.0%, and 15.2% for 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders, respectively) and marijuana (1.8%, 7.0%, 13.7%, and 20.5% of 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students, respectively). Although not as widely used, prescription drugs showed the same pattern, with 1.1% of 6<sup>th</sup> graders, 2.1% of 8<sup>th</sup> graders, 3.6% of 10 graders, and 5.5% of 12 graders reporting use. The exception to this pattern was with illicit drug use, wherein a higher percentage of 6<sup>th</sup> graders (1.5%) and 8<sup>th</sup> graders (2.3%) reported using illicit drugs in the past 30 days in comparison to 10<sup>th</sup> graders (1.4%). Twelfth graders reported illicit drug use at 4.9%.

For past 30 day substance use by ethnicity, Caucasians and Native Hawaiians reported the highest percentages of substance use. For cigarettes, 10.2% of Native Hawaiians, 9.4% of Caucasians, and 5.6% of Filipinos reported use. For alcohol, most ethnic groups reported use in the past 12 months, with 30.7% of Native Hawaiians, 27.6% of students of Other ethnicities, 27.1% of students of 2 or more ethnicities, 25.5% of Caucasians, 18.0% of Japanese, 17.4% of Filipinos, and 16.4% of Pacific Islanders reported drinking alcohol. Marijuana use in the past 12 months was reported by 14.3% of Caucasians, 14.2% of Native Hawaiians, 14.1% of students of Other ethnicities, and 9.0% of Pacific Islanders. Prescription drug use was not as prevalent, although 6.8% of students of Other ethnicities, 4.8% of Caucasians, and 3.1% of Native

Hawaiians reported use. For illicit drug use, 5.8% of students of Other ethnicities, 3.9% of Caucasians, and 2.5% of Native Hawaiians reported the highest prevalence rates for past 30 day use.

#### FREQUENCY OF SUBSTANCE USE IN THE PAST 30 DAYS

By looking at how many times particular substances were reported being used in the past 30 days, it can be determined which substances are currently in demand by youth. Students were asked the following question, *During the last 30 days, on HOW MANY OCCASIONS (if any) have you used the following?* with responses ranging from *0 = 0 occasions; 1 = 1-2 occasions; 2 = 3-5 occasions; 3 = 6-9 occasions; 4 = 10-19 occasions; 5 = 20-39 occasions; and 6 = 40+ occasions*. These responses were collapsed into four categories: *0 = 0 occasions* were categorized as never used; *1 = 1-2 occasions* were recoded as occasional use; *2 = 3-5 occasions, 3 = 6-9 occasions, and 4 = 10-19 occasions* were recoded as periodic use; and *5 = 20-39 occasions, and 6 = 40+ occasions* were recoded as frequent use. Tables 3.12-3.16 provide the frequency rates for youth substance use in the past 30 days for cigarettes, alcohol, marijuana, prescription drugs, and illicit drugs by gender, grade, and ethnicity.

**Table 3.12: Frequency of Past 30 Day Cigarette Use  
by Gender, Grade, and Ethnicity (percentages are from weighted data)**

	Never Used			Occasional Use			Periodic Use			Frequent Use			n
	n	%	95%CI	n	%	95%CI	n	%	95%CI	n	%	95%CI	
<b>Overall Total</b>	6,413	92.2	91.4-92.6	255	3.5	3.5-4.5	173	2.3	1.7-2.3	158	2.0	1.7-2.3	6,999
<b>Gender</b>													
Male	2,802	93.3	92.1-93.9	96	3.0	2.4-3.6	58	1.7	1.2-2.2	67	2.0	1.5-2.5	3,023
Female	3,331	91.4	90.1-91.9	148	3.9	3.4-4.6	106	2.9	2.4-3.4	78	1.8	1.4-2.2	3,663
<b>Grade</b>													
6th Grade	2,084	96.4	95.2-96.8	54	2.4	1.4-2.6	19	0.8	0.4-1.2	8	0.4	0.1-0.7	2165
8th Grade	1,723	93.2	91.8-94.2	67	3.7	3.1-4.9	40	2.0	1.4-2.6	23	1.1	0.6-1.6	1853
10th Grade	1,247	91.0	89.5-92.5	55	3.7	3.0-5.0	38	3.0	2.1-3.9	37	2.3	1.5-3.1	1377
12th Grade	1,359	84.7	83.3-86.8	79	5.0	3.9-6.1	76	4.7	3.7-5.7	90	5.5	4.4-6.6	1604
<b>Ethnicity</b>													
Japanese	852	94.9	93.6-96.4	21	2.1	1.1-2.9	15	1.7	1.1-2.9	13	1.3	0.4-1.7	901
Caucasian	1,180	90.6	89.5-92.6	52	4.1	2.9-5.1	36	2.4	1.2-2.8	43	2.9	2.1-3.9	1,311
Filipino	1,590	94.4	92.9-95.1	50	2.8	2.2-3.8	36	1.9	1.3-2.7	15	0.9	0.5-1.5	1,691
Native Hawaiian	1,123	89.8	89.3-91.7	63	5.1	3.8-6.2	37	2.7	2.1-3.9	39	2.5	2.1-3.9	1,262
Other Asian	479	97.0	95.5-98.5	3	0.7	0.1-1.9	4	0.7	0.1-1.9	8	1.6	0.8-3.2	494
Other Pacific Islander	530	87.1	84.3-89.7	34	6.1	4.1-7.9	22	4.1	2.4-5.6	17	2.7	1.6-4.4	603
2 or more ethnicities	155	93.8	90.4-97.6	7	2.8	0.4-5.6	3	1.3	0.5-2.5	6	2.1	0.1-4.1	171
Other	394	88.3	85.0-91.0	21	4.3	2.2-5.8	15	3.8	2.2-5.8	17	3.7	2.2-5.8	447

**Table 3.13: Frequency of Past 30 Day Alcohol Use  
by Gender, Grade, and Ethnicity (percentages are from weighted data)**

	Never Used			Occasional Use			Periodic Use			Frequent Use			n
	n	%	95%CI	n	%	95%CI	n	%	95%CI	n	%	95%CI	
<b>Overall Total</b>	5,304	78.9	78.0-80.0	934	12.4	11.2-12.8	593	7.4	6.4-7.6	109	1.4	0.8-1.2	6,940
<b>Gender</b>													
Male	2,359	80.8	79.6-82.4	363	11.3	9.9-12.1	222	6.3	5.2-6.9	57	1.6	1.5-2.5	3,001
Female	2,697	76.9	75.6-78.4	543	13.8	12.9-15.1	343	8.2	7.1-8.9	46	1.1	0.7-1.3	3,629
<b>Grade</b>													
6th Grade	1,965	92.2	90.9-93.2	135	5.5	5.0-7.0	37	1.8	1.4-2.6	13	0.5	0.6-1.4	2150
8th Grade	1,466	81.6	80.3-83.8	249	12.4	10.5-13.5	110	5.0	4.0-6.0	18	1.0	0.6-1.5	1843
10th Grade	960	71.7	69.6-74.4	234	16.9	15.0-19.0	154	10.3	8.4-11.6	16	1.2	0.5-1.5	1364
12th Grade	913	59.2	56.6-61.4	316	19.7	18.0-22.0	292	17.5	16.1-19.9	62	3.6	3.0-5.0	1583
<b>Ethnicity</b>													
Japanese	722	82.0	79.5-84.5	113	12.0	9.9-14.1	52	5.3	3.6-6.4	6	0.7	0.4-1.7	893
Caucasian	935	74.5	72.7-77.4	204	14.3	12.1-15.9	135	9.3	7.4-10.6	27	1.9	1.2-2.8	1,301
Filipino	1,346	82.6	81.2-84.8	200	11.0	9.5-12.5	121	5.9	4.9-7.1	10	0.5	0.5-1.5	1,677
Native Hawaiian	852	69.3	66.4-71.6	233	18.7	16.8-21.2	132	10.0	8.3-11.7	29	1.9	1.2-2.8	1,246
Other Asian	432	89.4	86.2-91.8	40	7.0	4.8-9.3	18	3.0	1.5-4.5	3	0.6	0.1-1.9	493
Other Pacific Islander	488	83.6	81.1-86.9	55	8.6	6.7-11.3	43	6.3	4.1-7.9	11	1.5	0.9-3.1	597
2 or more ethnicities	116	72.8	66.3-79.7	22	11.4	6.3-15.7	23	11.4	6.3-15.7	9	4.4	1.1-7.0	170
Other	315	72.4	67.8-76.2	53	11.8	9.0-15.0	63	12.6	9.9-16.1	14	3.3	1.4-4.6	445

**Table 3.14: Frequency of Past 30 Day Marijuana Use  
by Gender, Grade, and Ethnicity (percentages are from weighted data)**

	Never Used			Occasional Use			Periodic Use			Frequent Use			n
	n	%	95%CI	n	%	95%CI	n	%	95%CI	n	%	95%CI	
<b>Overall Total</b>	6,215	90.8	90.3-91.7	283	3.5	3.5-4.5	295	3.7	3.5-4.5	182	2.1	1.7-2.3	6,975
<b>Gender</b>													
Male	2,672	90.5	90.0-92.0	115	3.2	2.4-3.6	121	3.5	3.3-4.7	104	2.8	2.4-3.6	3,012
Female	3,266	91.0	90.1-91.9	155	3.7	3.4-4.6	158	3.8	3.4-4.6	72	1.6	1.6-2.5	3,651
<b>Grade</b>													
6th Grade	2,109	98.2	97.4-98.6	25	0.9	0.6-1.4	15	0.6	0.6-1.4	7	0.4	0.1-0.7	2,156
8th Grade	1,698	93.0	91.8-94.2	66	3.0	2.2-3.8	61	2.8	2.2-3.8	27	1.2	0.6-1.5	1,852
10th Grade	1,171	86.3	84.2-87.8	83	5.8	4.7-7.3	83	5.7	4.7-7.3	36	2.2	1.3-2.7	1,373
12th Grade	1,237	79.5	78.0-82.0	109	6.2	4.8-7.2	136	8.0	6.7-9.3	112	6.3	4.8-7.2	1,594
<b>Ethnicity</b>													
Japanese	834	93.6	92.5-95.6	25	2.4	1.1-2.9	27	2.7	1.9-4.1	12	1.3	0.4-1.7	898
Caucasian	1,099	85.7	84.1-87.9	59	4.3	2.9-5.1	79	5.7	4.7-7.3	68	4.3	2.9-5.1	1,305
Filipino	1,587	95.1	94.0-96.0	48	2.4	1.3-2.7	39	1.9	1.3-2.7	15	0.7	0.5-1.5	1,689
Native Hawaiian	1,058	85.8	84.1-87.9	82	5.6	4.7-7.3	72	5.6	4.7-7.3	42	2.9	2.1-3.9	1,254
Other Asian	476	96.6	95.5-98.8	6	1.2	0.1-1.9	7	1.3	0.1-1.9	5	0.9	0.1-1.9	494
Other Pacific Islander	535	91.0	88.7-93.3	32	4.5	3.3-6.7	21	2.9	1.6-4.4	12	1.6	0.9-3.1	600
2 or more ethnicities	143	87.9	83.1-92.9	8	3.8	1.1-6.9	12	4.4	1.1-6.9	8	3.9	1.1-6.9	171
Other	378	85.9	82.8-89.2	21	4.6	3.0-7.0	31	6.6	4.6-9.4	15	2.9	1.4-4.6	445

**Table 3.15: Frequency of Past 30 Day Prescription Drug Use  
by Gender, Grade, and Ethnicity (percentages are from weighted data)**

	Never Used			Occasional Use			Periodic Use			Frequent Use			n
	n	%	95%CI	n	%	95%CI	n	%	95%CI	n	%	95%CI	
<b>Overall Total</b>	6,740	97.3	96.6-97.4	107	1.3	0.8-1.2	74	0.9	0.8-1.2	42	0.5	0.8-1.2	6,963
<b>Gender</b>													
Male	2,909	97.5	97.5-98.5	41	1.1	0.6-1.4	28	0.8	0.6-1.4	23	0.6	0.6-1.4	3,001
Female	3,529	97.1	96.5-97.6	65	1.6	1.6-2.5	3 9	0.9	0.7-1.3	17	0.4	0.2-0.6	3,650
<b>Grade</b>													
6th Grade	2,120	98.9	98.6-99.4	9	0.4	0.1-0.7	8	0.3	0.1-0.5	8	0.3	0.1-0.5	2,145
8th Grade	1,804	97.9	97.4-98.6	18	0.9	0.6-1.5	12	0.6	0.6-1.5	14	0.6	0.6-1.5	1,848
10th Grade	1,311	96.4	95.0-97.0	32	1.9	1.3-2.7	23	1.3	0.5-1.5	6	0.3	0.5-0.6	1,372
12th Grade	1,505	94.5	93.9-96.1	48	2.8	2.2-3.8	31	1.8	1.3-2.7	14	0.8	0.5-1.5	1,598
<b>Ethnicity</b>													
Japanese	881	97.9	97.1-98.9	7	0.8	0.4-1.7	7	0.9	0.4-1.7	4	0.4	0.0-0.8	899
Caucasian	1,232	95.2	93.8-96.2	45	3.0	2.1-3.9	17	1.1	0.5-1.5	10	0.7	0.5-1.5	1,304
Filipino	1,667	99.2	98.5-99.5	9	0.4	0.1-0.7	7	0.2	0.0-0.4	4	0.2	0.0-0.4	1,687
Native Hawaiian	1,202	96.9	96.1-98.0	22	1.5	1.2-2.8	15	1.0	0.5-1.6	11	0.6	0.5-1.6	1,250
Other Asian	488	99.0	98.1-99.9	1	0.3	0.2-0.8	3	0.5	0.1-1.9	1	0.2	0.2-0.6	493
Other Pacific Islander	583	97.4	95.6-98.4	7	1.0	0.2-1.8	7	1.1	0.2-1.8	2	0.5	0.2-1.8	599
2 or more ethnicities	162	95.7	93.1-98.9	1	0.3	0.5-1.1	4	2.1	0.1-4.1	4	1.8	0.1-4.1	171
Other	412	93.3	90.6-95.4	12	2.9	1.4-4.6	13	2.7	1.4-4.6	5	1.2	0.1-1.9	442

**Table 3.16: Frequency of Past 30 Day Illicit Drug Use  
by Gender, Grade, and Ethnicity (percentages are from weighted data)**

	Never Used			Occasional Use			Periodic Use			Frequent Use			n
	n	%	95%CI	n	%	95%CI	n	%	95%CI	n	%	95%CI	
<b>Overall Total</b>	6,763	97.7	97.7-98.3	75	1.0	0.8-1.2	62	0.7	0.8-1.2	50	0.7	0.8-1.2	6,950
<b>Gender</b>													
Male	2,908	97.4	96.4-97.6	30	0.9	0.6-1.4	29	0.8	0.6-1.4	33	0.9	0.6-1.4	3,000
Female	3,559	98.1	97.5-98.5	39	1.0	0.7-1.3	26	0.5	0.3-0.7	13	0.4	0.2-0.6	3,637
<b>Grade</b>													
6th Grade	2,108	98.5	98.6-99.4	14	0.7	0.6-1.4	10	0.4	0.1-0.7	8	0.4	0.1-0.7	2,140
8th Grade	1,795	97.7	97.4-98.6	18	0.8	0.6-1.5	16	0.6	0.6-1.5	15	0.8	0.6-1.5	1,844
10th Grade	1,343	98.6	98.5-99.5	10	0.6	0.5-1.5	9	0.5	0.5-1.5	6	0.3	0.0-0.6	1,368
12th Grade	1,517	95.1	93.9-96.1	33	2.0	1.3-2.7	27	1.5	1.3-2.7	21	1.3	0.5-1.5	1,598
<b>Ethnicity</b>													
Japanese	880	98.2	97.1-98.9	5	0.6	0.4-1.7	7	0.7	0.4-1.7	3	0.5	0.4-4.7	895
Caucasian	1,244	96.1	94.9-97.1	26	1.7	1.2-2.8	20	1.3	0.5-1.5	13	0.9	0.5-1.5	1,303
Filipino	1,669	99.4	98.5-99.5	4	0.2	0.0-0.4	3	0.2	0.0-0.4	5	0.2	0.0-0.4	1,681
Native Hawaiian	1,217	97.5	97.2-98.8	14	1.1	0.5-1.6	12	0.7	0.5-1.6	9	0.6	0.5-1.6	1,252
Other Asian	483	98.6	98.1-99.9	4	0.9	0.1-1.9	1	0.2	0.2-0.6	2	0.3	0.2-0.8	490
Other Pacific Islander	582	97.3	95.6-98.4	5	0.8	0.2-1.8	9	1.3	0.2-1.8	3	0.6	0.2-1.8	599
2 or more ethnicities	160	94.4	90.4-97.6	5	2.6	0.4-5.6	3	1.6	0.1-4.1	3	1.3	0.5-2.5	171
Other	415	94.2	91.8-96.2	12	2.5	1.4-4.6	6	1.0	0.1-1.9	9	2.3	0.7-3.3	442

Cigarette use was most often reported in the past 30 days, compared to the other substances. More males (2.0%) reported frequent use, but females reported higher percentages of occasional use (females 3.9%, males 3.0%) and periodic use (females 2.9%, males 1.7%) than males. By grade, 12<sup>th</sup> graders (5.5%) and 10<sup>th</sup> graders (2.3%) reported the highest percentages of frequent use of cigarettes while 2.9% of Caucasian and 2.5% of Native Hawaiian students reported frequent cigarette use.

Alcohol was also one of the more commonly reported substances by students in the last 30 days, compared to the other substances, especially for occasional use. Higher percentages of males (1.6%) than females (1.1%) reported frequent use, but higher percentages of females reported occasional use (females 13.8%, males 11.3%) and periodic use (females 8.2%, males 6.3%). With regard to grade level, 12<sup>th</sup> graders reported higher rates of alcohol use for all occasions, but 8<sup>th</sup> and 10<sup>th</sup> graders also reported occasional (12.4% of 8<sup>th</sup> graders, 16.9% of 10<sup>th</sup> graders) and periodic use (10.3% of 10<sup>th</sup> graders). By ethnic group, Native Hawaiians (18.7%), Caucasians (14.3%), students of Other ethnicities (11.8%), Japanese (12.0%), and Filipinos (11.0%) reported the highest percentages of occasional use. Overall, compared to periodic use and frequent use, students reported the highest percentages for occasional alcohol use.

Marijuana was the most frequently used illicit drug. As with cigarettes and alcohol, a higher percentage of males (2.8%) reported frequent use than females (1.6%), but females reported slightly higher percentages of occasional use (females 3.7%, males 3.2%) and periodic use (females 3.8%, males 3.5%). By grade, 12<sup>th</sup> graders reported the most use for all occasions, including 6.3% reporting frequent use. Eighth grade and 10<sup>th</sup> grade students also reported occasional, periodic, and frequent use of marijuana. By ethnic group, the highest rates reported of occasional use were by Native Hawaiians (5.6%), Caucasians (4.3%), students of Other ethnicities (4.6%), and Pacific Islanders (4.5%). Caucasians (4.3%) and Native Hawaiians (2.9%) reported the highest percentages of frequent marijuana use.

Prescription drug use in the past 30 days, while not as frequently reported as cigarette, alcohol, and marijuana use, was reported more often than illicit drugs. Males reported higher percentages of frequent

use (males 0.6%, females 0.4%), but females reported slightly higher percentages of occasional use (females 1.6%, males 1.1%) and periodic use (females 0.9%, males 0.8%). Twelfth graders reported the most use of prescription drug use for all occasions, while 3.0% of Caucasians and 1.5% of Native Hawaiians reported occasional use.

Illicit drugs (hallucinogens, cocaine, methamphetamine, heroin, and tranquilizers) were not reported as being used as often as cigarettes, alcohol, marijuana, and prescription drugs. Males reported higher percentages of frequent use (males 0.9%, females 0.4%) and periodic use (males 0.8%, females 0.5%) than females. Females (1.0%) appeared more likely than males (0.9%) to report occasional use. Twelfth graders reported the most use of illicit drugs for all occasions. Students of Other ethnicities reported the most frequent use of illicit drug (2.3%).

#### COMPARISON TO NATIONWIDE PREVALENCE REPORTS

To get a better perspective of adolescent substance use in Hawai'i, prevalence rates for Hawai'i were compared with national data on adolescent substance use. Table 3.17 compares data from students in Hawai'i and results from the latest report from the national Monitoring the Future (MTF) study (Johnston et al., 2009). The table only lists substances with reported data from both the 2007-2008 Hawai'i Student ATOD Survey and the Monitoring the Future survey. Cells with dashes (–) indicate areas with no reported data. Table 3.17 presents lifetime and past 30 day prevalence rates nationwide and in Hawai'i for various substances by grade.

**Table 3.17: A Comparison of Nationwide and Hawai'i Substance Use Rates (in percentages) of Lifetime and Past 30 Day Use by Grade (percentages are from weighted data)**

	Lifetime Use		Past 30 Day Use	
	Nationwide 2008	Hawai'i 2007-2008	Nationwide 2008	Hawai'i 2007-2008
<b>Cigarettes</b>				
6th Grade	–	8.7	–	3.6
8th Grade	20.5	18.3	6.8	6.8
10th Grade	31.7	26.2	12.3	9.0
12th Grade	44.7	39.7	20.4	15.2
<b>Alcohol</b>				
6th Grade	–	15.6	–	7.8
8th Grade	38.9	36.2	15.9	18.4
10th Grade	58.3	56.5	28.8	28.3
12th Grade	71.9	72.4	43.1	40.8
<b>Marijuana</b>				
6th Grade	–	2.4	–	1.8
8th Grade	14.6	12.0	5.8	7.0
10th Grade	29.9	25.6	13.6	13.7
12th Grade	42.6	42.2	19.4	20.5
<b>Illicit Drugs</b>				
6th Grade	–	1.8	–	1.5
8th Grade	11.2	3.5	3.8	2.3
10th Grade	15.9	4.4	5.3	1.4
12th Grade	24.9	11.4	9.3	4.9
<b>Inhalants</b>				
6th Grade	–	6.3	–	4.2
8th Grade	15.7	9.7	4.1	4.2
10th Grade	12.8	7.8	2.1	2.6
12th Grade	9.9	8.6	1.4	1.8

**Table 3.17: A Comparison of Nationwide and Hawai'i Substance Use Rates (in percentages) of Lifetime and Past 30 Day Use by Grade (percentages are from weighted data), continued**

	Lifetime Use		Past 30 Day Use	
	Nationwide 2008	Hawai'i 2007-2008	Nationwide 2008	Hawai'i 2007-2008
<b>Cocaine</b>				
6th Grade	–	1.3	–	0.9
8th Grade	3.0	1.8	0.8	1.6
10th Grade	4.5	1.6	1.2	0.6
12th Grade	7.2	6.3	1.9	3.1
<b>Methamphetamine</b>				
6th Grade	–	1.0	–	0.8
8th Grade	2.3	1.4	0.7	1.5
10th Grade	2.4	1.0	0.7	0.5
12th Grade	2.8	3.1	0.6	1.6
<b>Heroin</b>				
6th Grade	–	0.7	–	0.7
8th Grade	1.4	1.3	0.4	1.4
10th Grade	1.2	0.9	0.4	0.5
12th Grade	1.3	2.7	0.4	1.6
<b>Hallucinogens</b>				
6th Grade	–	0.7	–	0.8
8th Grade	3.3	1.9	0.9	1.4
10th Grade	5.5	2.5	1.3	1.0
12th Grade	8.7	7.4	2.2	2.3
<b>Steroids</b>				
6th Grade	–	1.5	–	1.2
8th Grade	1.4	1.5	0.5	1.3
10th Grade	1.4	1.2	0.5	0.8
12th Grade	2.2	2.6	1.0	1.7
<b>Ecstasy/MDMA</b>				
6th Grade	–	0.7	–	0.6
8th Grade	2.4	1.6	0.8	1.7
10th Grade	4.3	1.9	1.1	0.9
12th Grade	6.2	5.4	1.8	2.0
<b>Rohypnol</b>				
6th Grade	–	0.7	–	0.7
8th Grade	0.7	1.5	0.1	1.4
10th Grade	0.9	0.8	0.2	0.5
12th Grade	–	1.9	–	1.2
<b>Smokeless Tobacco</b>				
6th Grade	–	2.2	–	1.3
8th Grade	9.8	3.9	3.5	2.9
10th Grade	12.2	4.1	5.0	1.6
12th Grade	15.6	6.6	6.5	2.7

For lifetime substance use, prevalence rates were lower for students in Hawai'i in comparison to students nationwide. The slight exceptions involved Hawai'i students in the 12<sup>th</sup> grade who reported higher rates of lifetime alcohol use (Hawai'i 72.4%, nationwide 71.9%), methamphetamine (Hawai'i 3.1%, nationwide 2.8%), heroin (Hawai'i 2.7%, nationwide 1.3%), and steroids (Hawai'i 2.6%, nationwide 2.2%). Hawai'i prevalence rates for marijuana and 8<sup>th</sup> and 10<sup>th</sup> grade alcohol use were only slightly lower than nationwide rates. For example, marijuana use rates among 12<sup>th</sup> graders (nationwide 42.6%, Hawai'i 42.2%) were nearly the same. The biggest differences for lifetime rates were for illicit drugs: 8<sup>th</sup> graders (11.2% nationwide, 3.5% Hawai'i), 10<sup>th</sup> graders (15.9% nationwide, 4.4% Hawai'i), and 12<sup>th</sup> graders (24.9% nationwide, 11.4% Hawai'i).

For past 30 day substance use of inhalants, cocaine, methamphetamine, heroin, hallucinogens, steroids, and ecstasy, students in Hawai'i reported slightly higher rates in comparison to the nation. Differences in past 30 day substance use prevalence rates were found between students in Hawai'i and students throughout the nation. For past 30 day cigarette use, comparable rates for 8<sup>th</sup> grade (Hawai'i 6.8%, nationwide 6.8%) were found, while 10<sup>th</sup> (Hawai'i 9.0%, nationwide 12.3%) and 12<sup>th</sup> (Hawai'i 15.2%, nationwide 20.4%) grade students in Hawai'i reported lower rates.

For past 30 day alcohol use, 8<sup>th</sup> grade students in Hawai'i reported slightly higher prevalence rates (Hawai'i 18.4%, nationwide 15.9%). However, comparable rates were found for 10<sup>th</sup> grade students and slightly lower rates for 12<sup>th</sup> grade students in Hawai'i (Hawai'i 40.8%, nationwide 43.1%) compared to the nation.

For past 30 day marijuana use, slightly higher rates were reported by students in Hawai'i compared to the nation (8<sup>th</sup> grade = Hawai'i 7.0%, nationwide 5.8%; 10<sup>th</sup> grade = Hawai'i 13.7%, nationwide 13.6%; 12<sup>th</sup> grade = Hawai'i 20.5%, nationwide 19.4%).

## ONSET OF YOUTH SUBSTANCE USE

---

Prior to the 1970's, adolescents were considered to be miniature versions of adults and findings and/or research relating to adult diagnoses and treatment were automatically applied to adolescents without considering the unique distinctions between adults and adolescents. In the 1970's, a greater awareness that more research must be conducted, taking into account the unique differences between adults and adolescents, began to emerge. Researchers have utilized various terminologies to describe the onset of adolescent substance use. The terms most often used are *onset* of substance use, *early onset* of substance use, *age of first use*, and to a lesser extent, *initiation* of substance use. All of these terms typically refer to the same thing – the age at which adolescents first used a particular substance. In addition, the literature reported age distinctions among adolescents. Generally, studies split adolescents into two age groups: younger than 15 and 15 or older (e.g., Hingson, Heeren, & Winter, 2006; McGue & Iacono, 2005). For the purposes of this study, we will be reporting on onset rates for adolescents 14 or younger and for adolescents 15 or older. Research has shown that onset of substance use before the age of 15 is associated with later substance use problems (Anthony & Petronis, 1995; DeWit, Adlaf, Offord, & Ogborne, 2000; Gruber, DiClemente, Anderson, & Lodico, 1996; Hingson, et al., 2006).

Over the past few decades there has been an increase in the number of studies addressing the risks associated with onset of substance use among adolescents. For example, a number of early studies have shown that early onset of alcohol and drug use is associated with later alcohol and drug-related problems (Anthony & Petronis, 1995; Fergusson, Lynskey, & Horwood, 1994; Hasin & Glick, 1992; Jessor & Jessor, 1975; Robins & Przybeck, 1985; Windle, 1991). More recent studies have found similar findings in that adults experiencing problems with drugs and alcohol were likely to have started using substances as adolescents (Chen, Storr, & Anthony, 2009; DeWitt, et al., 2000; Grant & Dawson, 1997; Hingson, et al., 2006; Stueve & O'Donnell, 2005; Warner & White, 2003). Based on these findings, it is suggested that

programs that delay the onset of adolescent substance use are most effective in reducing alcohol and drug-related problems.

Researchers have found a variety of possible reasons for adolescents to begin using substances at a young age. Adolescents raised in homes with parents who were tolerant of alcohol use and who were also exposed to alcohol as children are more likely to have alcohol problems at younger ages (Fergusson et al., 1994). Adolescents who went through particularly adverse childhood experiences were not only more likely to drink earlier than their peers, but were also more likely to drink as a way to cope with their problems (Rothman, Edwards, Heeren & Hingson, 2008). Studies have also shown that peer influence (Ellickson, Bird, & Orlando, 2003), sibling substance use (D'Amico & Fromme, 1997), and parent substance use (Beal, Ausiello, & Perrin, 2001) have impacted adolescent initiation of substance use. Experimentation is also a factor for adolescent substance use. Normal and healthy youth begin to experiment and explore their boundaries, (Shedler & Block, 1990) and experimentation frequently occurs among adolescents (Winters & Fahnhorst, 2006). Experimentation with and initial use of alcohol, cigarettes, and marijuana typically begins in the teens and tends to decline by the age of 20 (Chen & Kandel, 1995).

As articulated by Kandel (1975), the gateway hypothesis theorizes that youth progress through a sequence in their use of substances, culminating in illicit drugs. Youth typically begin to use either alcohol and/or tobacco, go on to marijuana, and finally illicit drugs such as cocaine or heroin. Numerous subsequent studies have supported this finding (Biederman et al., 2006; Fergusson et al., 1994; Guerra, Romano, Samuels, & Kass, 2000; Kandel, Yamaguchi, & Chen, 1992; Yamaguchi & Kandel, 1984; Yu & Williford, 1994). To be clear, Kandel and colleagues (1992) caution that although there is an obvious sequence in drug use, not all adolescents who use a particular drug will always move on to drugs higher up in the sequence. For example, not all adolescents who drink alcohol will progress to using an illicit drug such as cocaine. However, most youth who use illicit drugs usually started using alcohol and tobacco first, which serve as gateway drugs to the illicit drugs (Kandel & Yamaguchi, 1993). The gateway theory's

influence is such that it has helped shape the United States government's policy on drug prevention, with strong support for strategies that prevent or decrease alcohol and tobacco use in an effort to decrease or prevent later hard drug use (Golub & Johnson, 2001).

Many negative outcomes associated with early use of substances by adolescents have been documented in the literature. Studies have shown that early onset of substance use and/or any substance use has been linked with motor vehicle accidents, drinking and driving, poor academic achievement, absenteeism from school, fighting or violence, conduct disorder, depression, suicide, and other mental health issues (Gruber et al., 1996; Hingson, Heeren, & Zakocs, 2001; McGue, Iacono, Legrand, & Elkins, 2001). Early drinkers were also more likely to engage in unprotected sexual intercourse and females were more likely to become pregnant (Hingson et al., 2003; Stueve & O'Donnell, 2005).

#### AGE AT FIRST USE OF SUBSTANCES

Numerous studies have shown that adolescents typically begin using substances such as cigarettes, alcohol, and/or marijuana, before progressing to other harder drugs (Biederman et al., 2006; Guerra et al., 2000; Kandel, Yamaguchi, & Chen, 1992; Yamaguchi & Kandel, 1984; Yu & Williford, 1994). Although cigarettes, alcohol, and marijuana have been a large focus in the onset literature, prescription drug use has recently become a drug of concern, as more adolescents are reporting prescription drug use (Johnston, et al., 2009). Therefore, onset findings for prescription drug use are also reported in this section.

Students were asked the following question: *How old were you when FIRST tried various substances.* The students' response choices were coded as follows: *0 = Never have; 9 = age 9 or younger; 10 = age 10; 11 = age 11; 12 = age 12; 13 = age 13; 14 = age 14; 15 = age 15; 16 = age 16; 17 = age 17 or older.* As mentioned previously, studies regarding onset of use typically divide adolescents into two categories: 14 or younger and 15 or older. These studies have also shown that early adolescent onset (age 14 or younger) of substance use is associated with later problems with drug and alcohol use. Similarly, the 2007-2008

Hawai'i Student ATOD Study categorized the students into three groups by recoding the question in order to capture the differences between youth substance use before age 14 and substance use for youth age 15 or older. Therefore, the students' response choices were recoded as follows: 0 = students who have never used substances, 1 = students who first used substances before age 14, and 2 = students first used substances at 15 years of age or older. This recoding allows for a focus on the important distinctions of substance use between younger youth and older youth - data which can be used to guide prevention and treatment efforts.

Age of first use for cigarettes, alcohol, marijuana, and prescription drugs has been reported in Table 3.18. Therefore, the numbers and percentages of students who reported first use of a substance can be found for each drug (cigarettes, alcohol, marijuana, and prescription drugs) by gender, grade level, and ethnic group.

<b>Table 3.18: Age at First Use of Cigarettes, Alcohol, Marijuana, and Prescription Drugs by Gender, Grade, and Ethnicity (percentages are from weighted data)</b>												
	<b>Cigarettes</b>			<b>Alcohol</b>			<b>Marijuana</b>			<b>Prescription Drugs</b>		
	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI
<b>Overall Total</b>												
Never used	5,505	79.2	78.1-80.0	3,955	59.7	58.9-61.2	5,598	82.7	82.0-84.0	6,573	94.9	94.5-95.5
14 or younger	1,289	17.8	16.9-18.7	2,357	31.6	30.9-33.1	983	12.2	11.2-12.8	224	2.8	2.4-3.2
15 or older	234	2.9	2.5-3.3	670	8.6	7.9-9.3	431	5.4	4.9-5.9	201	2.3	2.0-2.7
<b>Gender</b>												
Male												
Never used	2,439	80.9	79.6-82.4	1,807	62.4	60.1-63.7	2,415	82.4	80.6-83.4	2,851	95.3	94.2-95.8
14 or younger	505	16.2	14.7-17.3	925	28.7	27.4-30.6	431	12.4	10.8-13.2	82	2.2	1.7-2.7
15 or older	95	2.8	2.2-3.4	295	8.9	7.9-9.9	190	5.2	4.4-6.0	94	2.5	1.9-3.1

**Table 3.18: Age at First Use of Cigarettes, Alcohol, Marijuana, and Prescription Drugs by Gender, Grade, and Ethnicity (percentages are from weighted data), continued**

	Cigarettes			Alcohol			Marijuana			Prescription Drugs		
	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI	<i>n</i>	%	95%CI
<b>Gender</b>												
Female												
Never used	2,823	77.8	76.7-79.3	1,972	57.5	55.9-59.0	2,932	82.7	81.8-84.2	3,434	94.7	94.3-95.7
14 or younger	726	19.2	17.7-20.3	1,317	33.9	32.4-35.5	505	12.0	11.0-13.1	127	3.1	2.5-3.7
15 or older	128	3.0	2.5-3.6	357	8.7	7.8-9.6	231	5.2	4.5-5.9	100	2.2	1.7-2.7
<b>Grade<sup>1</sup></b>												
10 <sup>th</sup> Grade												
Never used	1,019	73.8	71.6-76.3	578	43.5	41.4-46.6	995	74.4	71.7-76.3	1,273	94.1	92.7-95.3
14 or younger	306	22.7	20.8-25.2	650	46.2	43.4-48.6	297	20.4	17.8-22.1	64	3.7	2.7-4.7
15 or older	49	3.5	2.5-4.5	137	10.3	8.4-11.6	78	5.2	4.0-6.4	36	2.2	1.4-3.0
12 <sup>th</sup> Grade												
Never used	967	60.3	57.8-62.4	430	27.6	25.8-30.2	894	57.8	55.6-60.4	1,378	86.4	84.2-87.8
14 or younger	455	28.4	25.8-30.2	626	38.7	36.6-41.4	360	21.3	19.0-23.0	67	4.2	3.2-5.2
15 or older	184	11.3	9.5-12.5	530	33.8	31.7-36.3	349	20.9	19.3-23.4	161	9.4	8.0-10.8
<b>Ethnicity</b>												
Japanese												
Never used	783	87.7	85.7-90.3	537	61.5	58.3-64.7	767	86.7	84.8-89.2	861	95.6	94.7-97.3
14 or younger	88	9.2	7.3-11.1	248	26.7	23.8-29.5	78	8.1	6.3-9.8	19	2.0	1.1-2.9
15 or older	33	3.0	1.9-4.1	112	11.8	9.7-14.0	57	5.2	3.8-6.7	23	2.4	1.4-3.4
Caucasian												
Never used	1,015	77.8	75.6-80.1	659	52.6	49.9-55.4	946	74.0	71.6-76.4	1,173	90.8	89.4-92.6
14 or younger	234	17.5	15.5-19.6	517	38.2	35.4-40.6	266	18.8	16.7-20.9	65	4.7	3.6-5.9
15 or older	63	4.7	3.6-5.9	125	9.3	7.7-10.9	101	7.2	5.8-8.6	69	4.4	3.3-5.5

**Table 3.18: Age at First Use of Cigarettes, Alcohol, Marijuana, and Prescription Drugs by Gender, Grade, and Ethnicity (percentages are from weighted data), continued**

	<i>Cigarettes</i>			<i>Alcohol</i>			<i>Marijuana</i>			<i>Prescription Drugs</i>		
	<i>n</i>	<i>%</i>	<i>95%CI</i>	<i>n</i>	<i>%</i>	<i>95%CI</i>	<i>n</i>	<i>%</i>	<i>95%CI</i>	<i>n</i>	<i>%</i>	<i>95%CI</i>
<b>Ethnicity</b>												
Filipino												
Never used	1,382	81.6	80.0-84.0	1,023	63.3	60.7-65.3	1,489	88.9	87.5-90.5	1,651	97.4	96.2-97.8
14 or younger	282	16.2	14.3-17.7	525	28.5	26.3-30.6	139	7.2	6.0-8.4	32	1.7	1.1-2.3
15 or older	46	2.2	1.5-2.9	159	8.1	6.8-9.4	84	3.9	3.0-4.8	20	0.9	0.5-1.5
Native Hawaiian												
Never used	904	72.3	69.5-74.5	633	52.5	49.7-55.3	906	74.6	72.6-77.4	1,179	94.9	93.8-96.2
14 or younger	323	25.0	22.6-27.4	507	39.5	37.3-42.7	262	19.6	17.8-22.2	38	2.6	1.7-3.5
15 or older	37	2.7	1.8-3.6	113	8.0	6.5-9.5	86	5.9	4.6-7.2	41	2.6	1.7-3.5
Other Asian												
Never used	443	90.0	87.4-92.6	337	71.8	68.0-76.0	458	93.7	91.9-96.1	481	98.1	96.8-99.3
14 or younger	43	8.2	5.8-10.6	115	20.8	17.4-24.6	18	3.5	1.9-5.1	3	0.5	0.0-1.1
15 or older	10	1.8	0.6-3.0	42	7.4	5.1-9.7	18	2.8	1.4-4.3	8	1.4	0.4-2.4
Other Pacific Islander												
Never used	442	72.4	68.4-75.6	394	68.4	64.2-71.7	493	85.2	82.1-87.9	576	96.3	94.4-97.6
14 or younger	140	24.6	21.7-28.0	156	24.4	21.0-27.9	71	9.6	7.2-12.0	17	2.5	1.3-3.8
15 or older	21	3.0	1.6-4.4	48	7.2	5.1-9.3	36	5.2	3.4-7.0	8	1.2	0.3-2.1
2 or more ethnicities												
Never used	120	72.7	66.3-79.6	81	50.6	43.5-58.5	121	77.1	70.7-83.3	154	91.8	88.0-96.1
14 or younger	47	25.5	19.1-32.1	76	41.5	34.6-49.4	38	16.9	11.4-22.6	14	6.4	2.7-10.1
15 or older	5	1.8	0.0-3.8	15	8.0	4.0-12.1	12	5.9	2.4-9.4	4	1.8	0.0-3.4
Other												
Never used	314	70.6	66.8-75.2	217	50.5	44.8-55.1	320	74.6	70.6-78.7	390	89.2	88.1-91.9
14 or younger	115	26.1	21.9-30.1	184	41.3	36.4-45.6	97	20.0	16.2-23.7	32	6.3	4.0-8.6
15 or older	17	3.3	1.6-5.0	41	8.3	5.7-10.9	28	5.5	3.4-7.6	22	4.5	2.6-6.4

For age at first substance use by grade, 6<sup>th</sup> and 8<sup>th</sup> grade students were not reported because rates between students 14 or younger and students 15 or older cannot be compared, as there are rarely students 15 years of age or older in the 6<sup>th</sup> and 8<sup>th</sup> grades. Therefore, only responses for 10<sup>th</sup> and 12<sup>th</sup> grade students are reported in Table 3.18. For age at first substance use by gender, use of cigarettes, alcohol, and marijuana were more likely to be initiated before the age of 14 for both males and females. The only exception was prescription drug use for males, who reported a higher percentage of use at age 15 or older. Alcohol had the highest reported percentages as a substance that students used when they tried a substance for the first time.

First, cigarette use seemed to be more likely to occur at 14 or younger rather than 15 years of age or older, with a higher percentage of 12<sup>th</sup> graders (28.4%) reporting first use at age 14 or younger than 10<sup>th</sup> graders (22.7%).

For alcohol, students in the 10<sup>th</sup> grade (46.2%) appeared more likely than 12<sup>th</sup> grade students (38.7%) to use alcohol before 14 years of age than after age 15, though both groups reported highest percentages of first use of alcohol at 14 or younger.

Rates for first marijuana use were similar for both grades; students in the 12<sup>th</sup> grade (21.3%) and students in the 10<sup>th</sup> grade (20.4%) appeared more likely to use marijuana for the first time before age 14, compared to marijuana use after age 15.

While first use of cigarettes, alcohol, and marijuana seemed more likely to occur at the younger ages for 10<sup>th</sup> and 12<sup>th</sup> graders, rates for first use of prescription drugs were different. A higher percentage of 10<sup>th</sup> graders (3.7%) reported prescription drug use at age 14 or younger than 15 or older. In contrast, more than twice as many 12<sup>th</sup> grade students (9.4%) reported first use of prescription drugs at 15 years of age or older.

Across gender, higher percentages of females than males reported use of cigarettes (female 19.2%, male 16.2%), alcohol (female 33.9%, male 28.7%), and prescription drugs (female 3.1%, male 2.2%) before 14 years of age. The only exception was marijuana, where males (12.4%) reported a slightly higher percentage of use than females (12.0%) at age 14 or younger. Higher percentages of females reported use of cigarettes, alcohol, marijuana, and prescription drugs at age 14 or younger when compared to males. In contrast, a higher percentage of males reported use of prescription drugs at 15 years of age or older, but were more likely to use cigarettes, alcohol, and marijuana before 14 years of age.

For first substance use by ethnicity, higher percentages of reported use of cigarettes, alcohol, and marijuana occurred at age 14 or younger for all ethnicities, compared to first use at age 15 or older. Across ethnic groups, alcohol had the highest reported percentages as a substance that students used when they tried a substance for the first time.

Rates for first cigarette use at age 14 or younger, compared to first use at 15 or older, were higher for Native Hawaiians (25.0%), Other Pacific Islanders (24.6%), students belonging to two or more ethnic groups (25.5%), and students of Other ethnicities (26.1%). For alcohol, students belonging to two or more ethnic groups (41.5%), Other students (41.3%), Native Hawaiians (39.5%), and Caucasians (38.2%) reported higher percentages of alcohol use at age 14 or younger (although it should be noted that there were smaller *n* sizes for the number of students who reported two or more ethnic groups and students of Other ethnicities). In addition, the Other ethnic group also reported higher percentages of early use of alcohol compared to the other substances. Filipino (28.5%), Japanese (26.7%), Other Pacific Islanders (24.4%), and Other Asian (20.8%) students reported higher percentages of alcohol use at age 14 or younger. For marijuana, higher percentages of students of Other ethnicities (20.0%), Native Hawaiians (19.6%), and Caucasians (18.8%) reported marijuana use at age 14 or younger than at age 15 or older. Prescription drug use had the lowest reported percentages as a substance of first use for students age 14 or younger and age 15 or older. Students of Other ethnicities (6.3%) and Caucasians (4.7%) reported higher percentages of use

at 14 or younger, while Native Hawaiian students reported first use of prescription drugs at equal rates for 14 or younger (2.6%) and 15 or older (2.6%).

## CONCLUSION

---

Females reported higher percentages of cigarette, alcohol, and prescription drug use than males in the past 30 days. A possible explanation for this was that the 2007-2008 Hawai'i Student ATOD Study included more female participants than male participants. However, studies have shown that female adolescents have been narrowing the substance use gap with males, who have traditionally been shown to be more likely to use substances (Wallace et al., 2003). Based on these findings, it is possible that female youth in Hawai'i have followed the national trend. Future studies should focus on gender differences to determine whether this finding holds true. In addition, possibly conducting qualitative studies to ask students about the reasons for using drugs to see if they vary between males and females would be helpful. Knowing if such differences exist may allow for interventions that are gender specific and could prove to be more effective interventions for youth.

Though most students have never used cigarettes, alcohol, or marijuana, the majority of students who did use these substances began at 14 years of age or younger which indicates that prevention efforts must target students earlier than middle school. Studies have shown that early onset of substance use is associated with later drug and alcohol problems (Anthony & Petronis, 1995; Fergusson, Lynskey, & Horwood, 1994; Hasin & Glick, 1992; Robins & Przybeck, 1985; Windle, 1991). Therefore, prevention programs that recognize and addresses the developmental differences between younger and older adolescents can help younger adolescents to delay or prevent onset of substance use as well as reduce prevalence of use among older adolescents. Efforts must be sustained and prolonged to prevent attitudes favorable toward drug use from increasing as youth grow older.

As a relatively new drug category, youth may not be aware of the dangers of prescription drug use outside of medical purposes. Also, youth may feel that prescription drugs are safer to use because they are legal drugs. Prevention efforts related to prescription drug use may need to include awareness about the dangers of such substances and programs should address these beliefs as well.

Overall, the 2007-2008 Hawai'i Student ATOD Study showed that Caucasians, Native Hawaiians, and students of Other ethnicities were more likely than other ethnic groups to first use cigarettes, alcohol, marijuana, and prescription drugs at age 14 or younger. These groups were also more likely than others to have used cigarettes, alcohol, marijuana, prescription drugs, and other illegal drugs. This finding suggests that culturally driven programs should be explored.

Results showed that cigarettes, alcohol, marijuana, and to a lesser extent, prescription drugs and illicit drugs, were reported as being used by youth in the past 30 days. Efforts, therefore, must focus on preventing the use of these substances, in contrast to prevention efforts that focus on substance use overall and do not target specific substances.

For the most part, lifetime substance use among students in Hawai'i is lower than that of students nationwide. However, the data also showed that students in Hawai'i reported more use of illicit substances in the past 30 days than students nationwide. It is important to monitor this in order to determine if illicit drug use is increasing and if this will impact prevention and treatment needs in the future.

## CHAPTER 4: RISK AND PROTECTIVE FACTORS

### INTRODUCTION

---

All youth are exposed to both risk and protective factors that influence the development of substance use. Risk factors place individuals at greater than average risk for substance use, whereas protective factors buffer youth from initiating or continuing use. Typically, the greater the number of risk factors, the higher a youth's susceptibility. In contrast, the accumulation of protective factors appears to reduce risk. Researchers have also found that the more the risks in a child's life can be reduced, the less vulnerability that child will have to subsequent health and social problems (Hawkins, Catalano, & Miller, 1992). Youth substance use arises from a complex interaction of individual, family, peer, community, and societal factors (United Nations Office for Drug Control and Crime Prevention, 2000).

### DEFINITIONS OF RISK AND PROTECTIVE FACTORS

A clear understanding of terminology is essential to comprehend the data and results that are presented in this report. A risk factor is defined as “those characteristics, variables, or hazards that, if present for a given individual, make it more likely that this individual, rather than someone selected at random from the general population, will develop a disorder” (Mrazek & Haggerty, 1994). Risk factors for substance use help identify the individuals with a greater likelihood of developing substance use problems. The presence of a risk factor increases the likelihood that an individual will use a substance as a result of their exposure to this risk domain.

A protective factor is defined as the reduction in the “likelihood of problem behavior either directly or by mediating or moderating the effect of exposure to risk factors” (Arthur et al., 2002). Risk and protective factors enable the identification of specific factors that are likely to increase the risk of substance

use or insulate against these influences. Using this approach, data can help to shape policy decisions and assist in establishing effective prevention and treatment programs.

## OVERVIEW OF RISK AND PROTECTIVE FACTOR DOMAINS

*Risk and Protective Factors for Alcohol and Other Drug Problems in Adolescence and Early Adulthood: Implications for Substance Abuse Prevention* is the seminal report in this field that has guided the majority of subsequent work and research on adolescent substance use (Hawkins et al., 1992). Since publication, this article has been influential in shaping the direction of adolescent substance use research. The authors suggested that a risk-focused approach is the most effective means of confronting and reducing adolescent substance use. Recent findings have noted that individual and peer risk factors are strongly linked to lifetime use of alcohol, tobacco, and marijuana (Simons-Morton, 2007). However there have been some conflicting findings, with other studies (Bauman & Ennett, 1996; Kobus, 2003) arguing that the influence of peer risk and protective factors has been overemphasized. Additionally, community influences were argued by others to be the strongest protective factor (Cleveland et al., 2008). These and other findings offer guidance for the future direction of research locally, as Hawai'i's ethnic diversity allows for underrepresented areas of research to be developed.

### *Individual*

Along with peer, the individual domain has been reported to have the strongest association with recent (past 12 months) alcohol, tobacco, and marijuana use (Cleveland et al., 2008). The individual domain includes attitudes toward drug use, antisocial behavior, and attitudes toward antisocial behavior. Additionally, other factors such as sensation seeking have also been linked to alcohol and other drug use among individual adolescents (Hawkins et al., 1992). These results from the literature indicate the need for greater research in this domain of adolescent substance use, as it includes important risk and protective factors that are a source of contested findings.

### *Peer*

The peer domain focuses on peer substance use, peer antisocial or deviant behavior and peer disapproval of substance use. Peer risk and protective factors have been reported to be strongly associated with both lifetime and recent substance use among adolescents (Cleveland et al., 2008). However, some have questioned the importance of peer factors on substance use among adolescents (Jaccard, Blanton, & Dodge, 2005) making this a particularly important and contested area of focus. Findings from the 1999 National Household Survey on Drug Abuse showed that peer and individual domains had the strongest association with alcohol, tobacco and marijuana use among adolescents in the past year (Wright & Fitzpatrick, 2004). While the strength of the peer domain has recently been questioned by some who believe it has been overemphasized at the expense of other factors (Jaccard et al., 2005; Maxwell, 2002), the peer domain remains an area of focus not yet fully understood and therefore requiring further research to accurately gauge its importance. The emphasis of literature on peer factors must also be tempered by that of other studies that note the difficulty in measuring peer influence upon substance use (Bauman et al., 1996; Mason, Hitchings, & Spoth, 2008).

### *Family*

Risk and protective factors research associated with the family domain has typically focused on the bond between parents and children and the outcome of disruptions to this relationship. Not surprisingly, disrupted family processes, such as divorce, have been associated with various problem behaviors, including substance use (Gavazzi, Lim, Yarcheck, Bostic, & Scheer 2008). However, regular family meals have been shown to be a long-term protective factor against substance use among female adolescents over the five year study period (Eisenberg, Neumark-Sztainer, Fulkerson, & Story, 2008).

### *School*

The school domain focuses on academic performance, educational aspirations, and school commitment among the surveyed adolescents in Hawai'i. Other major studies have found that students who indicated having strong school protective factors reported less substance use. Additionally, it has been reported that increasing student commitment and attachment to school should be a goal among adolescents as it has been shown to reduce overall substance use (Guo, Hawkins, Hill, & Abbott, 2001).

### *Community*

The community domain focuses on adolescents' personal interactions with other individuals in different areas or domains of his or her life distinct from friends (peer domain), teachers and classmates (school domain), and parents, siblings, and other relatives (family domain). Previous literature has reported a correlation between level of neighborhood attachment and substance use (Arthur et al., 2002).

## INDIVIDUAL DOMAIN

### INTRODUCTION

---

Peer, family, and individual factors are considered the most significant predictors of behaviors related to substance use (Beyers, Toumbourou, Catalano, Arthur, & Hawkins, 2004). Another report similarly showed that individual and peer risk factors were found to be the risk factors most strongly related to adolescent substance use (Cleveland, Feinberg, Bontempo, & Greenberg, 2008). Earlier work demonstrated that individual factors played a more important role in the development of substance use than associating with deviant peers (Dobkin, Tremblay, Masse, & Vitaro, 1995). Specifically, favorable attitudes toward drug use and antisocial behavior, antisocial behaviors, and sensation seeking are some factors that have been linked to an increased risk for cigarette, alcohol, and marijuana use (Beyers et al., 2004).

One individual risk factor commonly found to be associated with adolescent substance use is early initiation of problem behaviors including early use of substances. The younger individuals are at the initiation of alcohol use, the more likely they are to develop significant alcohol related problems. DeWit and colleagues (2000) reported that individuals whose first alcohol use occurred between the ages of 11 and 14 were at the highest risk for development of alcohol use disorders. Furthermore, the influence of peers, perceptions of the harmfulness of alcohol use, parents' alcohol use, and proactive parenting measured in the late stages of childhood have been shown to influence the age of alcohol use initiation (Hawkins et al., 1997).

Antisocial beliefs is another factor that has been linked to adolescent substance use in the literature. Favorable attitudes toward antisocial behavior appear to be a factor involved in adolescent substance use. Additionally, favorable attitudes toward antisocial behavior were linked to an increased risk of two to three times for cigarette, alcohol, and marijuana use (Beyers et al., 2004). Ethnicity can also be a factor affecting adolescent substance use and antisocial behavior. A study by Sakai, Risk, Tanaka, and Price (2008) showed that Asians with conduct disorders had a strong likelihood of also having any substance use disorder, nicotine dependence, an alcohol use disorder, and abuse or dependence of marijuana. They also reported that the association between conduct disorder and substance use disorders is stronger in Asians than that observed in Caucasians.

Conduct disorder is most commonly associated with childhood or adolescent antisocial behavior. According to the DSM-IV (American Psychiatric Association, 1994), conduct disorder is classified as a behavioral pattern in which the violation of others' basic rights and significant age-appropriate rules of society occur. Conduct disorder, including antisocial behavior, is most commonly linked to substance abuse (Nation & Heflinger, 2006). It has been reported that psychological difficulties, antisocial behavior in particular, are considered risk factors for adolescent substance use (Swadi, 1999). Impulsivity, aggression, and conduct problems, all characteristics often associated with antisocial behavior, have also been shown

to put adolescents at increased risk for substance use (Poikolainen, 2002). It has been suggested that problems emerging early in childhood such as cognitive and regulatory impairments and behavioral problems are the reason individual risk factors put children at an increased risk for ATOD use. In adolescence, these problems have been linked to sensation seeking, rebelliousness, low perceived risk, and high reward sensitivity to ATOD use (Cleveland et al., 2008).

With regard to gender differences, Windle (1990) reported that for females, property crimes such as theft and vandalism were more related to substance use in late adolescence in comparison to other types of offenses. Students who met criteria for lifetime alcohol abuse were highly likely male and had a history of behavioral deviance before the age of 15 (MacDonald, Fleming, & Barry, 1991).

Another individual risk factor for adolescent substance use is risk taking and sensation seeking behavior. One study found that scoring high on sensation seeking was linked to four types of risk taking behavior of which substance use was one (Wagner, 2001). Further, thrill and adventure seeking, experience seeking, and disinhibition, all subtypes of sensation seeking, were effective predictors of future substance use. Thrill and adventure seeking was related to moderate alcohol use in males, experience seeking was linked to marijuana use in males, and disinhibition was associated with general drug use in both males and females. Pedersen (1991) demonstrated that there are often gender differences in how risk and protective factors influence substance use.

Adolescents' values about substance use is another factor that has been shown to be associated with substance use. Studies have shown that adolescents' pro-drug beliefs were one of the best predictors of simultaneous alcohol and marijuana use (Collins et al., 1999). Among adolescents who intended to use substances, their own personal beliefs were more important than the beliefs of other important people in their lives (O'Callaghan et al., 2003). Additionally, O'Connor and colleagues (2007) showed that as adolescents grow older, they perceive more benefits from alcohol and tobacco use than negative consequences associated with substance use.

Studies of adolescents have shown perceptions of harmfulness to be associated with drug and alcohol use. For example, adolescents who did not perceive substance use to be harmful were more likely to use substances. Conversely, adolescents who associated harm with substance use were less likely to be users (Alter et al., 2006; Bachman et al., 1998; Danseco et al., 1999; Johnson et al., 2000; O’Callaghan et al., 2003; O’Callaghan et al., 2006). Based on the literature, it is evident that individual risk and protective factors are important when considering which factors have an effect on adolescent substance use.

Similar to previous Hawai’i Student ATOD Surveys, eight individual domain factors were measured in this study: (1) early initiation of problem behaviors; (2) antisocial beliefs; (3) antisocial behavior; (4) risk taking and sensation seeking; (5) rebelliousness; (6) delinquency; (7) values about substance use; and (8) perceived risk of ATOD use. All of these factors are considered risk factors. Table 4a.1 lists the specific items that the ATOD survey used to measure individual risk and protective factors.

Table 4a.1. Individual Risk and Protective Factors and the Corresponding 2007-2008 Hawai’i Student ATOD Survey Questions and Responses (Adapted from Pearson, 2003).

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Early Initiation of Problem Behaviors</b>	Defined by early substance use and problem behaviors. Earlier onset of any drug use is associated with greater involvement in other drug use. This early initiation is a predictor of drug abuse while later onset of use predicts lower drug involvement and a greater probability of use discontinuation.	How old were you when you first drank four or more alcoholic drinks on one occasion?	Never have = 0 9 or younger = 9 10 = 10 11 = 11
		How old were you when you first got suspended or expelled from school?	12 = 12 13 = 13 14 = 14
		How old were you when you first got arrested?	15 = 15 16 = 16
		How old were you when you first attacked someone with the idea of seriously hurting them?	17 or older = 17
<b>Antisocial Beliefs</b>	Defined as a student’s acceptance of violence, drug use, criminal activity, or disobeying rules. Condoning such behavior is more likely to lead to engaging in drug use among other problem behaviors.	How wrong do you think it is for someone your age to take a handgun to school?	Very wrong = 4 Wrong = 3 A little bit wrong = 2
		How wrong do you think it is for someone your age to steal anything worth more than \$5?	Not at all wrong = 1

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
		How wrong do you think it is for someone your age to pick a fight with someone?	
		How wrong do you think it is for someone your age to attack someone with the idea of seriously hurting them?	
		How wrong do you think it is for someone your age to stay away from school all day when your parents think you are at school?	
		I think it is okay to take something without asking if you can get away with it	NO! = 0 no = 1 yes = 2 YES! = 3
		It is okay to beat up people if they start the fight	
		I think sometimes it's okay to cheat at school	

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Antisocial Behavior</b>	Defined as engaging in problem behaviors such as drug use, violence, and delinquency.	In the past year or 12 months how many times have you sold illegal drugs?	Never have= 0 1-2 times = 1 3-5 times = 2 6-9 times = 3 10-19 times = 4 20-29 times = 5 30+ times = 6
		In the past year or 12 months how many times have you stolen or tried to steal a motor vehicle?	
		In the past year or 12 months how many times have you attacked someone with the idea of seriously hurting them?	
<b>Risk Taking and Sensation Seeking</b>	Defined as having a high need for arousal or sensation experiences. Young people with such a high need have increased risk for ATOD use and other problem behaviors.	How many times have you done crazy things even if they were dangerous?	Never have= 0 I've done it but no in the past year = 1 A few times this year = 2 About once a month = 3 2 or 3 times a month = 4 Once a week or more = 5
		How many times have you done something dangerous because someone dared you to do it?	
		How many times have you done what feels good no matter what the consequences?	
<b>Rebelliousness</b>	Defined as ignorance of rules and an active rebellious stance toward society. Those who do not feel bound by rules, who do not try to be successful for or responsible, or who insist on challenging or abstaining from society, are at a higher risk of drug abuse.	I like to see how much I can get away with	NO! = 0 no = 1 yes = 2 YES! = 3
		I ignore rules that get in my way	
		I do the opposite of what people tell me, just to get them mad	
<b>Delinquency</b>	Defined by the participation in illegal acts or those which violate established rules.	In the past 12 months, how many times have you been arrested?	Never have= 0 1-2 times = 1 3-5 times = 2 6-9 times = 3 10-19 times = 4 20-29 times = 5 30+ times = 6
		In the past year or 12 months how many times have you been suspended from school?	
		In the past year or 12 months how many times have you been drunk or high at school?	

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Values about Substance Use</b>	Defined as the perception of ATOD use by young people, whether it is right or wrong. Initiation of drug use is often preceded by shifting towards favorable attitudes towards use. Those who express positive attitudes toward use are at higher risk for use.	How wrong do you think it is for someone your age to smoke marijuana?	Very wrong = 4 Wrong = 3 A little bit wrong = 2 Not at all wrong = 1
		How wrong do you think it is for someone your age to drink alcohol regularly?	
		How wrong do you think it is for someone your age to smoke cigarettes?	
		How wrong do you think it is for someone your age to use LSD, cocaine, methamphetamine, or other illegal drugs?	
<b>Perceived Risk of ATOD Use</b>	Defined as the perception of little harmfulness associated with ATOD use. Youth who do not perceive drug use as risky as more likely to engage in substance use.	How much do you think people risk harming themselves (physically or in other ways) if they smoke one or more packs of cigarettes per day?	No risk = 0 Slight risk = 1 Moderate risk = 2 Great risk = 3 I don't know
		How much do you think people risk harming themselves (physically or in other ways) if they have four or more drinks of alcohol once or twice each weekend?	
		How much do you think people risk harming themselves (physically or in other ways) if they use marijuana occasionally?	
		How much do you think people risk harming themselves (physically or in other ways) if they use inhalants occasionally?	
		How much do you think people risk harming themselves (physically or in other ways) if they use cocaine occasionally?	
		How much do you think people risk harming themselves (physically or in other ways) if they use methamphetamine occasionally?	
		How much do you think people risk harming themselves (physically or in other ways) if they use methamphetamine occasionally?	

Risk Factors			
Factor	Description	Question	Response Choices and Coding for Analyses
<b>Perceived Risk of ATOD Use (cont)</b>	Defined as the perception of little harmfulness associated with ATOD use. Youth who do not perceive drug use as risky as more likely to engage in substance use. (cont)	How much do you think people risk harming themselves (physically or in other ways) if they use hallucinogens occasionally?	No risk = 0 Slight risk = 1 Moderate risk = 2 Great risk = 3 I don't know
		How much do you think people risk harming themselves (physically or in other ways) if they use ecstasy or other "club drugs" occasionally?	
		How much do you think people risk harming themselves (physically or in other ways) if they use prescription drugs without a doctor telling them to?	

#### EARLY INITIATION OF PROBLEM BEHAVIORS

---

Early initiation of problem behaviors was based on a 4-item, 3-point scale that indexed the age at which students first engaged in problem behaviors. Students were asked at what age they first engaged in binge drinking; were first suspended or expelled from school; were first arrested; and first attacked someone with the idea of seriously hurting them. Response were coded as 0= *Never have*; 1=*14 or younger*; and 2=*15 or older*. Binge drinking, for the purposes of this study, was defined as drinking four or more alcoholic drinks on one occasion. "Early Initiation of Problem Behaviors" has been shown in previous Hawai'i survey efforts to be strongly associated with substance use.

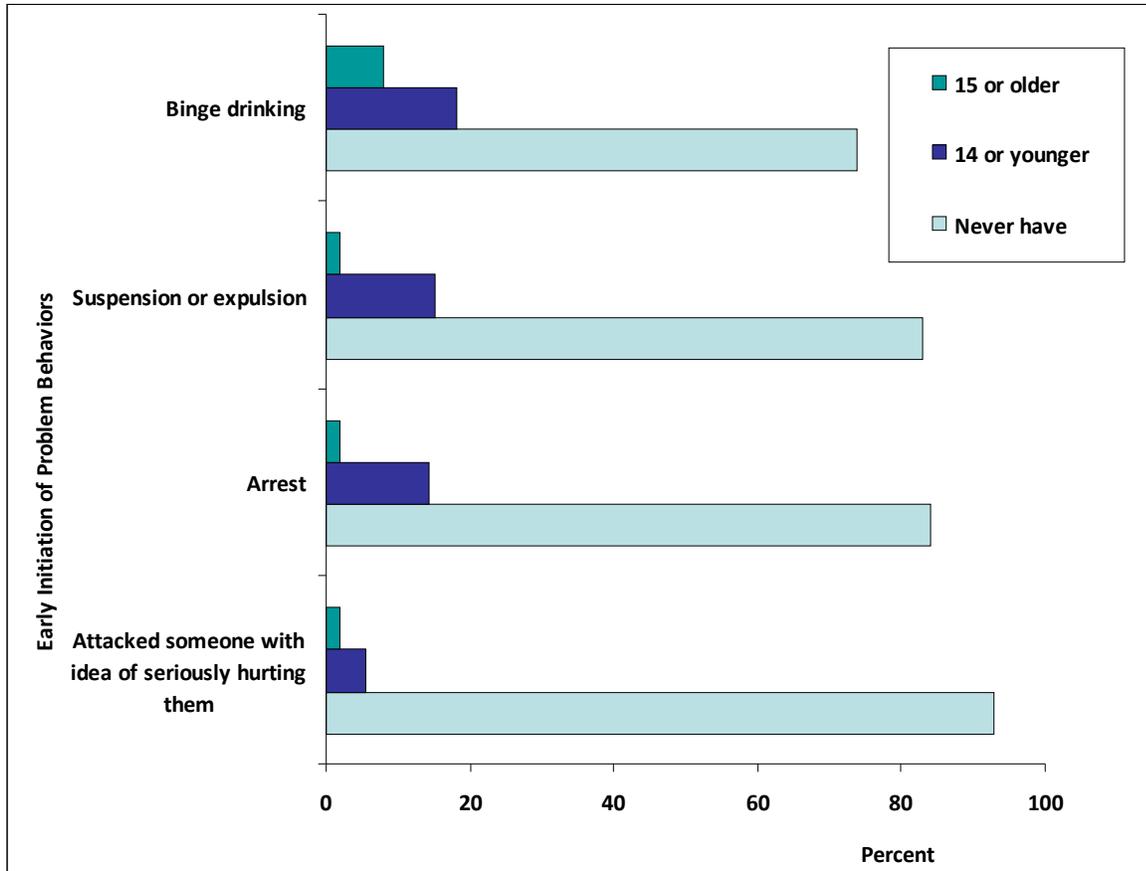


Figure 4a.1. Early Initiation of Problem Behaviors, 2007 (Weighted Data)

Early initiation (at age 14 or younger) of problem behaviors were highest for students who reported involvement with binge drinking (18.3%), followed by suspension or expulsion (15.1%), getting arrested (5.5%), and attacking someone (14.2%). This was also true for students who first engaged in these behaviors at age 15 or older (8.1% for binge drinking, 2% for suspension or expulsion, and 1.8% for both getting arrested and attacking someone). Generally, most students have never engaged in problem behaviors (92.7% never arrested, 84% never attacked someone, 82.9% never suspended or expelled, and 73.7% never binge drink).

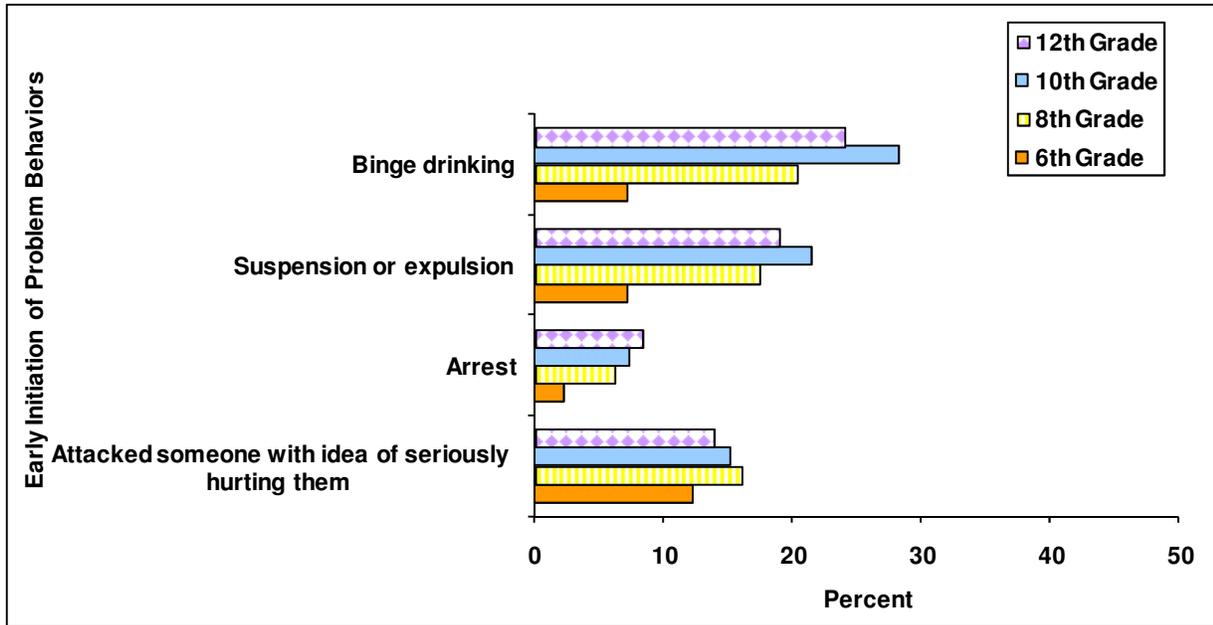


Figure 4a.2. Early Initiation of Problem Behaviors by Grade, 2007 (Weighted Data)

Overall, the largest increase in problem behaviors were reported by 6<sup>th</sup> and 8<sup>th</sup> grade students. About 7% of 6<sup>th</sup> graders, 20.4% of 8<sup>th</sup> graders, 28.2% of 10<sup>th</sup> graders, and 24.1% of 12<sup>th</sup> graders reported binge drinking at an early age ( $\chi^2=7600.9$ ,  $df=6$ ,  $p<.001$ ). Approximately 7% of 6<sup>th</sup> graders, 17.4% of 8<sup>th</sup> graders, 21.5% of 10<sup>th</sup> graders, and 19% of 12<sup>th</sup> graders indicated that they had been suspended/expelled from school at an early age ( $\chi^2=1685.6$ ,  $df=6$ ,  $p<.001$ ). About 2% of 6<sup>th</sup> graders, 6.2% of 8<sup>th</sup> graders, 7.4% of 10<sup>th</sup> graders, and 8.4% of 12<sup>th</sup> graders reported that they had been arrested at an early age ( $\chi^2=1451.0$ ,  $df=6$ ,  $p<.001$ ). Slightly more than 12% of 6<sup>th</sup> graders, 16.1% of 8<sup>th</sup> graders, 15.2% of 10<sup>th</sup> graders, and 14% of 12<sup>th</sup> graders reported they had attacked someone with the idea of seriously hurting them ( $\chi^2=982.2$ ,  $df=6$ ,  $p<.001$ ).

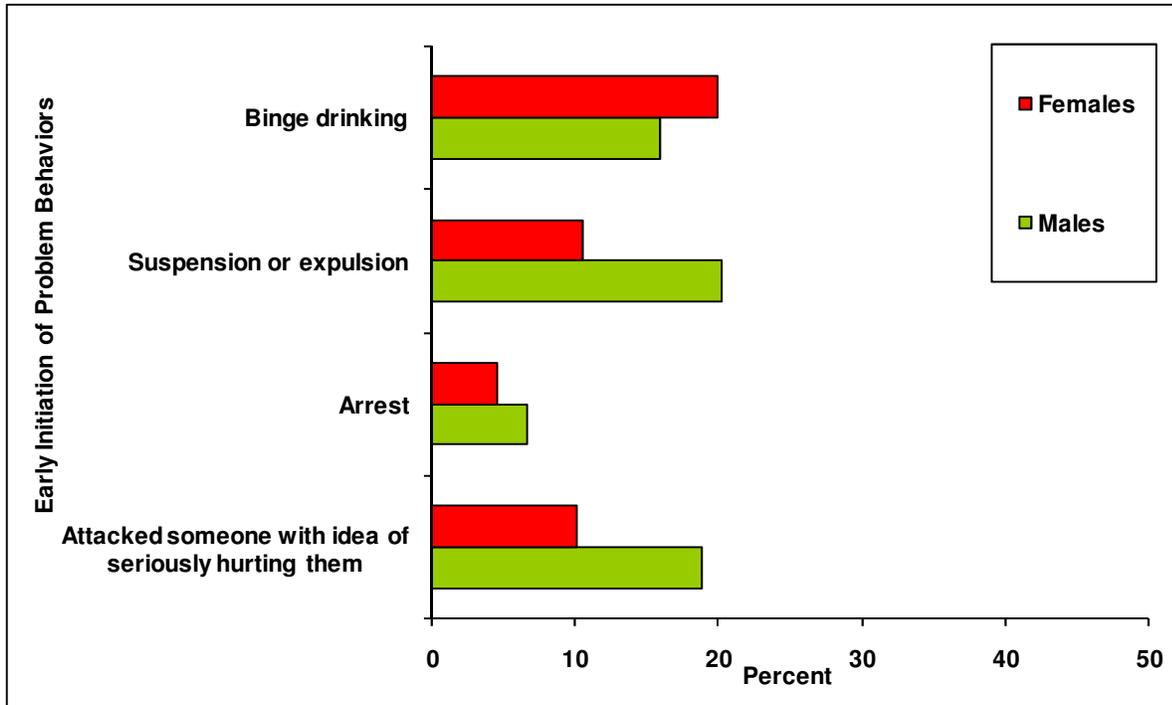


Figure 4a.3. Early Initiation of Problem Behaviors by Gender, 2007 (Weighted Data)

Significantly more males than females engaged in problem behaviors at an early age, including being suspended/expelled (20.2% vs. 10.5%,  $\chi^2=486.6$ ,  $df=2$ ,  $p<.001$ ); being arrested (6.6% vs. 4.6%,  $\chi^2=86.7$ ,  $df=2$ ,  $p<.001$ ); and attacking someone with the idea of seriously hurting them (18.8% vs. 10.1%,  $\chi^2=427.6$ ,  $df=2$ ,  $p<.001$ ). For binge drinking, significantly more females than males indicated that they had started at an early age (19.9% vs. 16%,  $\chi^2=72.3$ ,  $df=2$ ,  $p=.001$ ).

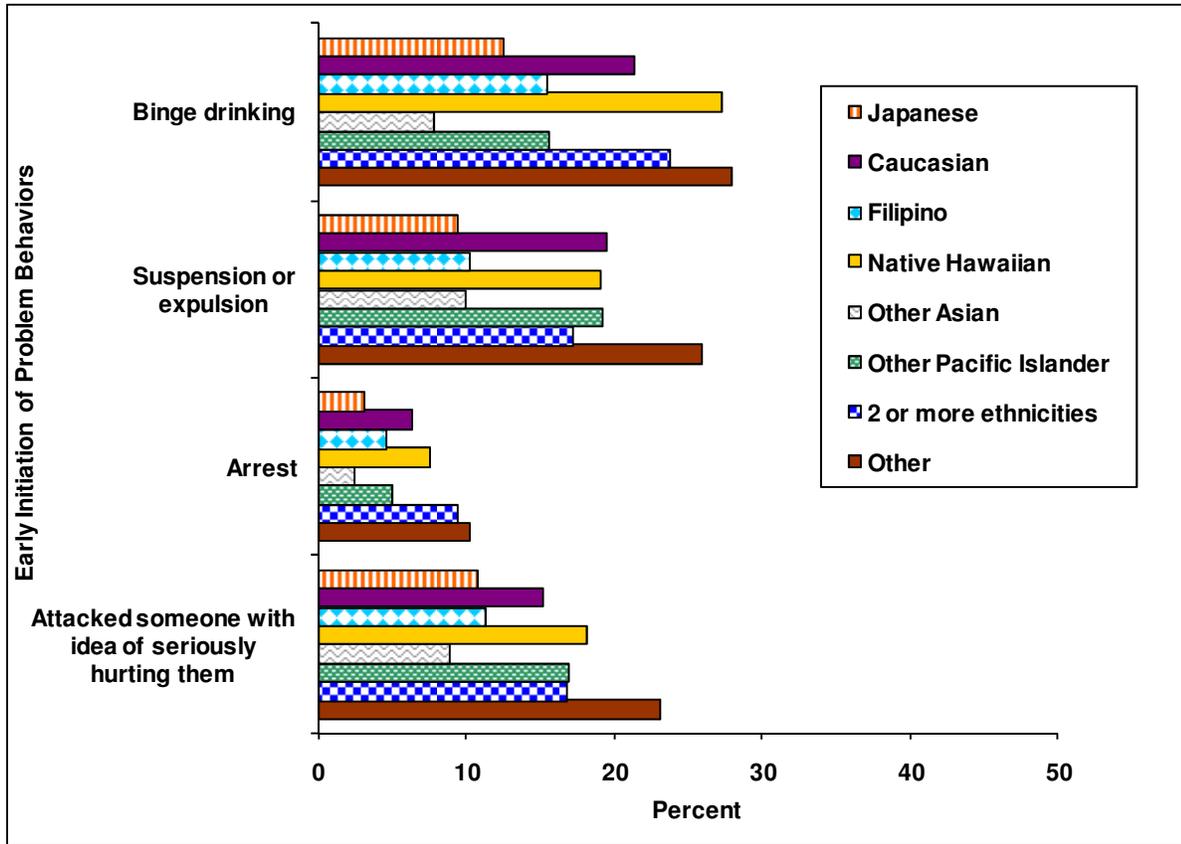


Figure 4a.4. Early Initiation of Problem Behaviors by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for early initiation of problem behaviors. Generally, more students of Other ethnicities, Native Hawaiian, and 2 or more ethnicities reported early initiation of problem behaviors, followed by Caucasian and Other Pacific Islander, with Filipino, Japanese and Other Asian ethnic groups having the lowest rates. Twelve and a half percent of Japanese students, 21.4% of Caucasian students, 15.5% of Filipino students, 27.3% of Native Hawaiian students, 7.9% of Other Asian students, 15.6% of Other Pacific Islander students, 23.9% of students of 2 or more ethnicities, and 28% of students of Other ethnicities indicated having started binge drinking at an early age ( $X^2=812.5$ ,  $df=14$ ,  $p<.001$ ).

Nine and a half percent of Japanese students, 19.5% of Caucasian students, 10.3% of Filipino students, 19.1% of Native Hawaiian students, 10% of Other Asian students, 19.3% of Other Pacific Islander

students, 17.3% of students of 2 or more ethnicities, and 26% of students of Other ethnicities reported having been suspended/expelled from school at an early age ( $\chi^2=620.8$ ,  $df=14$ ,  $p<.001$ ).

About 3% of Japanese students, 6.3% of Caucasian students, 4.7% of Filipino students, 7.6 % of Native Hawaiian students, 2.5% of Other Asian students, 5% of Other Pacific Islander students, 9.5% of students of 2 or more ethnicities, and 10.2% of students of Other ethnicities reported having been arrested at an early age ( $\chi^2=308.3$ ,  $df=14$ ,  $p<.001$ ).

Almost 11% of Japanese students, 15.2% of Caucasian students, 11.3% of Filipino students, 18.2 % of Native Hawaiian students, 9% of Other Asian students, 17% of Other Pacific Islander students, 16.8% of students of 2 or more ethnicities, and 23.2% of students of Other ethnicities reported being 14 or younger when they first attacked someone with the idea of seriously hurting them ( $\chi^2=457.4$ ,  $df=14$ ,  $p<.001$ ).

Table 4a.2. Correlations Between Early Initiation of Problem Behaviors and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Early Initiation of Problem Behaviors	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Early Initiation Binge	.50	.44	.28	.36	.35	.19
Early Initiation Suspended	.27	.26	.23	.24	.26	.19
Early Initiation Attacked	.25	.25	.20	.22	.25	.20
Early Initiation Arrest	.29	.30	.30	.29	.30	.25

The following general categories indicate a quick way of interpreting a correlation value: 0.0 to  $\pm 0.2$  Negligible;  $\pm 0.2$  to 0.4 Weak;  $\pm 0.4$  to 0.7 Moderate; and  $\pm 0.7$  and above Strong. For the most part, early initiation of problem behaviors were mildly positively correlated ( $r=.20$  to  $.36$ ) with monthly substance use and drinking or getting high at school. Moderate correlations were found for early initiation of binge drinking with monthly alcohol use ( $r=.50$ ) and monthly binge drinking ( $r=.44$ ).

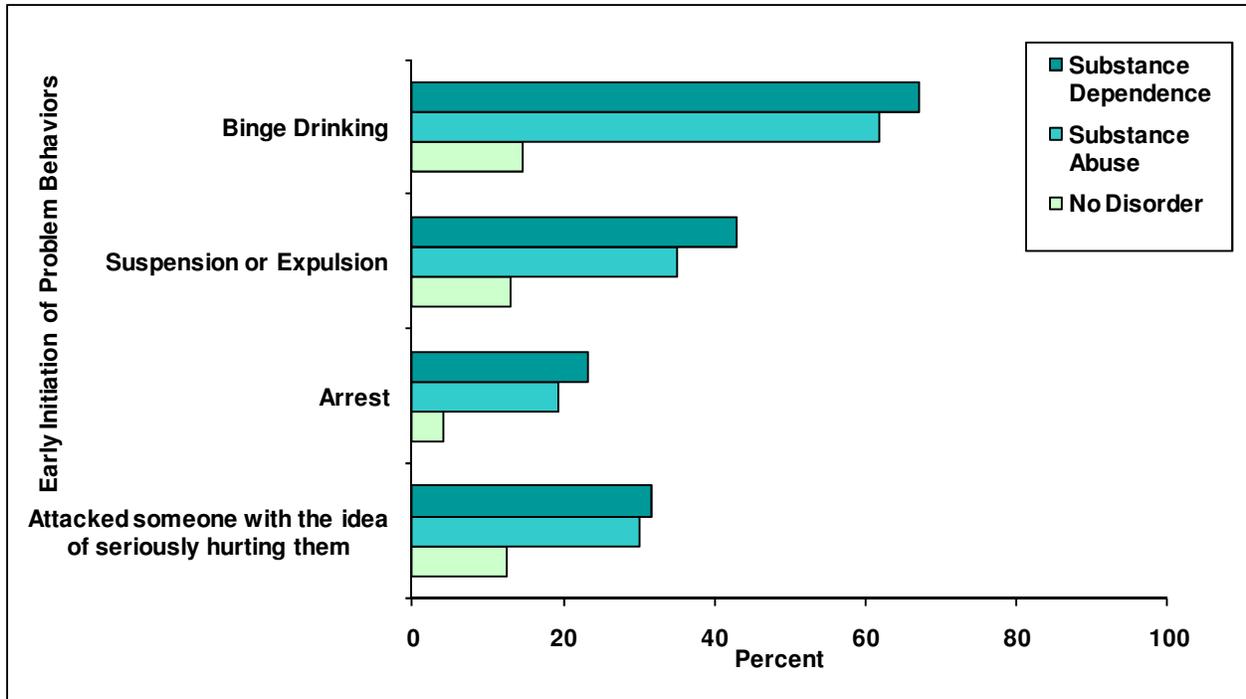


Figure 4a.5. Early Initiation of Problem Behaviors by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to have engaged in problem behaviors at an early age. Youth with substance abuse and dependence had similar proportions of early initiation of problem behaviors but significantly more than students without substance use disorders for early initiation of binge drinking; (67% dependence, 61.9% abuse vs. 14.7% none,  $\chi^2=3895.7$ ,  $df=4$ ,  $p<.001$ ); early initiation of suspension or expulsion (42.9% dependence, 35.1% abuse vs. 13% none,  $\chi^2=1193.7$ ,  $df=4$ ,  $p<.001$ ); early initiation of arrest (23.2% dependence, 19.4% abuse vs. 4.2% none,  $\chi^2=1731.4$ ,  $df=4$ ,  $p<.001$ ); and early initiation of attacking someone (31.7% dependence, 30% abuse vs. 12.5% none,  $\chi^2=1058.3$ ,  $df=4$ ,  $p<.001$ ). The problem behavior that students most often reported was binge drinking, regardless of whether they met criteria for abuse or dependence.

## ANTISOCIAL BELIEFS

Antisocial Beliefs was based on two scales. The first was a 5-item, 4-point scale assessing how much students thought it was wrong to engage in various antisocial behaviors. Students were asked how wrong

they thought it was to steal anything worth more than \$5; take a handgun to school; pick a fight with someone; skip school; or attack someone with the intention to seriously hurt someone. Response choices were (1) *Not at all wrong*, (2) *A little bit wrong*, (3) *Wrong*, and (4) *Very wrong*. Favorable beliefs toward antisocial behaviors was defined as any response of *not at all wrong* or *a little bit wrong* for the above antisocial behaviors.

The second scale included 3-item, 4-point scale which asked students if they thought it was okay to take something without asking if they can get away with it; if they thought it was okay to beat people up if they start the fight; and if they thought it was sometimes okay to cheat at school. Response choices were: (1) *NO!*; (2) *no*; (3) *yes*; and (4) *YES!*. Favorable beliefs toward antisocial behaviors was defined as *yes* and *YES!* responses for the above antisocial behaviors.

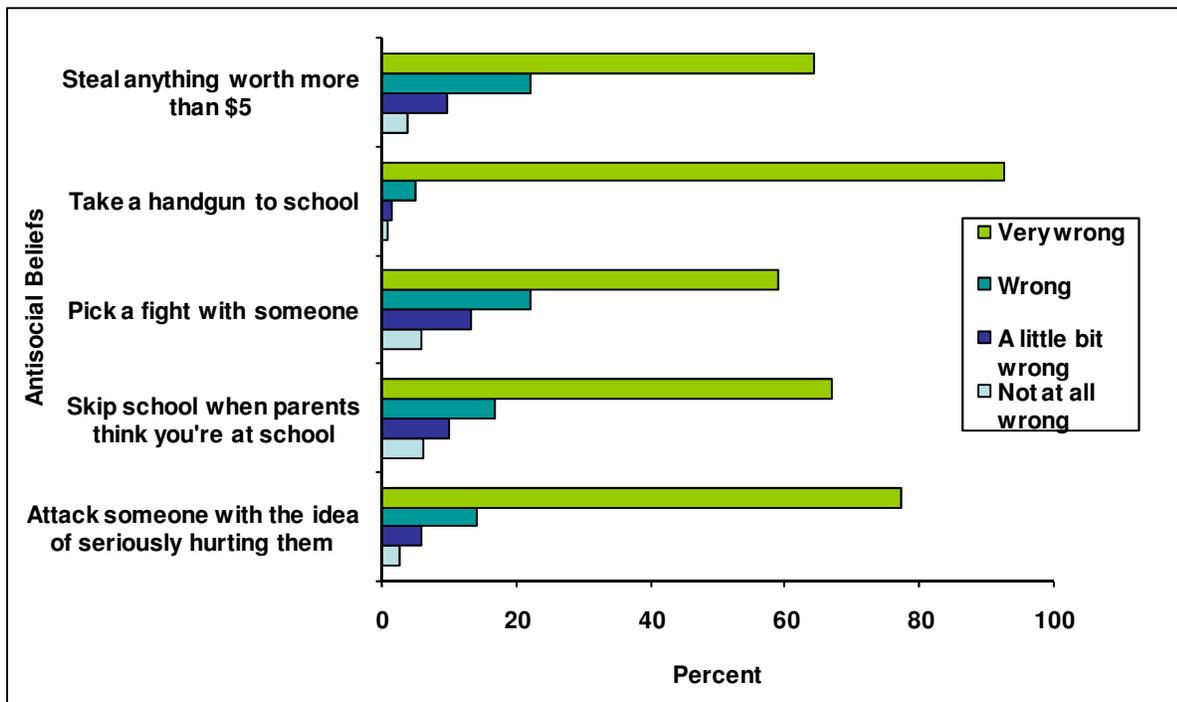


Figure 4a.6. Antisocial Beliefs, 2007 (Weighted Data)

Few youth endorsed responses of *Not at all wrong* or *A little bit wrong*, indicating the vast majority of students do not have favorable attitudes towards antisocial behaviors.

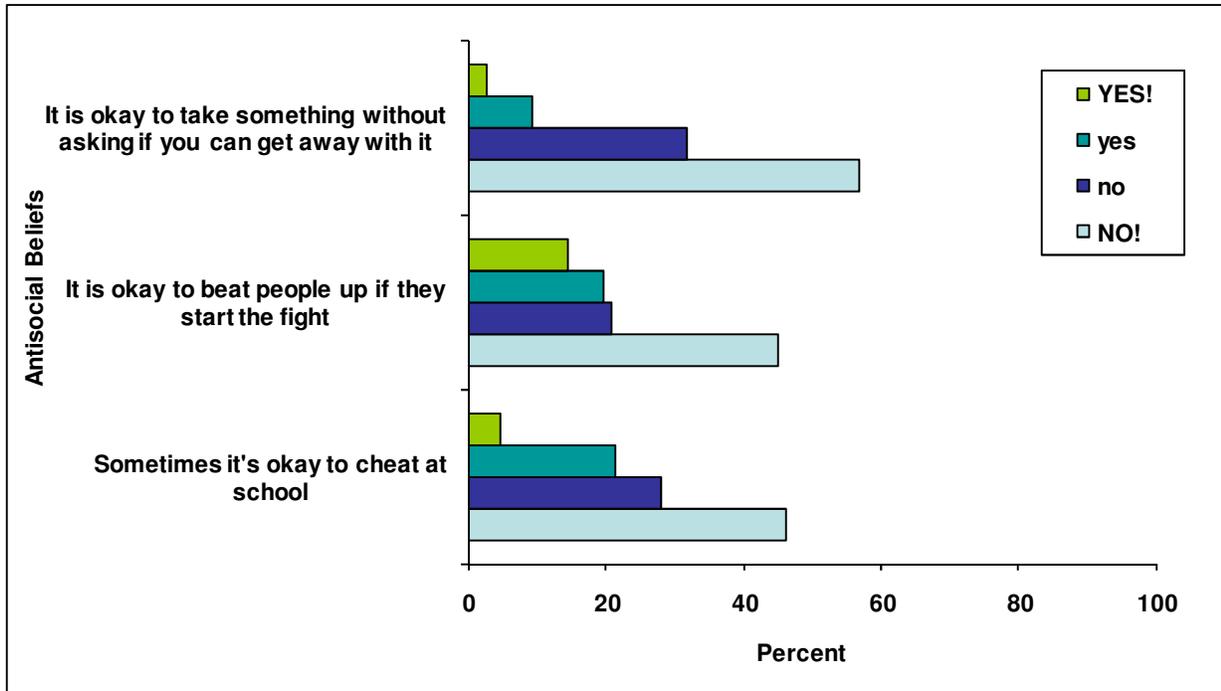


Figure 4a.7. Antisocial Beliefs, 2007 (Weighted Data)

Few students indicated favorable attitudes toward antisocial behavior. However, there were 21.3% of students who think it is sometimes okay to cheat at school and 34.2% (*yes* and *YES!*) who think it is okay to beat people up if they start the fight. These numbers were still much lower than the numbers of students who did not have favorable attitudes toward antisocial behavior.

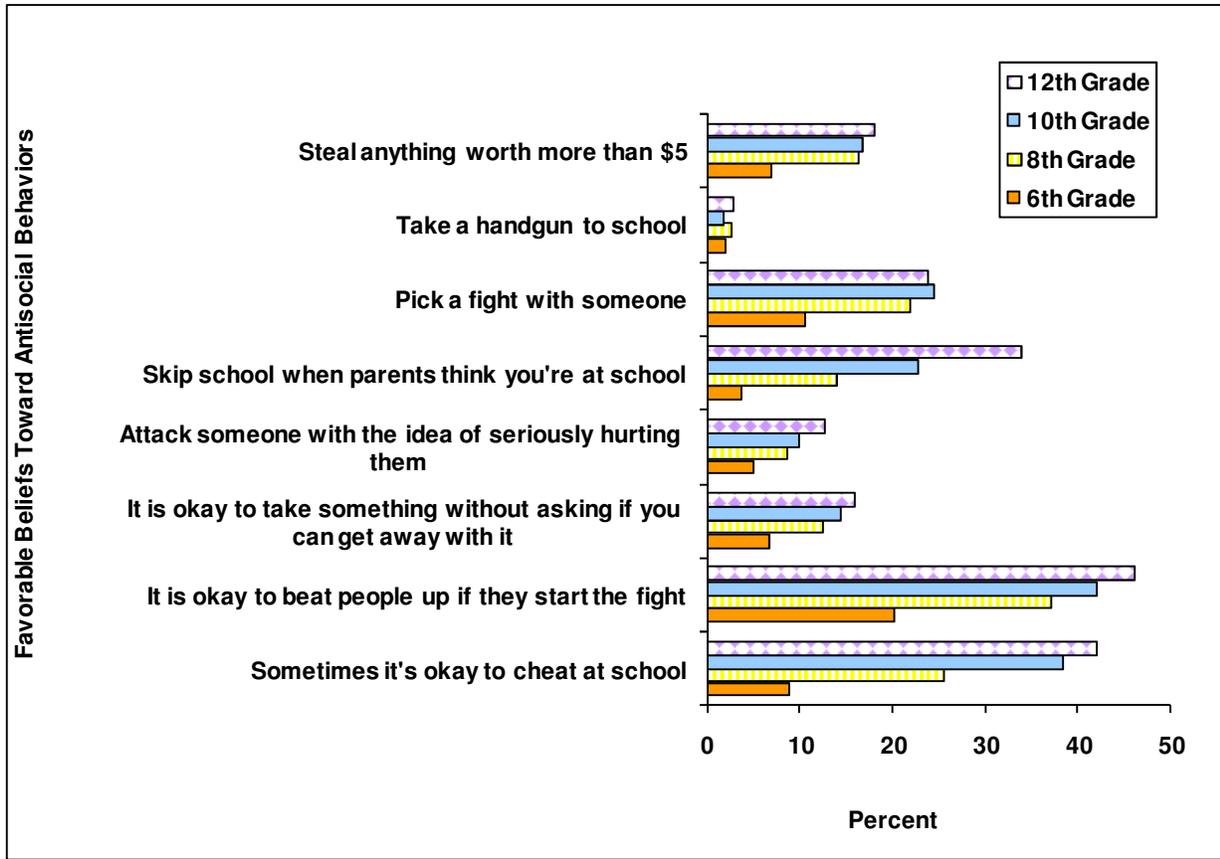


Figure 4a.8. Favorable Beliefs Toward Antisocial Behaviors by Grade, 2007 (Weighted Data)

Generally, more youth reported favorable beliefs toward antisocial behaviors as grade level increased from 6<sup>th</sup> to 12<sup>th</sup> grade, as seen in Figure 4a.8. About 18% of 12<sup>th</sup> graders, 16.7% of 10<sup>th</sup> graders, 16.4% of 8<sup>th</sup> graders, and 6.9% of 6<sup>th</sup> graders indicated that it was not wrong to steal anything worth more than \$5 ( $X^2=536.9$ ,  $df=3$ ,  $p<.001$ ). Three percent of 12<sup>th</sup> graders, 1.8% of 10<sup>th</sup> graders, 2.6% of 8<sup>th</sup> graders, and 1.9% of 6<sup>th</sup> graders indicated that it was not wrong to take a handgun to school ( $X^2=29.7$ ,  $df=3$ ,  $p<.001$ ). Nearly 24% of 12<sup>th</sup> graders, 24.6% of 10<sup>th</sup> graders, 21.9% of 8<sup>th</sup> graders, and 10.6% of 6<sup>th</sup> graders indicated that it was not wrong to pick a fight with someone ( $X^2=653.6$ ,  $df=3$ ,  $p<.001$ ). Thirty-four percent of 12<sup>th</sup> graders, 22.9% of 10<sup>th</sup> graders, 14.1% of 8<sup>th</sup> graders, and 3.8% of 6<sup>th</sup> graders indicated that it was not wrong to skip school without their parents knowing ( $X^2=2468.1$ ,  $df=3$ ,  $p<.001$ ). Almost 13% of 12<sup>th</sup> graders, 9.9% of 10<sup>th</sup> graders, 8.7% of 8<sup>th</sup> graders, and 5.1% of 6<sup>th</sup> graders indicated that it was not wrong to attack someone with the idea of seriously hurting them ( $X^2=271.5$ ,  $df=3$ ,  $p<.001$ ). Sixteen percent of 12<sup>th</sup> graders, 14.5% of

10<sup>th</sup> graders, 12.5% of 8<sup>th</sup> graders, and 6.7% of 6<sup>th</sup> graders thought it was okay to take something without asking if they thought they could get away with it ( $\chi^2=361.6$ ,  $df=3$ ,  $p<.001$ ). About 46% of 12<sup>th</sup> graders, 42% of 10<sup>th</sup> graders, 37.2% of 8<sup>th</sup> graders, and 20.3% of 6<sup>th</sup> graders thought it was okay to beat people up if they started the fight ( $\chi^2=1291.0$ ,  $df=3$ ,  $p<.001$ ). About 42% of 12<sup>th</sup> graders, 38.5% of 10<sup>th</sup> graders, 25.7% of 8<sup>th</sup> graders, and 8.8% of 6<sup>th</sup> graders indicated that they thought it was okay to sometimes cheat at school ( $\chi^2=2570.6$ ,  $df=3$ ,  $p<.001$ ).

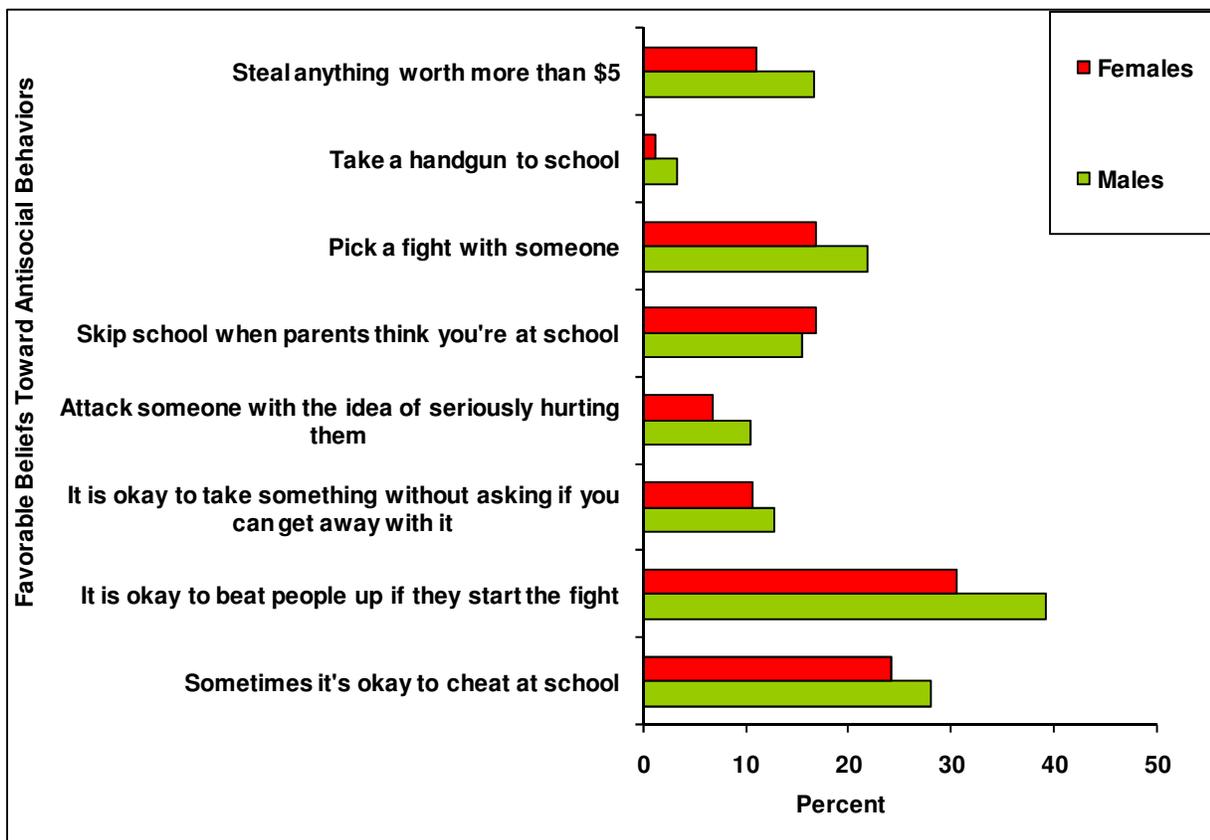


Figure 4a.9. Favorable Beliefs Toward Antisocial Behaviors by Gender, 2007 (Weighted Data)

Overall, more males than females had favorable beliefs toward antisocial behaviors. More males than females think it is not wrong to steal something worth more than \$5 (16.6% vs. 11%,  $\chi^2=175.0$ ,  $df=1$ ,  $p<.001$ ); take a handgun to school (3.4% vs. 1.2%,  $\chi^2=146.3$ ,  $df=1$ ,  $p<.001$ ); pick a fight with someone (21.9% vs. 16.9%,  $\chi^2=103.6$ ,  $df=1$ ,  $p<.001$ ); and attack someone with the idea of seriously hurting them (10.4% vs.

6.8%,  $\chi^2=108.6$ ,  $df=1$ ,  $p<.001$ ). Almost 13% of males and 10.6% of females thought it was okay to take something without asking if they could get away with it ( $\chi^2=28.0$ ,  $df=1$ ,  $p<.001$ ). Almost 40% of males and 30.5% of females thought it was okay to beat people up if they started the fight ( $\chi^2=216.6$ ,  $df=1$ ,  $p<.001$ ). About 28% of males and 24.1% of females indicated they thought it was okay to sometimes cheat at school ( $\chi^2=52.0$ ,  $df=1$ ,  $p<.001$ ). The exception was seen in more females than males indicating that it was not wrong to skip school without parents knowing (16.9% vs. 15.4%,  $\chi^2=11.0$ ,  $df=1$ ,  $p=.001$ ).

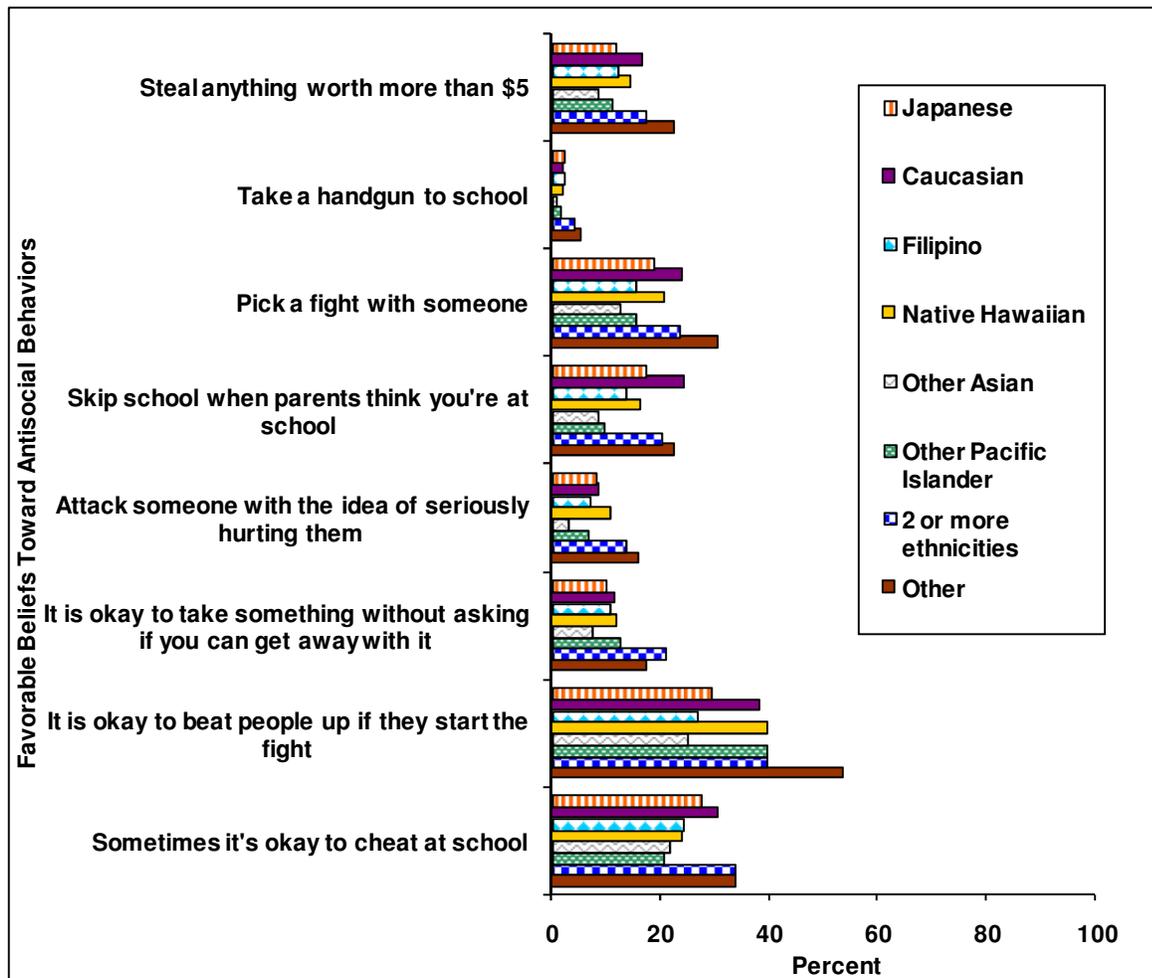


Figure 4a.10. Favorable Beliefs Toward Antisocial Behaviors by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities occurred for favorable attitudes toward antisocial behaviors. Generally, more students of Other ethnicities and 2 or more ethnicities reported favorable beliefs toward antisocial behaviors than other ethnic groups. Caucasian students were more likely to

indicate favorable beliefs toward antisocial behaviors (except for attacking someone) than the other ethnic groups. Almost 12% of Japanese students, 16.6% of Caucasian students, 12.1% of Filipino students, 14.6 % of Native Hawaiian students, 8.4% of Other Asian students, 11.1% of Other Pacific Islander students, 17.5% of students of 2 or more ethnicities, and 22.7% of students of Other ethnicities indicated that it was not wrong to steal anything worth more than \$5 ( $\chi^2=258.2$ ,  $df=7$ ,  $p<.001$ ).

About 2% of Japanese students, 2.3% of Caucasian students, 2.2% of Filipino students, 2 % of Native Hawaiian students, 1% of Other Asian students, 1.6% of Other Pacific Islander students, 4.1% of students of 2 or more ethnicities, and 5.6% of students of Other ethnicities indicated that it was not wrong to take a handgun to school ( $\chi^2=118.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 19% of Japanese students, 24.1% of Caucasian students, 15.5% of Filipino students, 20.9 % of Native Hawaiian students, 12.7% of Other Asian students, 15.4% of Other Pacific Islander students, 23.7% of students of 2 or more ethnicities, and 30.5% of students of Other ethnicities indicated that it was not wrong to pick a fight with someone ( $\chi^2=378.7$ ,  $df=7$ ,  $p<.001$ ).

Seventeen and half percent of Japanese students, 24.6% of Caucasian students, 13.6% of Filipino students, 16.3 % of Native Hawaiian students, 8.7% of Other Asian students, 9.6% of Other Pacific Islander students, 20.3% of students of 2 or more ethnicities, and 22.6% of students of Other ethnicities indicated that it was not wrong to skip school without parents knowing ( $\chi^2=504.4$ ,  $df=7$ ,  $p<.001$ ).

About 8% of Japanese students, 8.8% of Caucasian students, 7% of Filipino students, 11.1% of Native Hawaiian students, 3% of Other Asian students, 6.9% of Other Pacific Islander students, 13.6% of students of 2 or more ethnicities, and 16.1% of students of Other ethnicities indicated that it was not wrong to attack someone with the idea of seriously hurting them ( $\chi^2=302.6$ ,  $df=7$ ,  $p<.001$ ). More students of Other ethnicities and 2 or more ethnicities reported favorable beliefs toward antisocial behaviors than other ethnic groups. About 10% of Japanese students, 11.7% of Caucasian students, 10.9% of Filipino students, 11.9% of Native Hawaiian students, 7.4% of Other Asian students, 12.7% of Other Pacific Islander students,

20.8% of students of 2 or more ethnicities, and 17.5% of students of Other ethnicities indicated it was okay to take something without asking if they thought they could get away with it ( $\chi^2=160.4$ ,  $df=7$ ,  $p<.001$ ).

Almost 30% of Japanese students, 38.3% of Caucasian students, 26.8 % of Filipino students, 39.8% of Native Hawaiian students, 24.9% of Other Asian students, 39.5% of Other Pacific Islander students, 39.6% of students of 2 or more ethnicities, and 53.8% of students of Other ethnicities reported it was okay to beat up people if they started the fight ( $\chi^2=719.6$ ,  $df=7$ ,  $p<.001$ ).

About 27% of Japanese students, 30.5% of Caucasian students, 24.4% of Filipino students, 24.2% of Native Hawaiian students, 21.8% of Other Asian students, 20.5% of Other Pacific Islander students, 33.9% of students of 2 or more ethnicities, and 33.8% of students of Other ethnicities thought it was sometimes okay to cheat at school ( $\chi^2=204.1$ ,  $df=7$ ,  $p<.001$ ).

Table 4a.3. Correlations Between Antisocial Beliefs and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Antisocial Beliefs	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Wrong to take handgun to School	-.17	-.18	-.17	-.17	-.20	-.22
Wrong to steal anything worth more than \$5	-.28	-.23	-.19	-.25	-.26	-.19
Wrong to pick a fight with someone	-.28	-.24	-.18	-.24	-.24	-.17
Wrong to attack someone with the idea of seriously hurting them	-.29	-.27	-.22	-.27	-.28	-.22
Wrong to skip school	-.36	-.31	-.23	-.33	-.32	-.21
Okay to take something without asking	.26	.24	.21	.24	.28	.21
Okay to beat up people if they start the fight	.29	.25	.18	.25	.25	.18
Sometimes okay to cheat at school	.31	.27	.20	.26	.28	.20

In general, beliefs that were favorable toward antisocial behaviors were mildly associated with youth substance use ( $r=-.20$  to  $-.36$ ) with the strongest correlations between the antisocial belief of skipping school being wrong and monthly substance use.

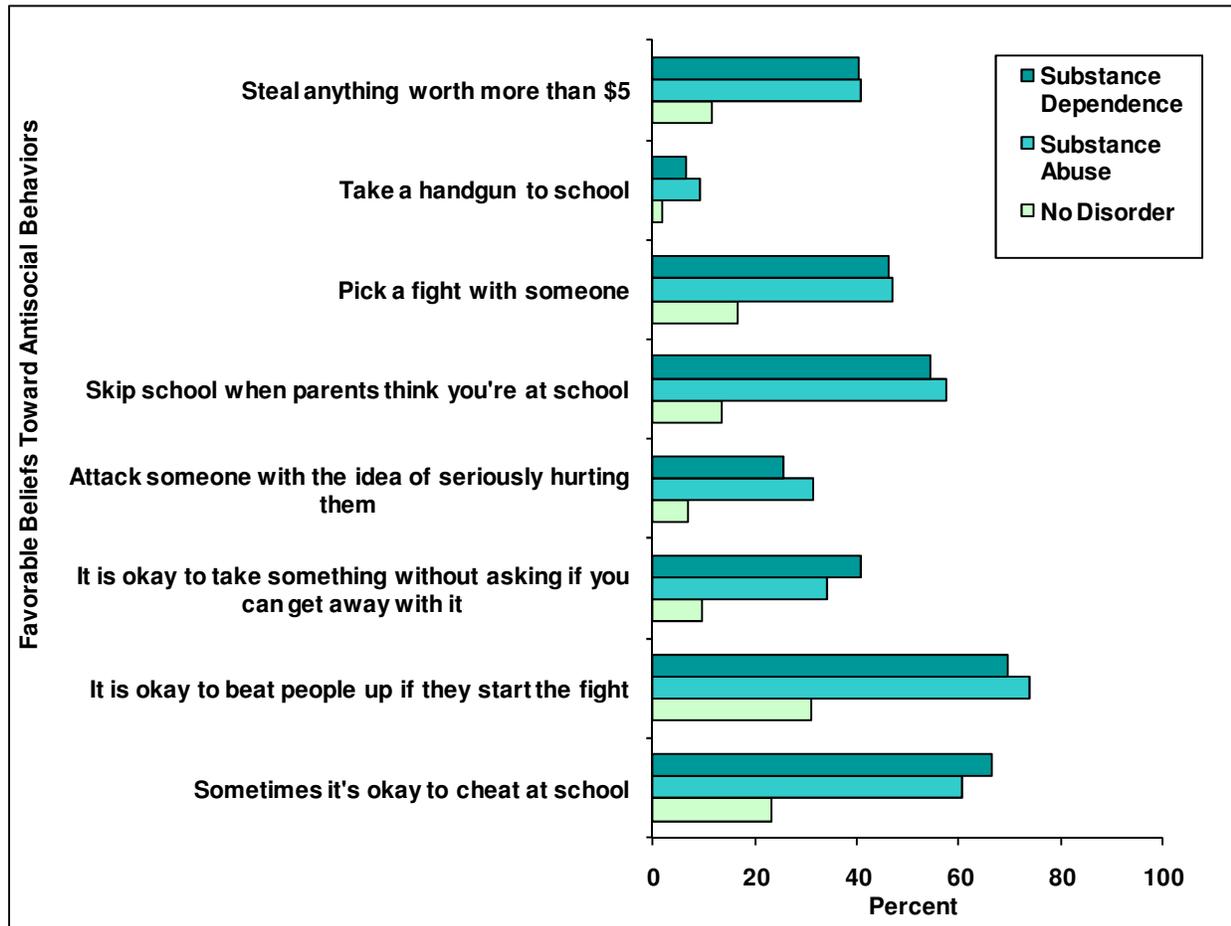


Figure 4a.11. Favorable Beliefs Toward Antisocial Behaviors by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to have favorable beliefs toward antisocial behavior. Youth with substance abuse and dependence had similar proportions of favorable beliefs toward antisocial behaviors but significantly more than students without substance abuse or dependence for favorable beliefs toward stealing anything worth more than \$5, (40.6% dependence, 41% abuse vs. 11.6% none,  $\chi^2=1219.0$ ,  $df=2$ ,  $p<.001$ ); favorable beliefs toward taking a handgun to school (6.6% dependence, 9.4% abuse vs. 1.7% none,  $\chi^2=326.3$ ,  $df=2$ ,  $p<.001$ ); favorable beliefs toward picking a

fight with someone (46.3% dependence, 47.2% abuse vs. 16.8% none,  $\chi^2=977.2$ ,  $df=2$ ,  $p<.001$ ); favorable beliefs toward skipping school when parents think you're at school (54.3% dependence, 57.5% abuse vs. 13.7% none,  $\chi^2=2135.9$ ,  $df=2$ ,  $p<.001$ ); favorable beliefs toward attacking someone with the idea of seriously hurting them (25.6% dependence, 31.5% abuse vs. 7% none,  $\chi^2=1008.5$ ,  $df=2$ ,  $p<.001$ ); thinking it is okay to take something without asking if you can get away with it (40.9% dependence, 34.3% abuse vs. 9.6% none,  $\chi^2=1312.0$ ,  $df=2$ ,  $p<.001$ ); thinking it is okay to beat people up if they start the fight (69.8% dependence, 74% abuse vs. 31.1% none,  $\chi^2=1262.4$ ,  $df=2$ ,  $p<.001$ ); and thinking it is sometimes okay to cheat at school (66.4% dependence, 60.7% abuse vs. 23.3% none,  $\chi^2=1427.0$ ,  $df=2$ ,  $p<.001$ ).

## ANTISOCIAL BEHAVIOR

---

Antisocial behavior was based on a 3-item, 7-point scale that indexed how often students engaged in antisocial behavior. Students were asked how many times in the past 12 months they have sold illegal drugs; stolen or tried to steal a motor vehicle; and attacked someone with the idea of seriously hurting them. Response choices were: (1) *Never*; (2) *1-2 times*; (3) *3-5 times*; (4) *6-9 times*; (5) *10-19 times*; (6) *20-29 times*; and (7) *30+ times*. Although, selling drugs is not technically defined as an antisocial behavior in the criteria for conduct disorder in the DSM-IV (American Psychiatric Association, 1994), it was included in this section. In previous Hawai'i survey efforts, "Antisocial Behavior" has been found to be strongly associated with substance use.

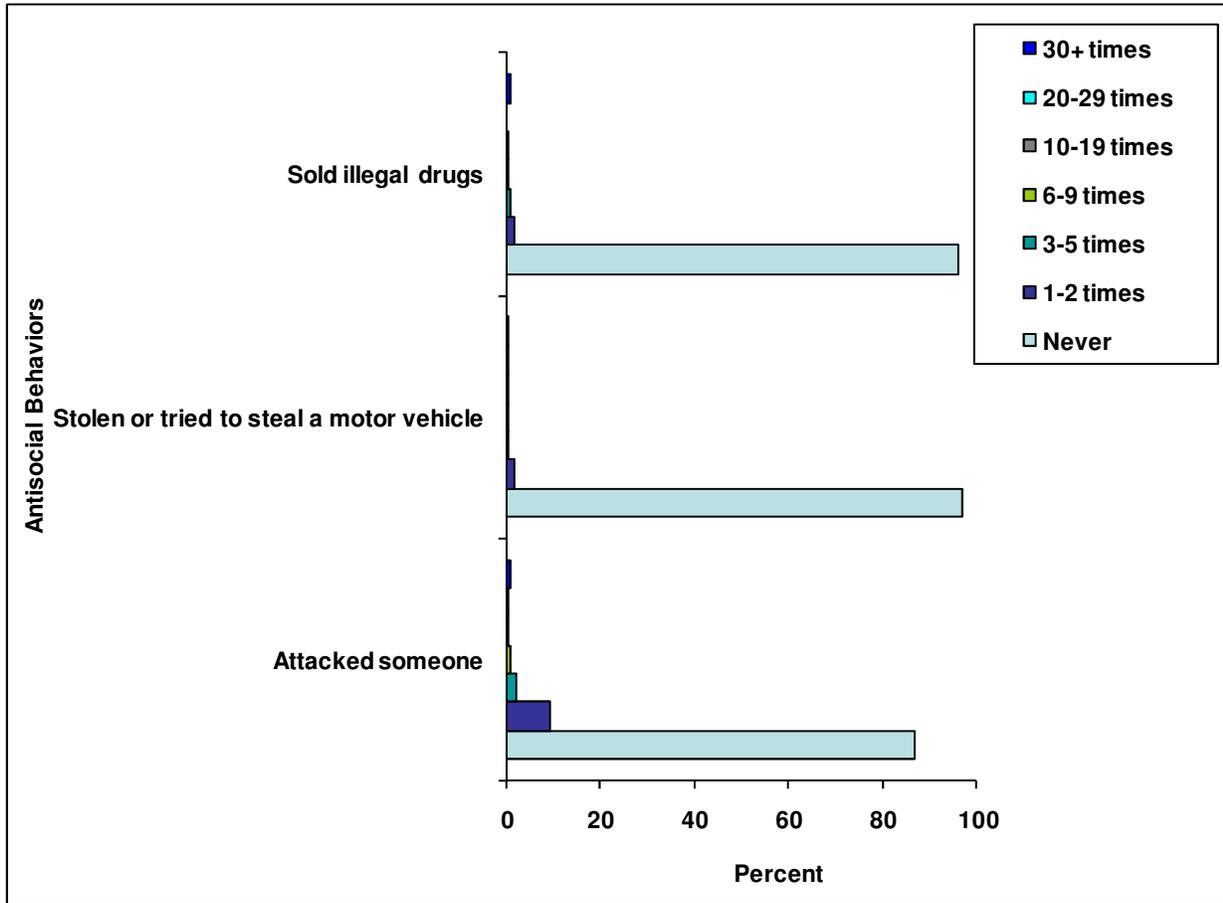


Figure 4a.12. Antisocial Behaviors, 2007 (Weighted Data)

The vast majority of students have never engaged in antisocial behavior. However, the behavior that the most students were involved with was attacking someone with the idea of seriously hurting them (9.1% have attacked someone 1-2 times).

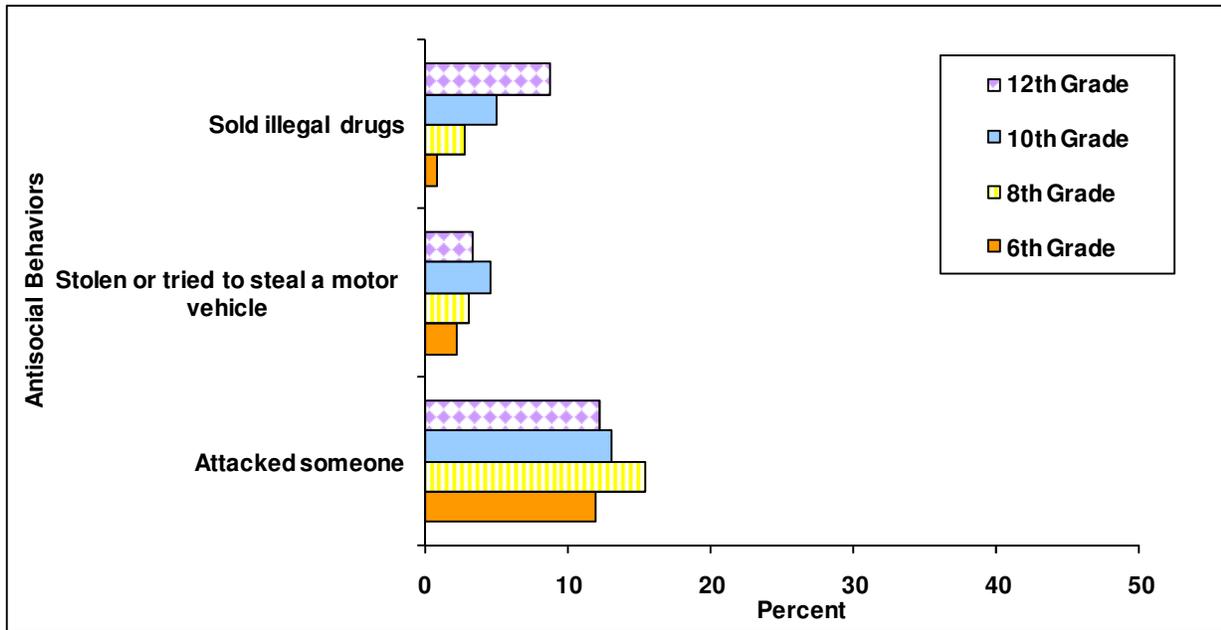


Figure 4a.13. Antisocial Behaviors by Grade, 2007 (Weighted Data)

Significant differences were found in engagement of antisocial behaviors in the past year by grade. Rates of selling illegal drugs increased among youth from 6<sup>th</sup> to 12<sup>th</sup> grade, where 0.9% of 6<sup>th</sup> graders, 2.9% of 8<sup>th</sup> graders, 5% of 10<sup>th</sup> graders, and 8.8% of 12<sup>th</sup> graders had sold illegal drugs in the past year ( $\chi^2=617.4$ ,  $df=3$ ,  $p<.001$ ).

About 2% of 6<sup>th</sup> graders, 3.1% of 8<sup>th</sup> graders, 4.6% of 10<sup>th</sup> graders, and 3.4% of 12<sup>th</sup> graders reported that they had stolen or tried to steal a motor vehicle in the past year ( $\chi^2=59.0$ ,  $df=3$ ,  $p<.001$ ). More 8<sup>th</sup> graders reported having attacked someone in the past year than other grade level (11.9% of 6<sup>th</sup> graders, 15.5% of 8<sup>th</sup> graders, 13.1% of 10<sup>th</sup> graders, and 12.3% of 12<sup>th</sup> graders;  $\chi^2=50.1$ ,  $df=3$ ,  $p<.001$ ).

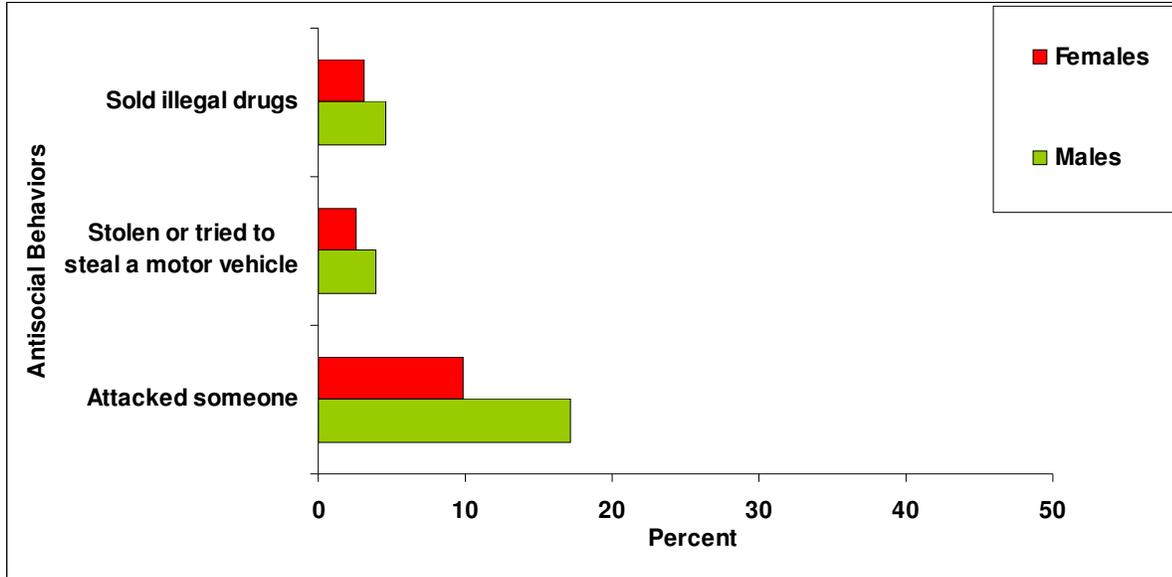


Figure 4a.14. Antisocial Behaviors by Gender, 2007 (Weighted Data)

Significantly more males than females engaged in antisocial behaviors in the past 12 months, including selling illegal drugs (4.6% vs. 3.1%,  $\chi^2=41.8$ ,  $df=1$ ,  $p<.001$ ); stealing or trying to steal a motor vehicle (3.9% vs. 2.5%,  $\chi^2=40.1$ ,  $df=1$ ,  $p<.001$ ); and attacking someone with the idea of seriously hurting them (17.1% vs. 9.9%,  $\chi^2=294.6$ ,  $df=2$ ,  $p<.001$ ).

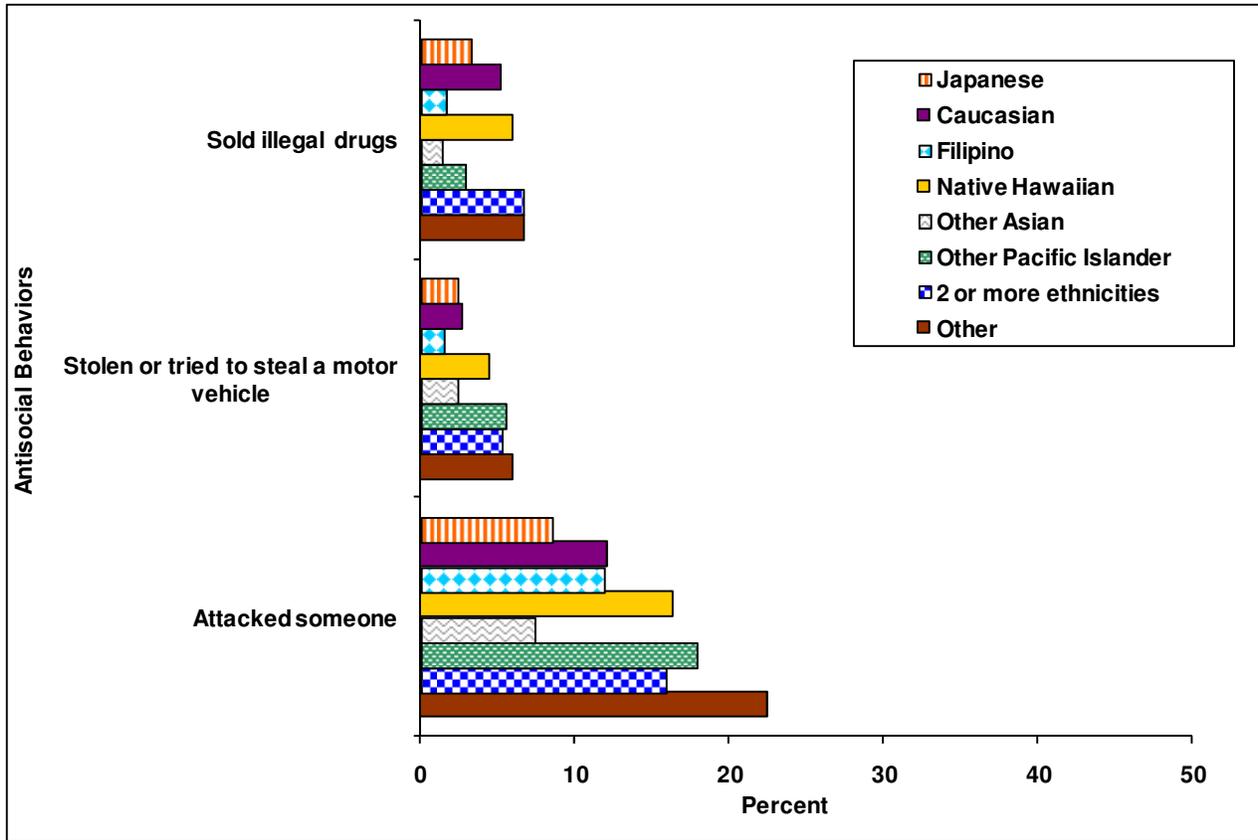


Figure 4a.15. Antisocial Behaviors by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for early initiation of problem behaviors. Generally, more students of Other ethnicities, Native Hawaiians, Other Pacific Islanders, and students of 2 or more ethnicities reported having engaged in antisocial behaviors in the past year than other ethnic groups. About 3% of Japanese students, 5.2% of Caucasian students, 1.7% of Filipino students, 5.8% of Native Hawaiian students, 1.4% of Other Asian students, 3% of Other Pacific Islander students, 6.7% of students of 2 or more ethnicities, and 6.7% of students of Other ethnicities reported having sold illegal drugs in the past year ( $\chi^2=262.3$ ,  $df=7$ ,  $p<.001$ ).

For stealing or trying to steal a motor vehicle in the past year, 2.4% of Japanese students, 2.7% of Caucasian students, 1.6% of Filipino students, 4.5% of Native Hawaiian students, 2.4% of Other Asian students, 5.6% of Other Pacific Islander students, 5.3% of students of 2 or more ethnicities, and 6% of students of Other ethnicities reported having engaged in the behavior in the past year ( $\chi^2=196.9$ ,  $df=7$ ,

$p < .001$ ). For both selling illegal drugs and stealing or trying to steal a car in the past year, Filipino and Other Asian students reported the lowest rates.

About 8.5% of Japanese students, 12.1% of Caucasian students, 11.9% of Filipino students, 16.4 % of Native Hawaiian students, 7.5% of Other Asian students, 18% of Other Pacific Islander students, 16% of students of 2 or more ethnicities, and 22.5% of students of Other ethnicities reported having attacked someone in the past year ( $\chi^2=368.9$ ,  $df=7$ ,  $p < .001$ ).

Table 4a.4. Correlations Between Antisocial Behavior and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Risk Factor: Antisocial Behavior</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Sold Illegal Drugs	.36	.39	.33	.46	.61	1.00
Stolen or tried to steal a motor vehicle	.21	.24	.24	.23	.41	.54
Attacked someone with the idea of seriously hurting them	.30	.32	.26	.26	.40	.46

Overall, antisocial behavior was positively correlated with youth substance use, being drunk or high at school and selling illegal drugs. Moderate to strong correlations were found for antisocial behaviors with monthly marijuana use ( $r=.46$ ), being drunk or high at school ( $r=.40$  to  $r=.61$ ) and selling illegal drugs ( $r=.46$  and  $r=.54$ ).

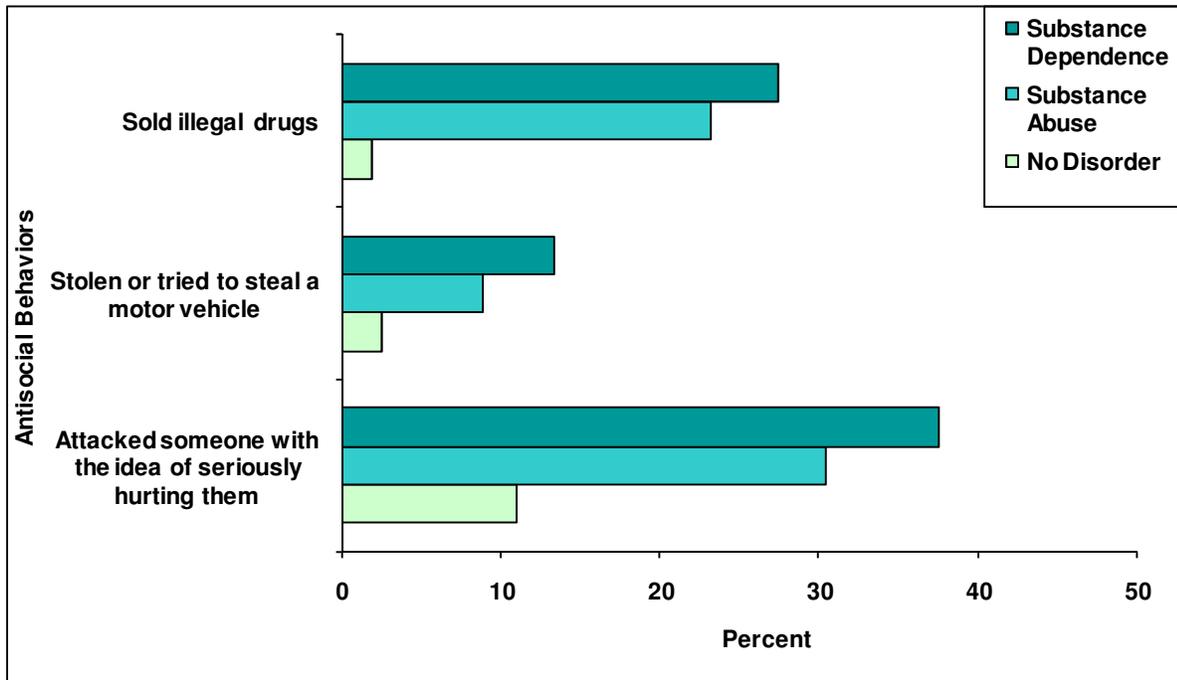


Figure 4a.16. Antisocial Behaviors by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

More youth who met criteria for substance dependence displayed antisocial behavior than students with substance abuse. Significantly more students with substance abuse or dependence reported antisocial behaviors than students without substance abuse or dependence for selling drugs, (27.4% dependence, 23.2% abuse vs. 1.9% none,  $\chi^2=2623.5$ ,  $df=2$ ,  $p<.001$ ); stealing or trying to steal a car (13.3% dependence, 8.8% abuse vs. 2.5% none,  $\chi^2=444.0$ ,  $df=2$ ,  $p<.001$ ); and attacking someone with the idea of seriously hurting them (37.5% dependence, 30.4% abuse vs. 11% none,  $\chi^2=823.4$ ,  $df=2$ ,  $p<.001$ ). The antisocial behavior reported the most was attacking someone with the idea of seriously hurting them for all substance use disorder classifications.

#### RISK TAKING AND SENSATION SEEKING

Risk Taking and Sensation Seeking was based on a 3-item, 6-point scale that indexed how often students engaged in risk taking and sensation seeking behavior. Students were asked how many times they had done crazy things even if they were dangerous, done something dangerous because someone dared them to do it, and done what feels good no matter what the consequences. Response choices were: (1)

Never; (2) I've done it but not in the past year; (3) A few times this year; (4) About once a month; (5) 2 or 3 times a month; and (6) Once a week or more.

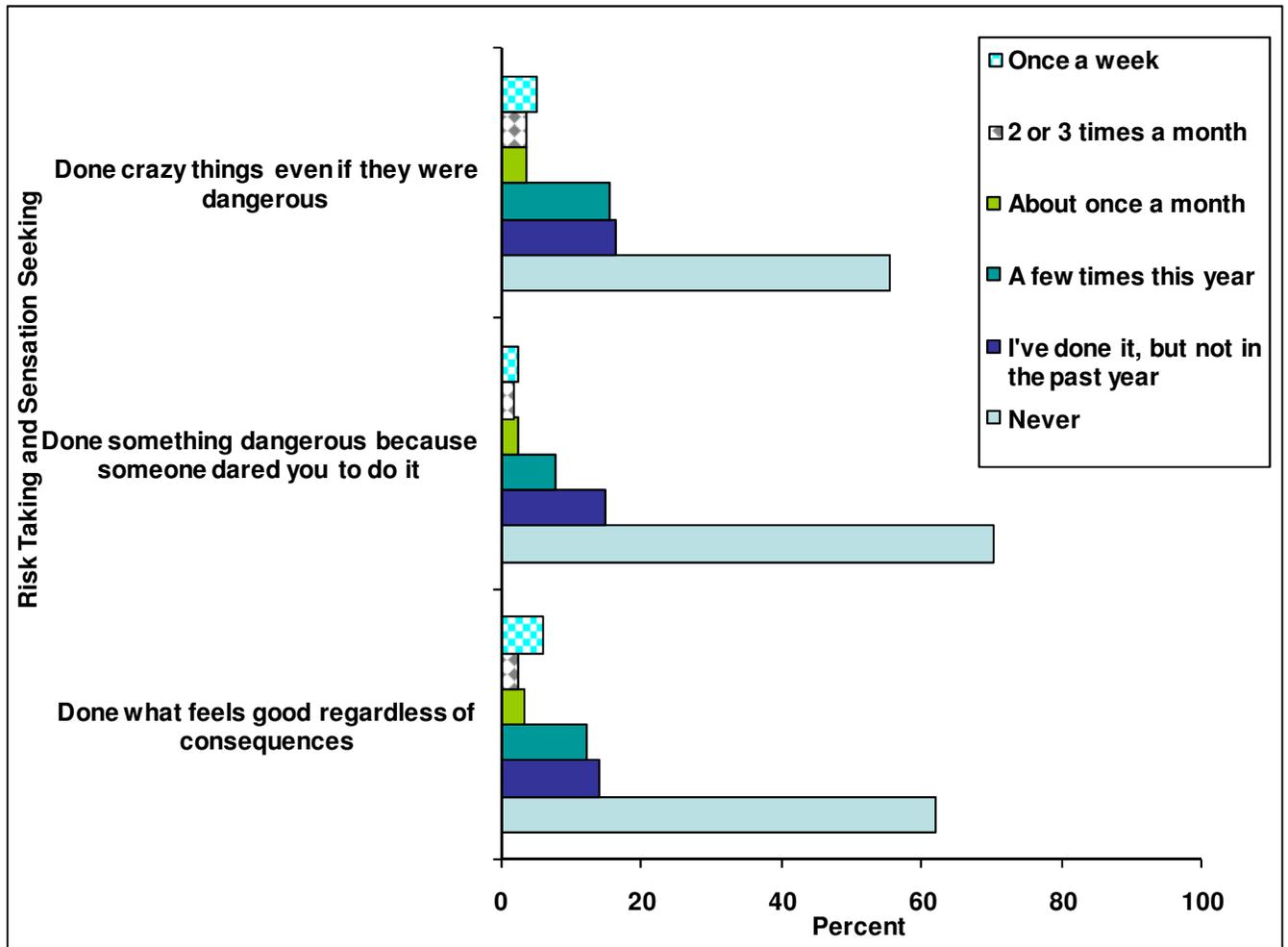


Figure 4a.17. Risk Taking and Sensation Seeking, 2007 (Weighted Data)

Some students have engaged in risk taking or sensation behaviors. However, the behavior most students were involved in was doing crazy things even if they were dangerous (16.4% have done it but not in the past year, 15.5% have done it a few times this year, 3.6% have done it about once a month, 3.8% have done it 2 or 3 times a month, and 5.2% have done it at least once a week).

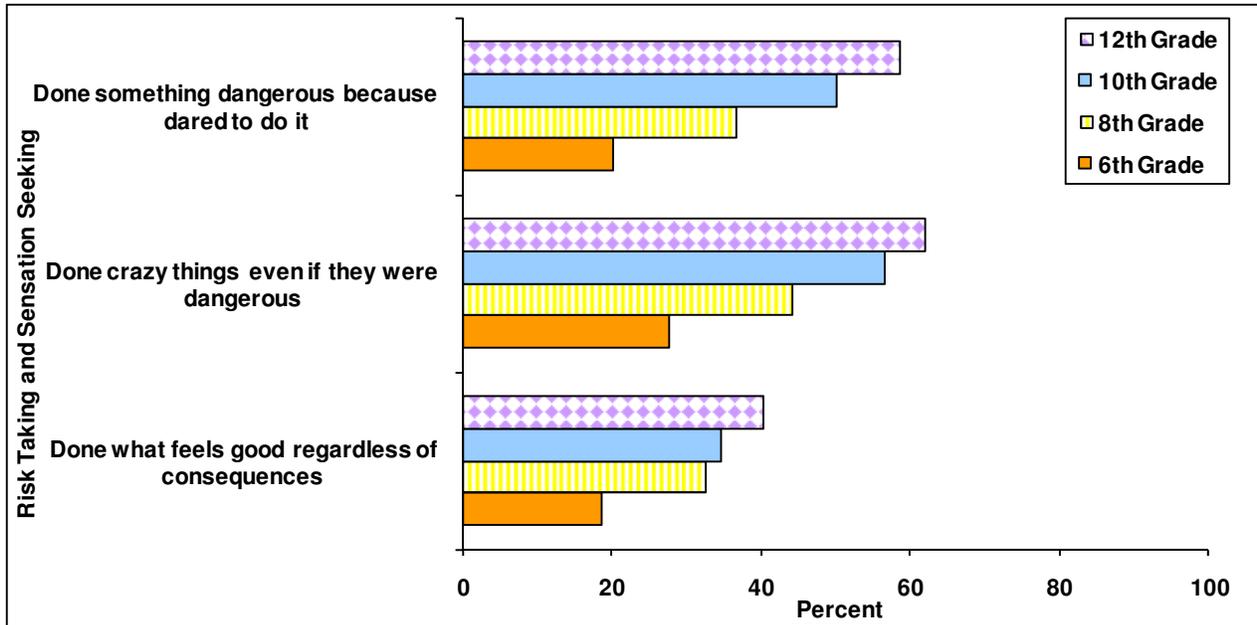


Figure 4a.18. Risk Taking and Sensation Seeking by Grade, 2007 (Weighted Data)

Generally, more youth reported risk taking or sensation seeking behavior as grade level progressed from 6<sup>th</sup> to 12<sup>th</sup> grade. Almost 59% of 12<sup>th</sup> graders, 50.1% of 10<sup>th</sup> graders, 36.7% of 8<sup>th</sup> graders, and 20.2% of 6<sup>th</sup> graders reported doing something dangerous because they were dared to ( $\chi^2=2520.4$ ,  $df=3$ ,  $p<.001$ ). About 62% of 12<sup>th</sup> graders, 56.6% of 10<sup>th</sup> graders, 44.4% of 8<sup>th</sup> graders, and 27.7% of 6<sup>th</sup> graders reported doing crazy things even if they were dangerous ( $\chi^2=2030.0$ ,  $df=3$ ,  $p<.001$ ). About 40% of 12<sup>th</sup> graders, 34.7% of 10<sup>th</sup> graders, 32.6% of 8<sup>th</sup> graders, and 18.6% of 6<sup>th</sup> graders indicated that they did what feels good regardless of consequences ( $\chi^2=910.4$ ,  $df=3$ ,  $p<.001$ ).

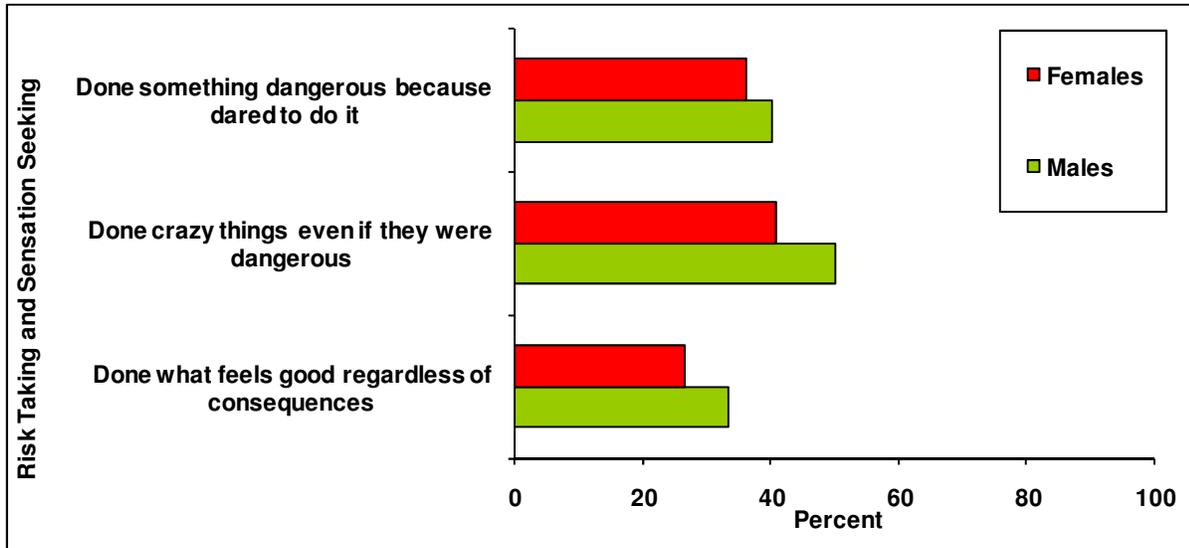


Figure 4a.19. Risk Taking and Sensation Seeking by Gender, 2007 (Weighted Data)

Significantly more males than females engaged in risk taking and sensation seeking behaviors in the past 12 months. About 40% of males and 36.3% of females reported doing something dangerous because they were dared to ( $\chi^2=45.3$ ,  $df=1$ ,  $p<.001$ ). Fifty percent of males and 40.8% of females reported doing crazy things even if they were dangerous ( $\chi^2=216.6$ ,  $df=1$ ,  $p<.001$ ). About 33% of males and 26.7% of females reported doing what feels good regardless of consequences ( $\chi^2=137.9$ ,  $df=1$ ,  $p<.001$ ).

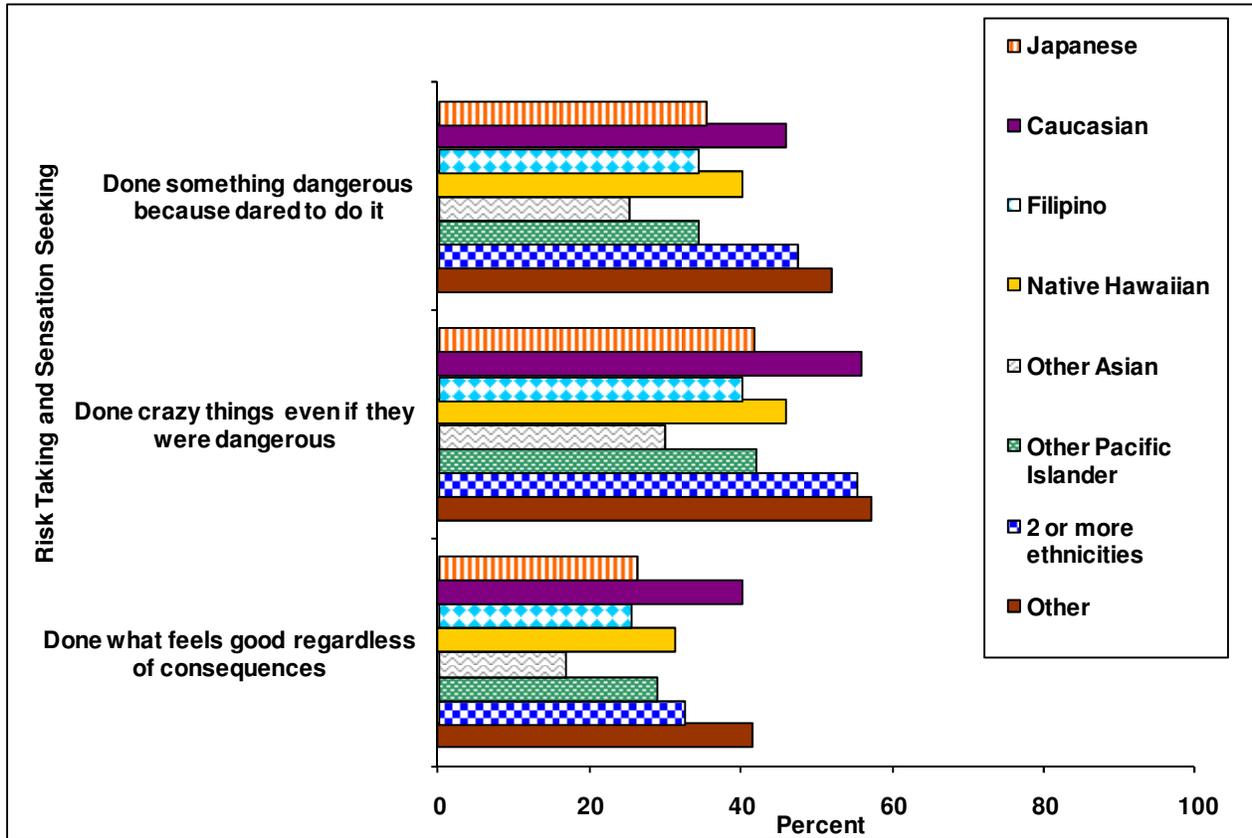


Figure 4a.20. Risk Taking and Sensation Seeking by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for risk taking and sensation seeking behavior. Students of Other, Caucasian, and 2 or more ethnicities reported the highest rates of having engaged in risk taking and sensation seeking behaviors, followed by Native Hawaiian and Other Pacific Islander, with Japanese, Filipino, and Other Asian ethnic groups having the lowest rates. About 35.6% of Japanese students, 46% of Caucasian students, 34.5% of Filipino students, 40.1% of Native Hawaiian students, 25.2% of Other Asian students, 34.4% of Other Pacific Islander students, 47.4% of students of 2 or more ethnicities, and 51.9% of students of Other ethnicities reported doing something dangerous because they were dared to ( $\chi^2=505.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 42% of Japanese students, 56% of Caucasian students, 40.2 % of Filipino students, 46% of Native Hawaiian students, 29.9% of Other Asian students, 42% of Other Pacific Islander students, 55.3% of

students of 2 or more ethnicities, and 57.3% of students of Other ethnicities reported doing crazy things even if they were dangerous ( $\chi^2=648.0$ ,  $df=7$ ,  $p<.001$ ).

About 26% of Japanese students, 40.2% of Caucasian students, 25.6% of Filipino students, 31.2% of Native Hawaiian students, 17% of Other Asian students, 29% of Other Pacific Islander students, 32.5% of students of 2 or more ethnicities, and 41.4% of students of Other ethnicities reported doing what feels good regardless of consequences ( $\chi^2=603.2$ ,  $df=7$ ,  $p<.001$ ).

Table 4a.5. Correlations Between Risk Taking and Sensation Seeking and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Risk Factor: Risk Taking and Sensation Seeking</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Done crazy things even if they were dangerous	.45	.41	.28	.38	.38	.27
Done something dangerous because someone dared you	.40	.38	.25	.31	.34	.28
Done what feels good no matter what the consequences	.43	.38	.30	.37	.39	.24

For the most part, mild to moderate correlations ( $r=.30$  to  $r=.45$ ) were found for risk taking and sensation seeking with youth substance use with the strongest correlation between having done crazy things even if they were dangerous and monthly alcohol use. Risk taking and sensation seeking were also mildly positively correlated with youth substance use for monthly cigarette use and selling illegal drugs.

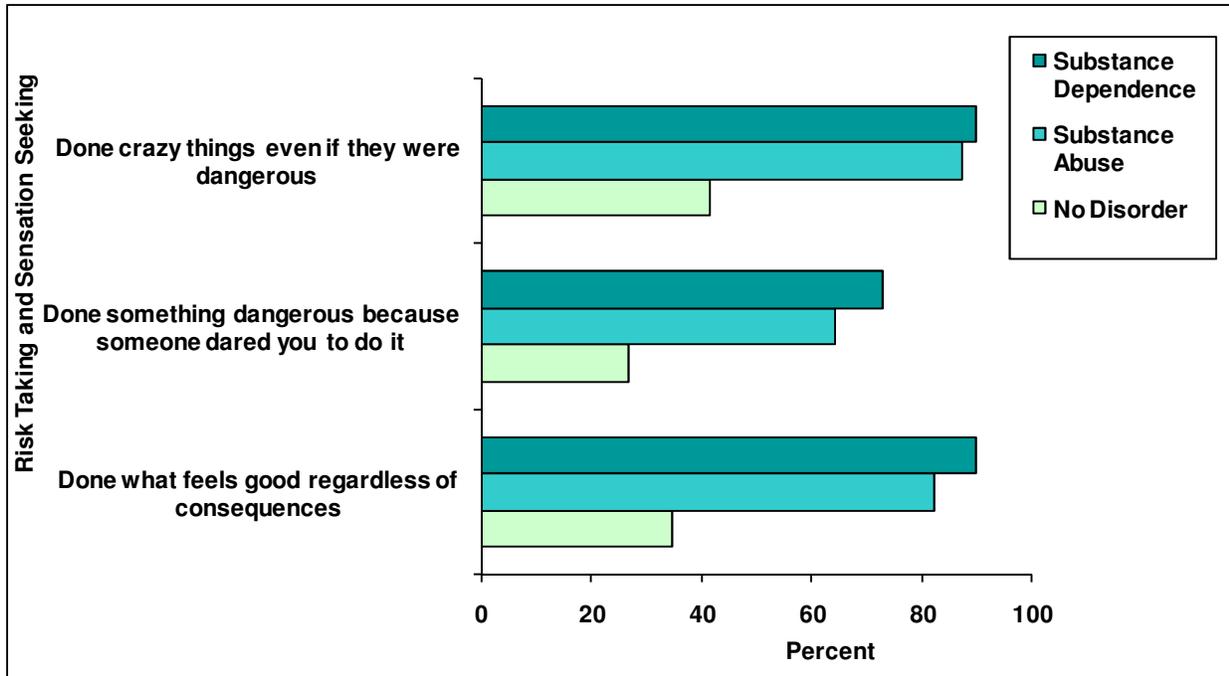


Figure 4a.21. Risk Taking and Sensation Seeking by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to engage in risk taking and sensation seeking. Students with substance abuse and dependence had similar proportions of risk taking and sensation seeking but significantly more than students without substance abuse or dependence for doing crazy things even if they were dangerous, (90% dependence, 87.2% abuse vs. 41.7% none,  $X^2=1516.6$ ,  $df=2$ ,  $p<.001$ ); doing something dangerous because someone dared you to do it (73.1% dependence, 64.2% abuse vs. 26.7% none,  $X^2=1443.8$ ,  $df=2$ ,  $p<.001$ ); and doing what feels good regardless of the consequences (90% dependence, 82.5% abuse vs. 34.9% none,  $X^2=1902.6$ ,  $df=2$ ,  $p<.001$ ).

## REBELLIOUSNESS

Rebelliousness was based on a 3-item, 4-point scale which asked students if they like to see how much they can get away with, if they ignore rules that get in their way, and if they do the opposite of what they are told just to make people mad. Response choices were: (1) *NO!*; (2) *no*; (3) *yes*; and (4) *YES!*. Rebelliousness was defined as *yes and YES!* responses for the above behaviors.

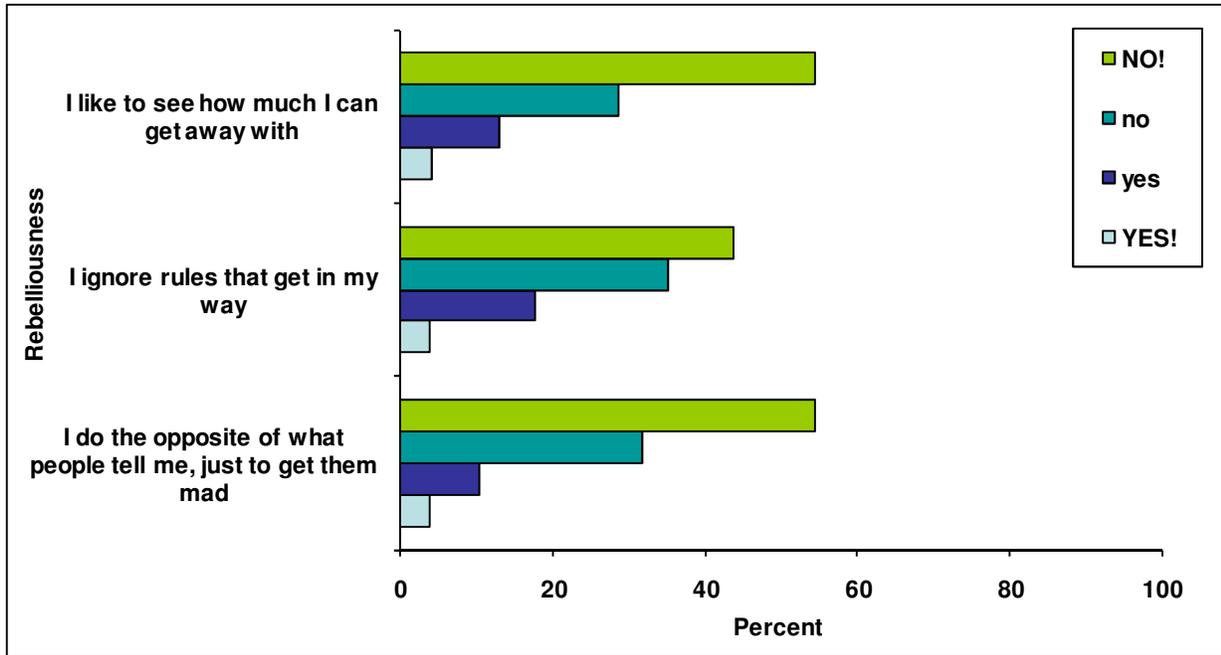


Figure 4a.22. Rebelliousness, 2007 (Weighted Data)

About half the students indicated that they do not engage in rebellious acts. However, one in five students reported they ignore rules that get in their way more than other rebellious behaviors (*yes* = 17.5% and *YES!* = 3.8).

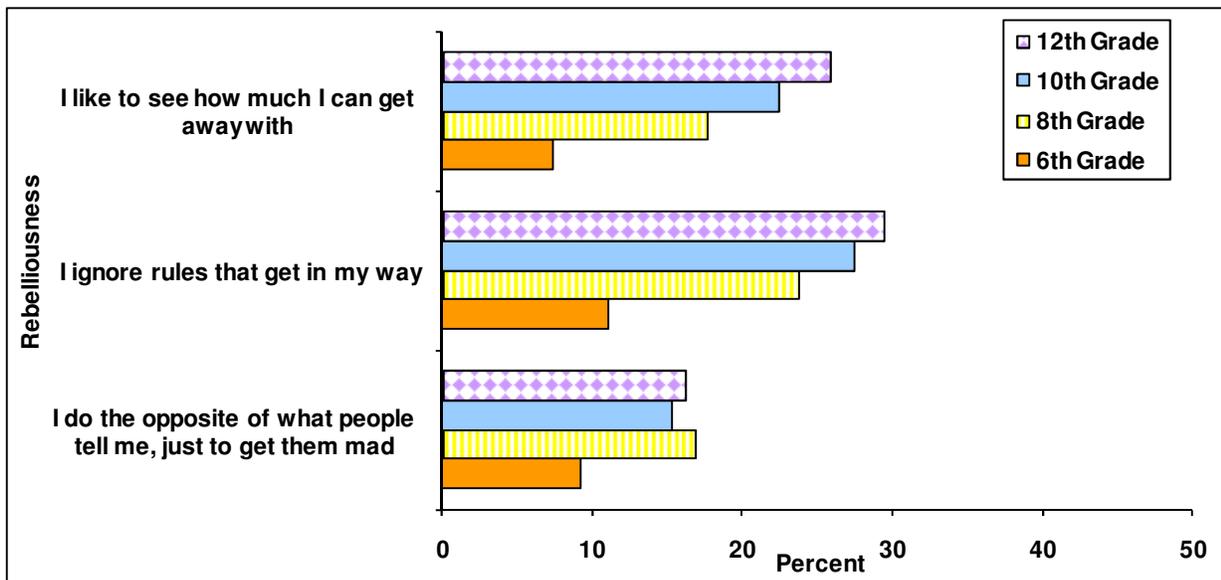


Figure 4a.23. Rebelliousness by Grade, 2007 (Weighted Data)

Overall, more youth in higher grade levels reported rebellious behavior than youth in lower grade levels. Almost 26% of 12<sup>th</sup> graders, 22.5% of 10<sup>th</sup> graders, 17.6% of 8<sup>th</sup> graders, and 7.4% of 6<sup>th</sup> graders indicated they like to see how much they can get away with ( $\chi^2=1014.6$ ,  $df=3$ ,  $p<.001$ ). About 29% of 12<sup>th</sup> graders, 27.5% of 10<sup>th</sup> graders, 23.8% of 8<sup>th</sup> graders, and 11.1% of 6<sup>th</sup> graders reported they ignore rules that get in their way ( $\chi^2=926.7$ ,  $df=3$ ,  $p<.001$ ). Close to 16% of 12<sup>th</sup> graders, 15.3% of 10<sup>th</sup> graders, 16.9% of 8<sup>th</sup> graders, and 9.3% of 6<sup>th</sup> graders reported they do the opposite of what people tell them just to make them mad ( $\chi^2=247.3$ ,  $df=3$ ,  $p<.001$ ).

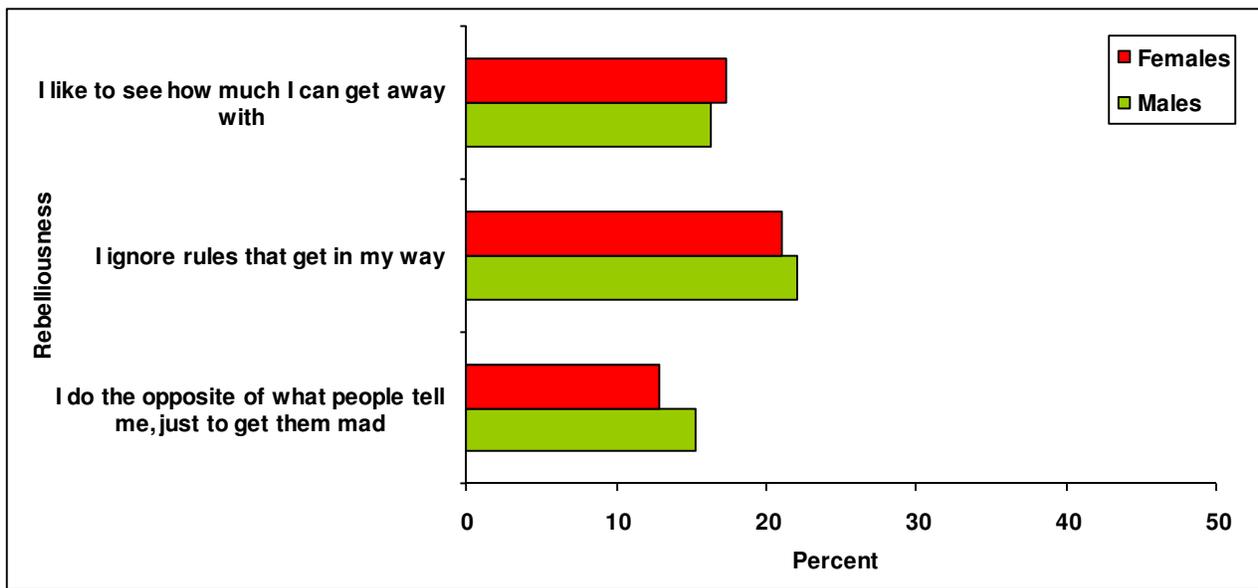


Figure 4a.24. Rebelliousness by Gender, 2007 (Weighted Data)

Overall, there were no patterns of rebelliousness by gender, although some slight differences were found. About 16% of males and 17.3% of females indicated they liked to see how much they can get away with ( $\chi^2=4.7$ ,  $df=1$ ,  $p<.05$ ). About 15% of males and 12.8% of females reported doing the opposite of what they are told just to get people mad ( $\chi^2=30.7$ ,  $df=1$ ,  $p<.001$ ). There were no significant differences between males and females reporting they ignore rules that get in their way ( $\chi^2=3.7$ ,  $df=1$ ,  $p=.055$ ).

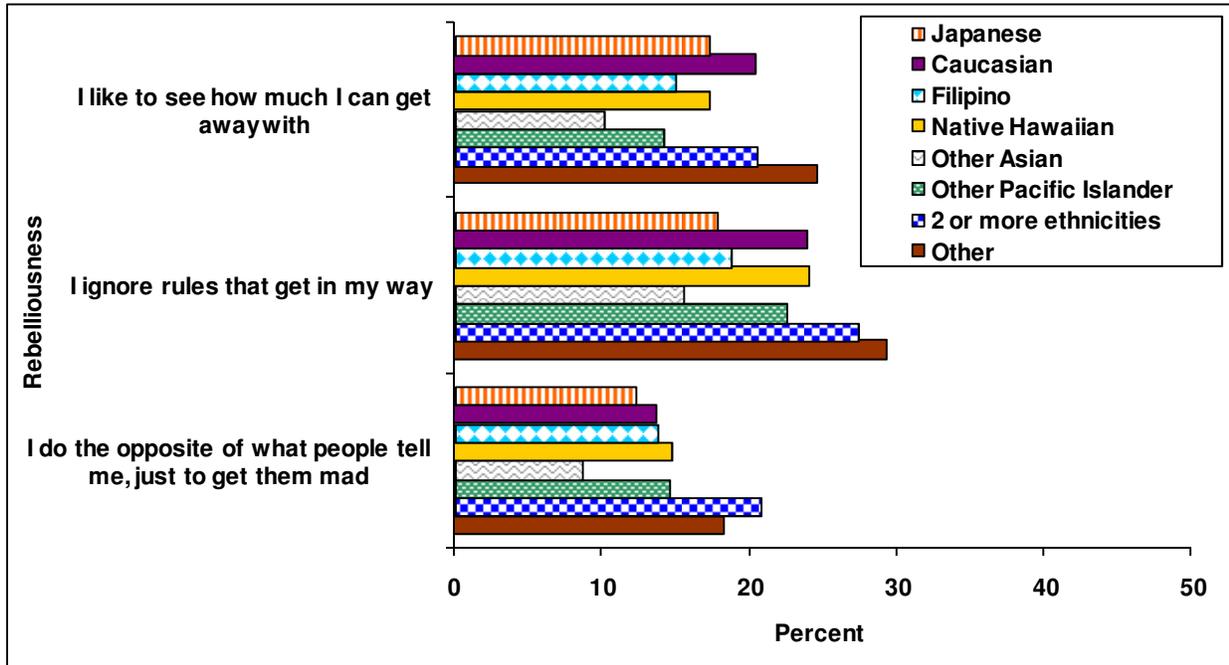


Figure 4a.25. Rebelliousness by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for rebellious behavior. Overall, students of Other and 2 or more ethnicities reported the highest rates of rebelliousness, with Other Asian ethnic groups having the lowest rates. About 17% of Japanese students, 20.5% of Caucasian students, 15% of Filipino students, 17.4% of Native Hawaiian students, 10.2% of Other Asian students, 14.2% of Other Pacific Islander students, 20.5% of students of 2 or more ethnicities, and 24.6% of students of Other ethnicities indicated they like to see how much they can get away with ( $\chi^2=224.4$ ,  $df=7$ ,  $p<.001$ ).

Almost 18% of Japanese students, 23.9% of Caucasian students, 18.8% of Filipino students, 24.1% of Native Hawaiian students, 15.6% of Other Asian students, 22.6% of Other Pacific Islander students, 27.4% of students of 2 or more ethnicities, and 29.3% of students of Other ethnicities reported doing crazy things even if they were dangerous ( $\chi^2=212.1$ ,  $df=7$ ,  $p<.001$ ).

About 12% of Japanese students, 13.7% of Caucasian students, 13.8% of Filipino students, 14.8% of Native Hawaiian students, 8.7% of Other Asian students, 14.6% of Other Pacific Islander students, 20.8% of

students of 2 or more ethnicities, and 18.3% of students of Other ethnicities reported they do the opposite of what they are told just to get people mad ( $\chi^2=114.4$ ,  $df=7$ ,  $p<.001$ ).

Table 4a.6. Correlations Between Rebelliousness and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Risk Factor: Rebelliousness</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
I like to see how much I can get away with	.32	.27	.23	.24	.27	.19
I ignore rules that get in my way	.31	.27	.22	.27	.27	.18
I do the opposite of what people tell me, just to get them mad	.21	.17	.15	.15	.18	.15

Rebelliousness was mildly positively correlated with youth substance use ( $r=.21$  to  $r=.32$ ), with the strongest relationship between seeing how much one can get away with and monthly alcohol use.

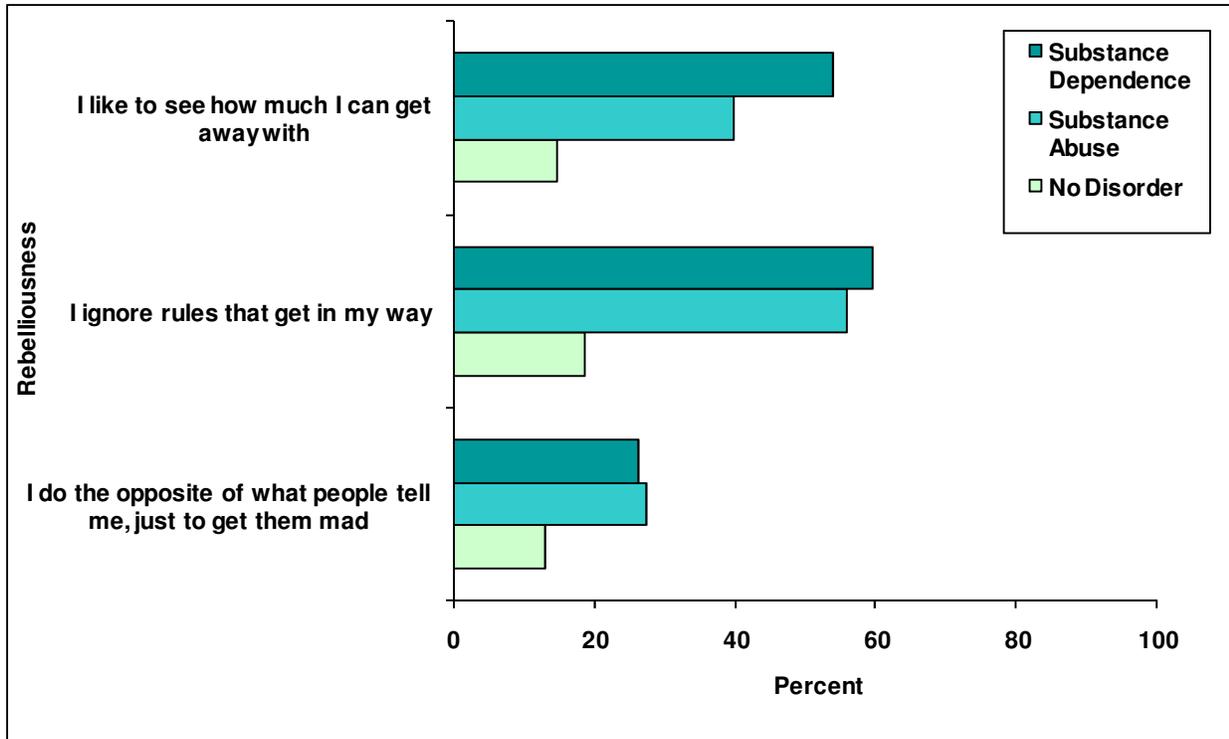


Figure 4a.26. Rebelliousness by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students who met criteria for substance abuse or dependence were significantly more likely to be rebellious than students without substance abuse or dependence. Students with substance abuse and dependence had similar proportions of rebelliousness but significantly more than students without substance abuse or dependence for ignoring rules that get in their way, (59.6% dependence, 55.8% abuse vs. 18.7% none,  $\chi^2=1527.6$ ,  $df=2$ ,  $p<.001$ ) and doing the opposite of what people tell them just to get them mad (26.3% dependence, 27.5% abuse vs. 13% none,  $\chi^2=270.7$ ,  $df=2$ ,  $p<.001$ ). Students with substance dependence were significantly most likely to indicate that they like to see how much they can get away with (53.9% dependence vs. 39.8% abuse vs. 14.8% none,  $\chi^2=1294.8$ ,  $df=2$ ,  $p<.001$ ). Students ignoring rules that get in their way was the rebelliousness variable reported the most for all substance use disorder classifications.

## DELINQUENCY

Delinquency was based on a 3-item 6-point scale which asked how many times in the past 12 months students have been arrested, been suspended from school, and drunk or high at school. Response choices were: (0) *Never*; (1) *1-2 times*; (2) *3-5 times*; (3) *6-9 times*; (4) *10-19 times*; and (5) *20-29 times*; and (6) *30 or more times*. Delinquency was defined as any occurrence which resulted in being arrested, suspended, and drunk or high at school.

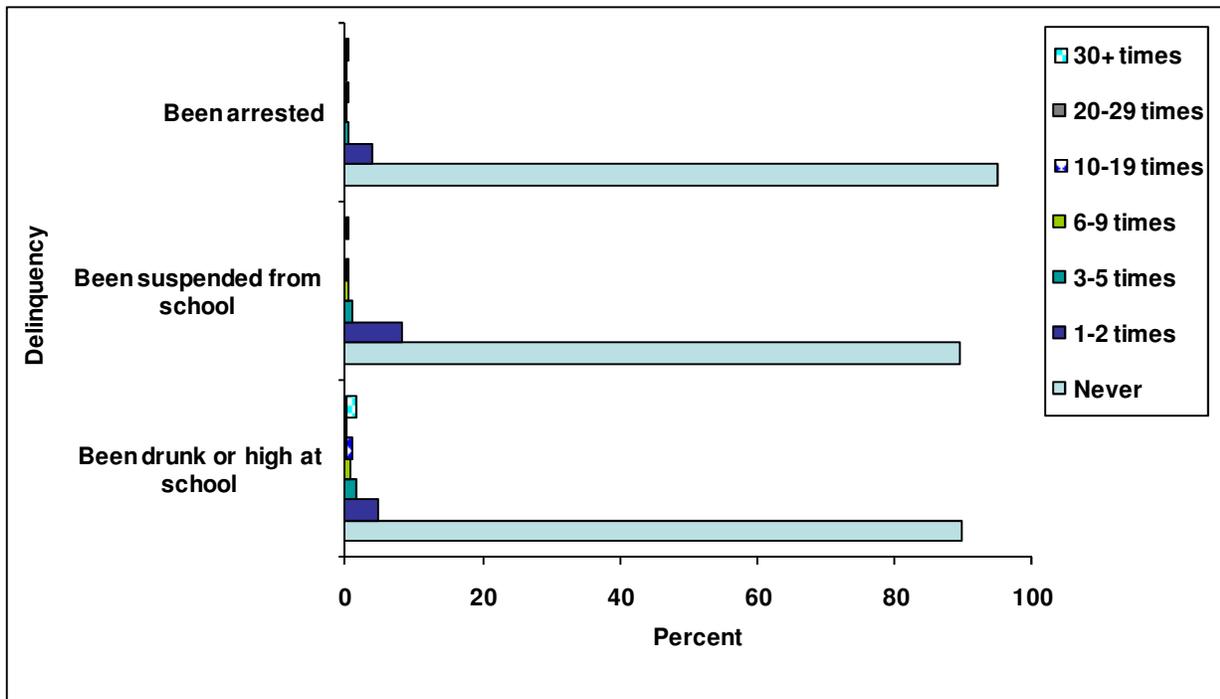


Figure 4a.27. Delinquency, 2007 (Weighted Data)

The vast majority of students reported never having engaged in delinquent behaviors. Slightly more than 95% of students reported they have never been arrested, 89.6% have never been suspended from school, and 89.9% have never been drunk or high at school.

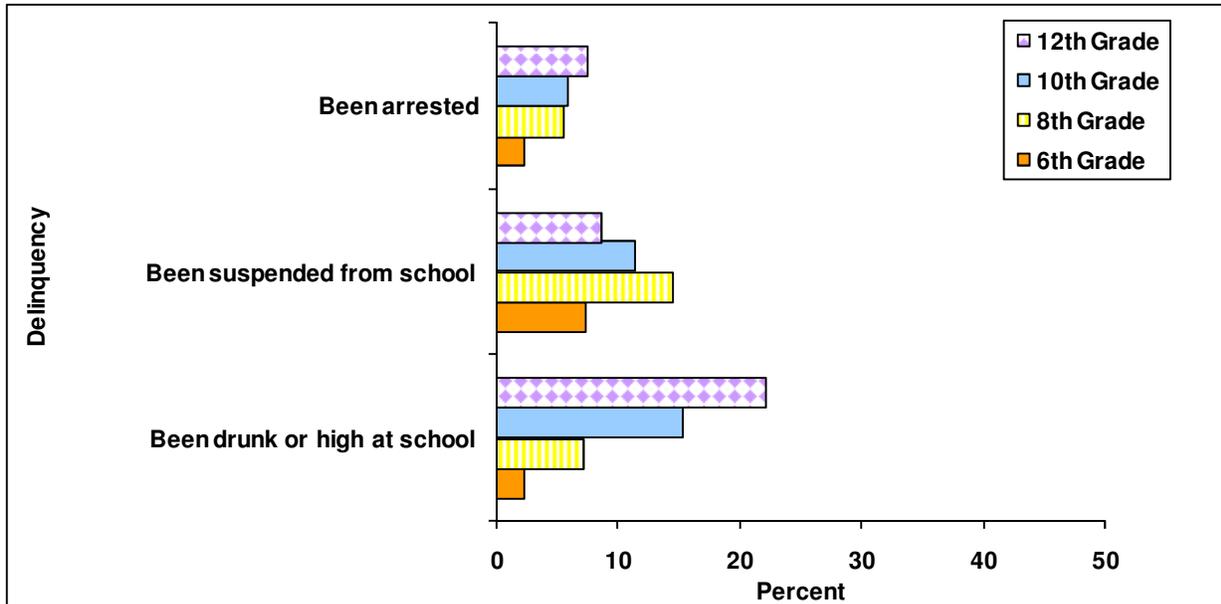


Figure 4a.28. Delinquency by Grade, 2007 (Weighted Data)

For arrests and being drunk or high at school, more youth reported delinquent behavior as grade level increased from 6<sup>th</sup> to 12<sup>th</sup> grade. Seven and a half percent of 12<sup>th</sup> graders, 5.9% of 10<sup>th</sup> graders, 5.6% of 8<sup>th</sup> graders, and 2.3% of 6<sup>th</sup> graders reported having been arrested in the past 12 months ( $\chi^2=224.8$ ,  $df=3$ ,  $p<.001$ ). About 22% of 12<sup>th</sup> graders, 15.3% of 10<sup>th</sup> graders, 7.3% of 8<sup>th</sup> graders, and 2.3% of 6<sup>th</sup> graders reported they had been drunk or high at school in the past 12 months ( $\chi^2=1695.1$ ,  $df=3$ ,  $p<.001$ ).

Eighth and 10<sup>th</sup> graders were more likely to have been suspended than 6<sup>th</sup> or 12<sup>th</sup> graders. Almost 9% of 12<sup>th</sup> graders, 11.4% of 10<sup>th</sup> graders, 14.6% of 8<sup>th</sup> graders, and 7.4% of 6<sup>th</sup> graders reported they had been suspended in the past 12 months ( $\chi^2=248.8$ ,  $df=3$ ,  $p<.001$ ).

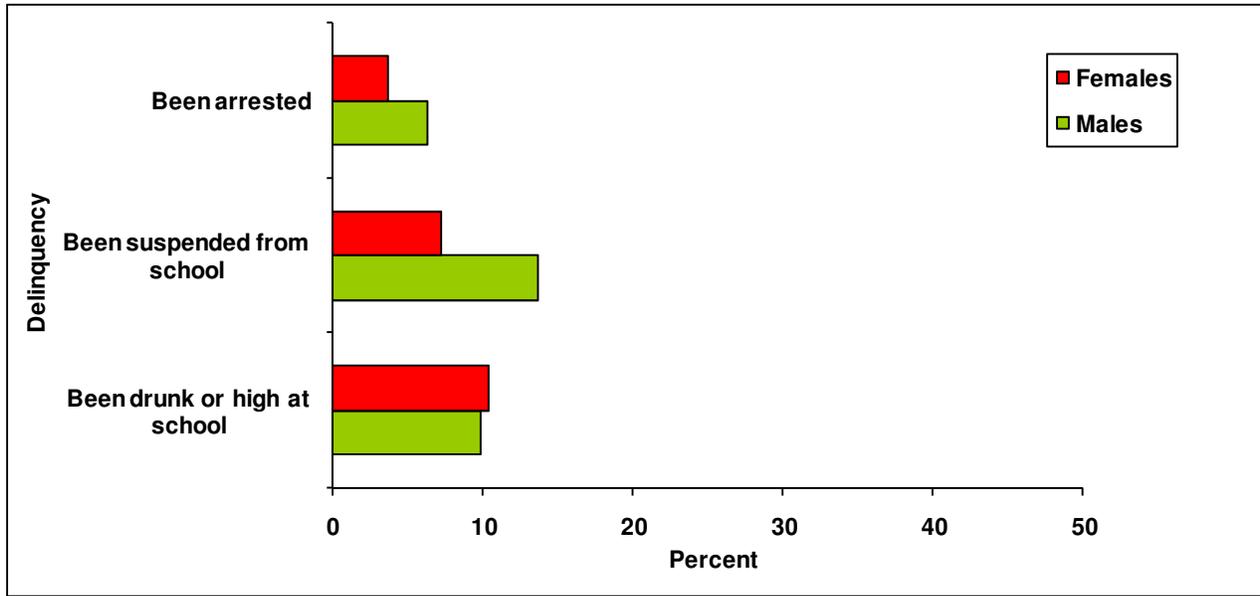


Figure 4a.29. Delinquency by Gender, 2007 (Weighted Data)

Overall, more males engaged in delinquent behaviors compared to females for arrests (6.3% of males vs. 3.7% of females;  $\chi^2=93.8$ ,  $df=1$ ,  $p<.001$ ) and suspensions (13.6% of males vs. 7.2% of females;  $\chi^2=287.1$ ,  $df=1$ ,  $p<.001$ ) in the past 12 months. There were no significant differences between males and females reporting being drunk or high at school in the past 12 months (9.8% of males vs. 10.4% of females;  $\chi^2=2.3$ ,  $df=1$ ,  $p=.130$ ).

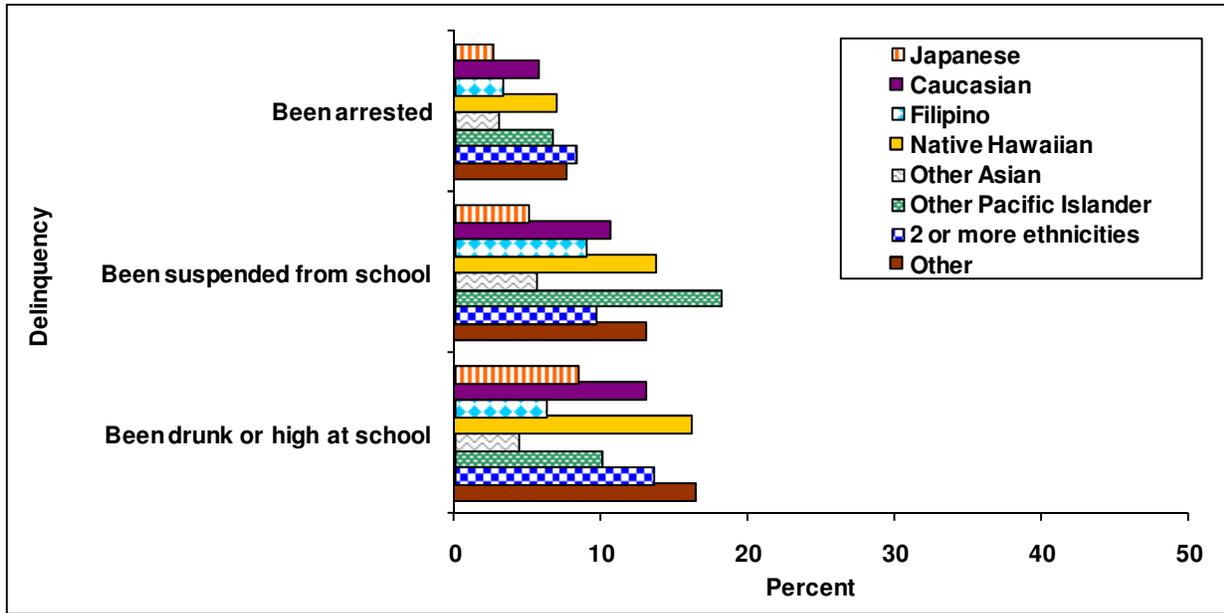


Figure 4a.30. Delinquency by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for delinquent behavior. Generally, students of Native Hawaiian, Other Pacific Islander, Caucasian, Other, and 2 or more ethnicities reported higher rates of delinquency than Other Asian, Filipino, and Japanese ethnic groups. About 2.5% of Japanese students, 5.7% of Caucasian students, 3.3% of Filipino students, 7% of Native Hawaiian students, 3% of Other Asian students, 6.7% of Other Pacific Islander students, 8.3% of students of 2 or more ethnicities, and 7.7% of students of Other ethnicities reported having been arrested in the past 12 months ( $\chi^2=204.5$ ,  $df=7$ ,  $p<.001$ ).

About 5% of Japanese students, 10.6% of Caucasian students, 9 % of Filipino students, 13.7% of Native Hawaiian students, 5.6% of Other Asian students, 18.2% of Other Pacific Islander students, 9.7% of students of 2 or more ethnicities, and 13.1% of students of Other ethnicities reported having been suspended in the past 12 months ( $\chi^2=413.3$ ,  $df=7$ ,  $p<.001$ ).

About 6.5% of Japanese students, 13% of Caucasian students, 6.3% of Filipino students, 16.2% of Native Hawaiian students, 4.4% of Other Asian students, 10.1% of Other Pacific Islander students, 13.6% of students of 2 or more ethnicities, and 16.5% of students of Other ethnicities reported they had been drunk or high at school in the past 12 months ( $\chi^2=552.8$ ,  $df=7$ ,  $p<.001$ ).

Table 4a.7. Correlations Between Delinquency and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Risk Factor: Delinquency</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Times arrested within past year	.28	.32	.29	.29	.43	.56
Times suspended from school within past year	.23	.25	.25	.24	.36	.47
Times drunk or high at school within the past year	.51	.51	.41	.65	1.00	.61

Delinquency was positively correlated with youth substance use. Moderate to strong correlations were found for the number of times students reported being drunk or high at school within the past year and monthly substance use ( $r=.41$  to  $r=.65$ ) with the strongest correlation with monthly marijuana use ( $r=.65$ ). In addition, moderate correlations between delinquency and being drunk or high at school ( $r=.36$  and  $r=.43$ ) and selling illegal drugs ( $r=.47$  to  $r=.61$ ) were also found.

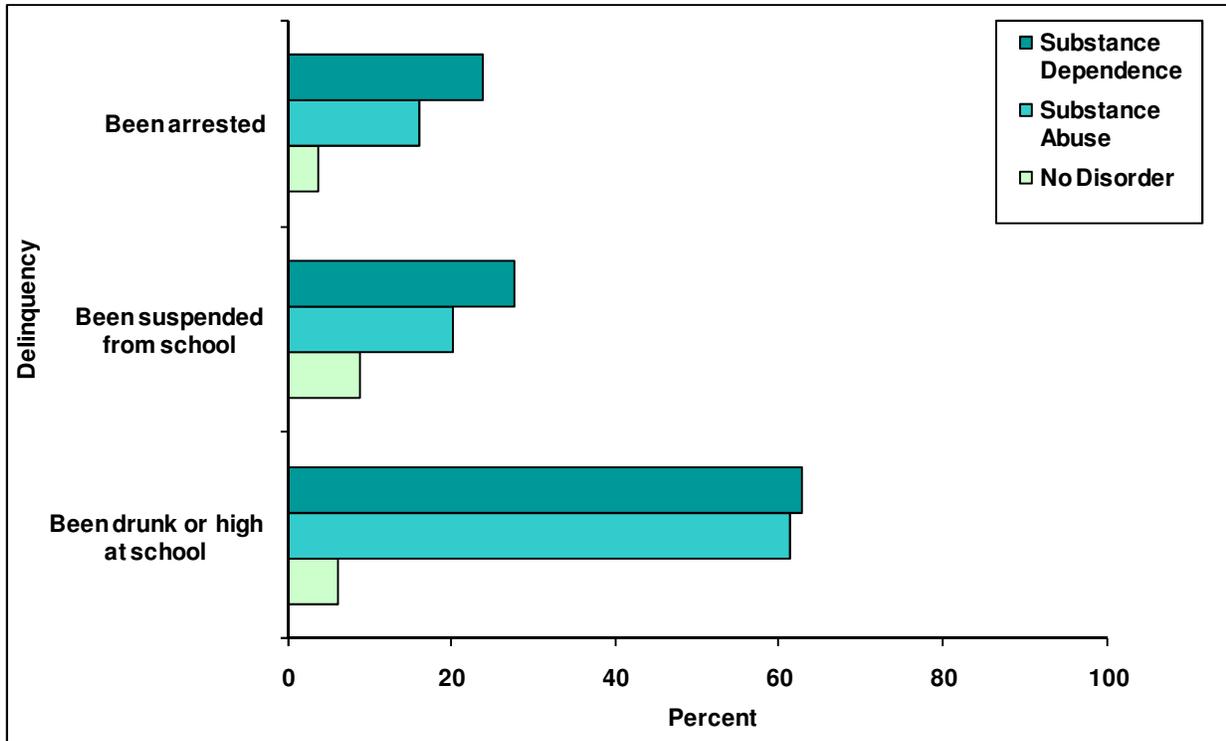


Figure 4a.31. Delinquency by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students who met criteria for substance abuse or dependence were significantly more likely to have engaged in delinquent behaviors. Students with substance abuse and dependence had similar proportions of delinquency but significantly more than students without substance abuse or dependence for being drunk or high at school, ( $\chi^2=5676.8$ ,  $df=2$ ,  $p<.001$ ). Students with substance dependence were significantly more likely to be rebellious than students with substance abuse for being arrested (23.9% dependence vs. 16.1% abuse vs. 3.7% none,  $\chi^2=1034.3$ ,  $df=2$ ,  $p<.001$ ) and being suspended from school (27.7% dependence vs. 20.1% abuse vs. 8.8% none,  $\chi^2=459.1$ ,  $df=2$ ,  $p<.001$ ). Being drunk or high at school was the delinquency variable reported the most for students who met criteria for abuse or dependence.

## VALUES ABOUT SUBSTANCE USE

Values regarding ATOD use were measured using a 4-point scale asking students how wrong they think it is for someone their age to use alcohol, cigarettes, marijuana, or other illegal drugs. Response choices were: (1) *Not at all wrong*; (2) *A little bit wrong*; (3) *Wrong*; and (4) *Very wrong*. Values favorable toward substance use was defined as any responses of *Not at all wrong* and *A little bit wrong*.

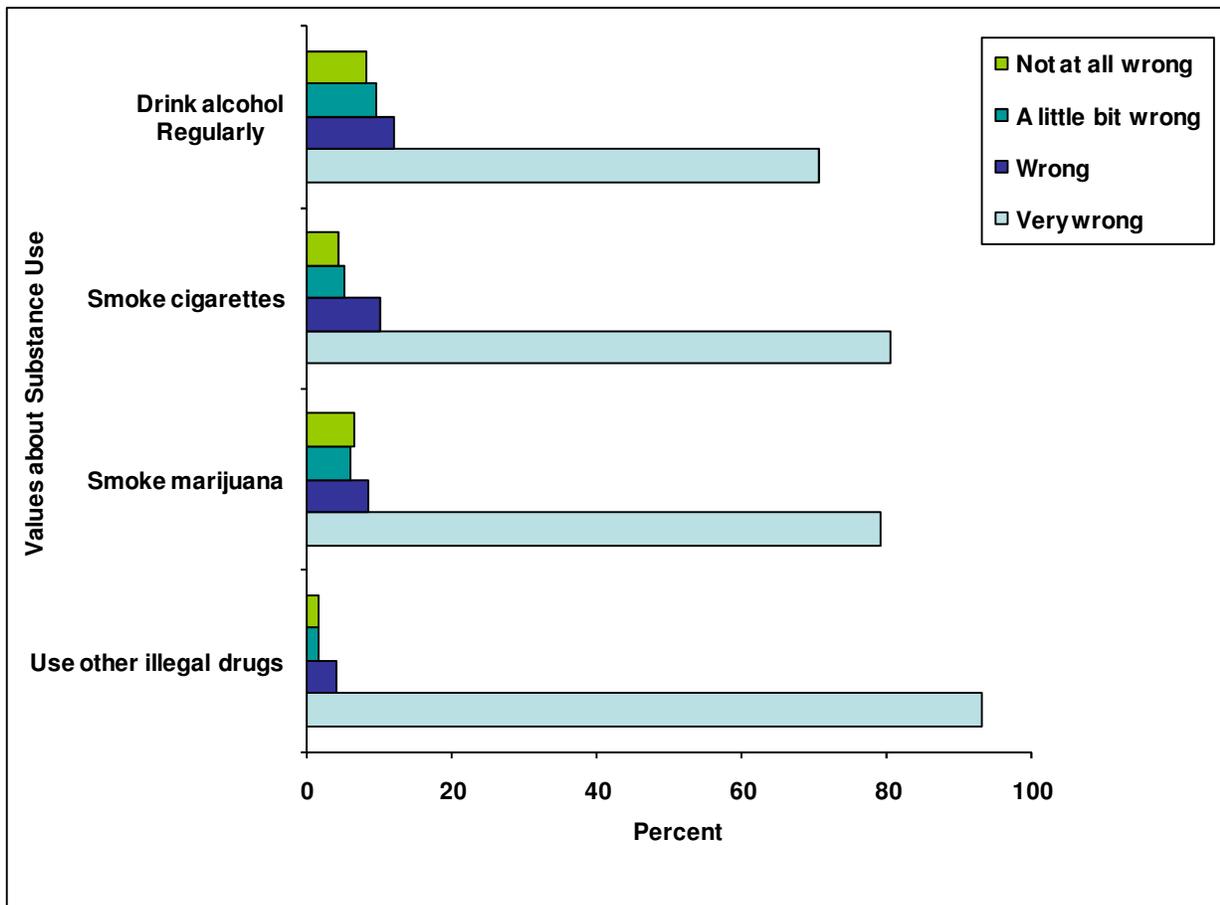


Figure 4a.32. Values about Substance Use, 2007 (Weighted Data)

A majority of students think it is very wrong to use other illegal drugs (93.1%), smoke cigarettes (80.5%), smoke marijuana (79.2%), and drink alcohol regularly (70.6%).

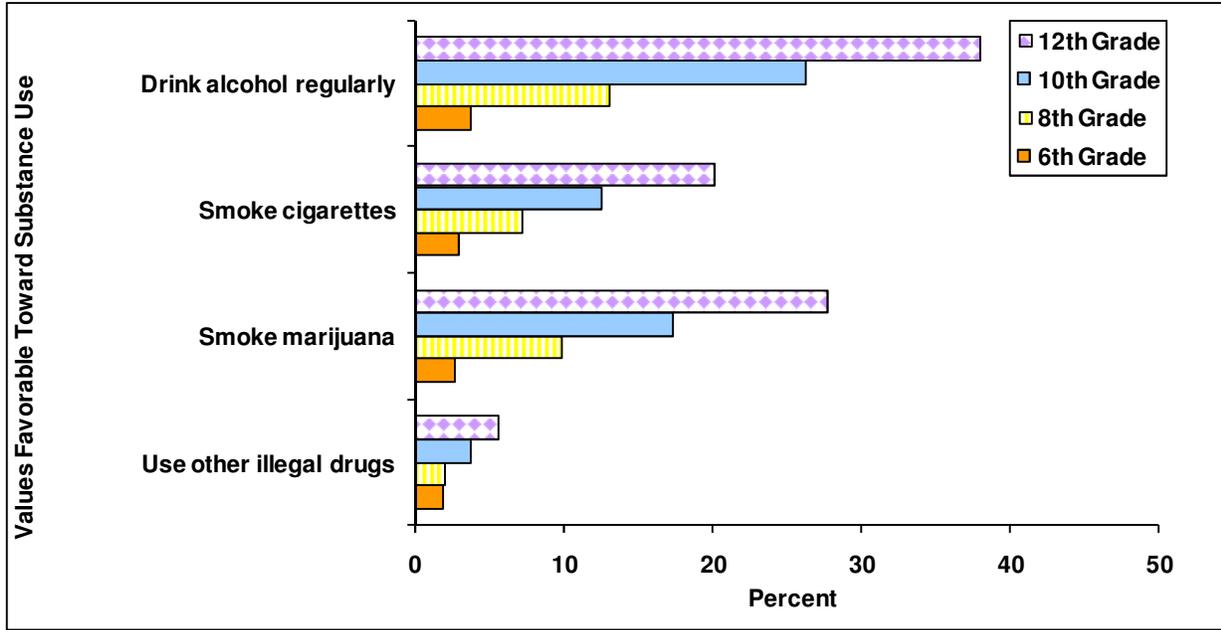


Figure 4a.33. Values Favorable Toward Substance Use by Grade, 2007 (Weighted Data)

Generally, more youth indicated values favorable toward substance use as grade level increased from 6<sup>th</sup> to 12<sup>th</sup> grade. About 38% of 12<sup>th</sup> graders, 26.3% of 10<sup>th</sup> graders, 13.2% of 8<sup>th</sup> graders, and 3.7% of 6<sup>th</sup> graders said it was not wrong to drink alcohol regularly ( $\chi^2=3162.0$ ,  $df=3$ ,  $p<.001$ ). About 20% of 12<sup>th</sup> graders, 12.5% of 10<sup>th</sup> graders, 7.3% of 8<sup>th</sup> graders, and 2.9% of 6<sup>th</sup> graders indicated that it was not wrong to smoke cigarettes ( $\chi^2=1269.2$ ,  $df=3$ ,  $p<.001$ ). Almost 28% of 12<sup>th</sup> graders, 17.3% of 10<sup>th</sup> graders, 10% of 8<sup>th</sup> graders, and 2.7% of 6<sup>th</sup> graders indicated that it was not wrong to smoke marijuana ( $\chi^2=2083.5$ ,  $df=3$ ,  $p<.001$ ). Almost 6% of 12<sup>th</sup> graders, 3.7% of 10<sup>th</sup> graders, 2.1% of 8<sup>th</sup> graders, and 1.9% of 6<sup>th</sup> graders said it was not wrong to use other illegal drugs ( $\chi^2=198.2$ ,  $df=3$ ,  $p<.001$ ).

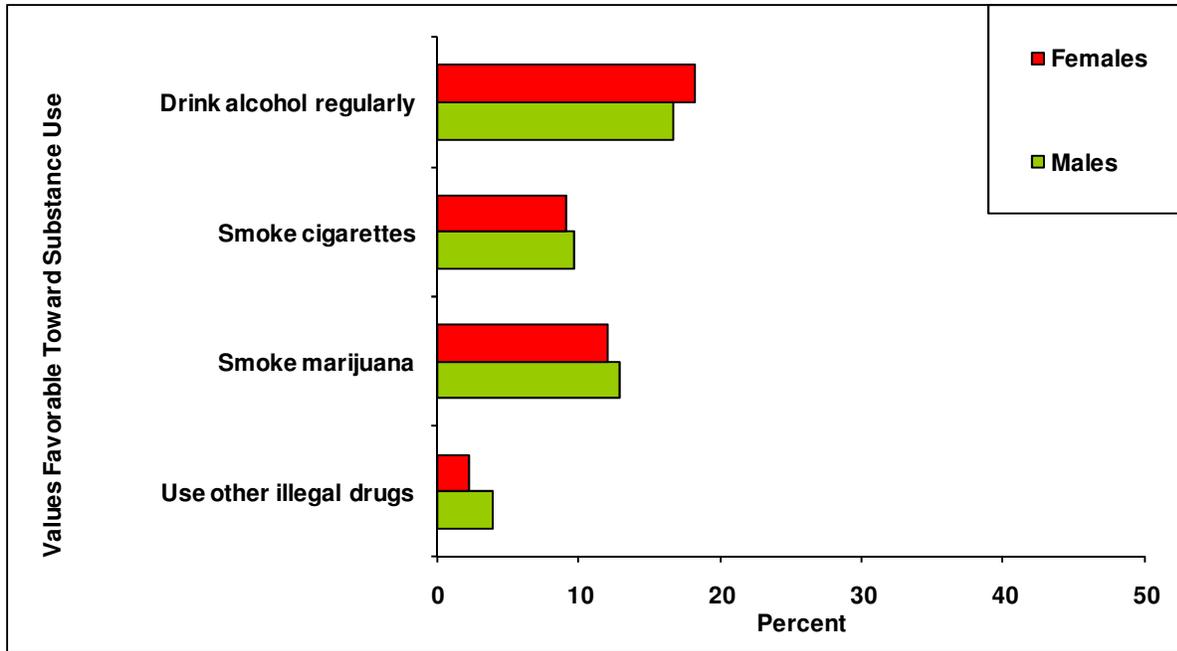


Figure 4a.34. Values Favorable Toward Substance Use by Gender, 2007 (Weighted Data)

Some gender differences between males and females were found in values favorable towards substance use. About 18% of males and 16.6% of females said it was not wrong to drink alcohol regularly ( $\chi^2=12.1$ ,  $df=1$ ,  $p=.001$ ). Almost 4% of males and 2.2% of females indicated it was not wrong to use other illegal drugs ( $\chi^2=62.4$ ,  $df=1$ ,  $p<.001$ ). No significant differences were found between males and females on values about smoking cigarettes (9.6% vs. 9.1%;  $\chi^2=2.0$ ,  $df=1$ ,  $p=.160$ ) or smoking marijuana (12.9% vs. 12.1%;  $\chi^2=3.4$ ,  $df=1$ ,  $p=.065$ ).

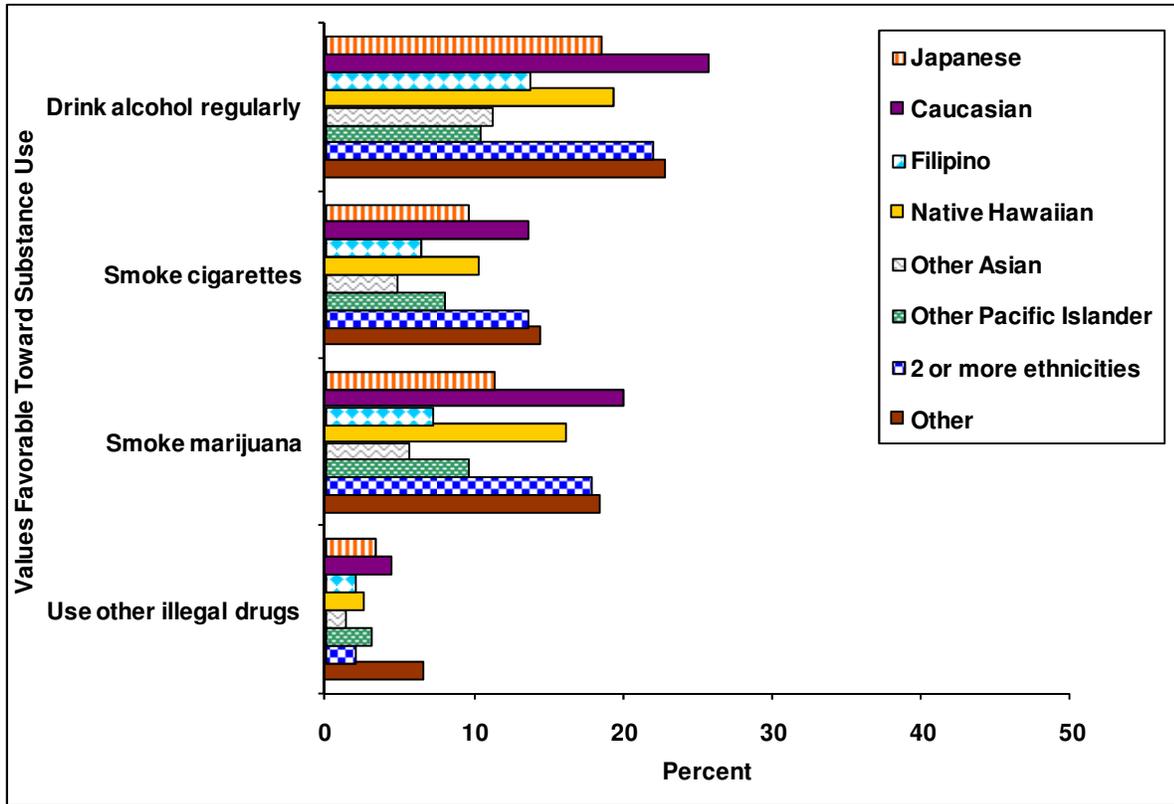


Figure 4a.35. Values Favorable Toward Substance Use by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for values favorable toward substance use. Overall, students of Caucasian, Other, and 2 or more ethnicities reported the highest rates of having engaged in those behaviors, followed by Native Hawaiian and Japanese, compared to other ethnic groups. About 18.5% of Japanese students, 25.8% of Caucasian students, 13.7 % of Filipino students, 19.4% of Native Hawaiian students, 11.2% of Other Asian students, 10.4% of Other Pacific Islander students, 22% of students of 2 or more ethnicities, and 22.8% of students of Other ethnicities said it was not wrong to drink alcohol regularly ( $\chi^2=490.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 10% of Japanese students, 13.6% of Caucasian students, 6.5% of Filipino students, 10.3% of Native Hawaiian students, 4.8% of Other Asian students, 8.1% of Other Pacific Islander students, 13.6% of students of 2 or more ethnicities, and 14.4% of students of Other ethnicities indicated it was not wrong to smoke cigarettes ( $\chi^2=291.4$ ,  $df=7$ ,  $p<.001$ ).

About 11% of Japanese students, 20% of Caucasian student, 7.2% of Filipino students, 16.2% of Native Hawaiian students, 5.6% of Other Asian students, 9.7% of Other Pacific Islander students, 17.9% of students of 2 or more ethnicities, and 18.4% of students of Other ethnicities said it was not wrong to smoke marijuana ( $\chi^2=661.9$ ,  $df=7$ ,  $p<.001$ ).

Almost 3.5% of Japanese students, 4.5% of Caucasian students, 2% of Filipino students, 2.6% of Native Hawaiian students, 1.4% of Other Asian students, 3.1% of Other Pacific Islanders students, 2.1% of students of 2 or more ethnicities, and 6.6% of students of Other ethnicities indicated it was not wrong to use other illegal drugs ( $\chi^2=162.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4a.8. Correlations Between Values About Substance Use and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Values About Substance Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How wrong to drink alcohol regularly	-.48	-.43	-.29	-.40	-.38	-.24
How wrong to smoke cigarettes	-.39	-.36	-.42	-.36	-.32	-.23
How wrong to smoke marijuana	-.46	-.43	-.33	-.54	-.47	-.30
How wrong to use LSD, cocaine, methamphetamine, or other illegal drugs	-.28	-.28	-.26	-.31	-.29	-.27

For the most part, values about substance use were mildly to moderately negatively correlated ( $r=-.30$  to  $r=-.54$ ) with substance use frequency. The strongest negative relationship was between wrong to smoke marijuana and monthly marijuana use.

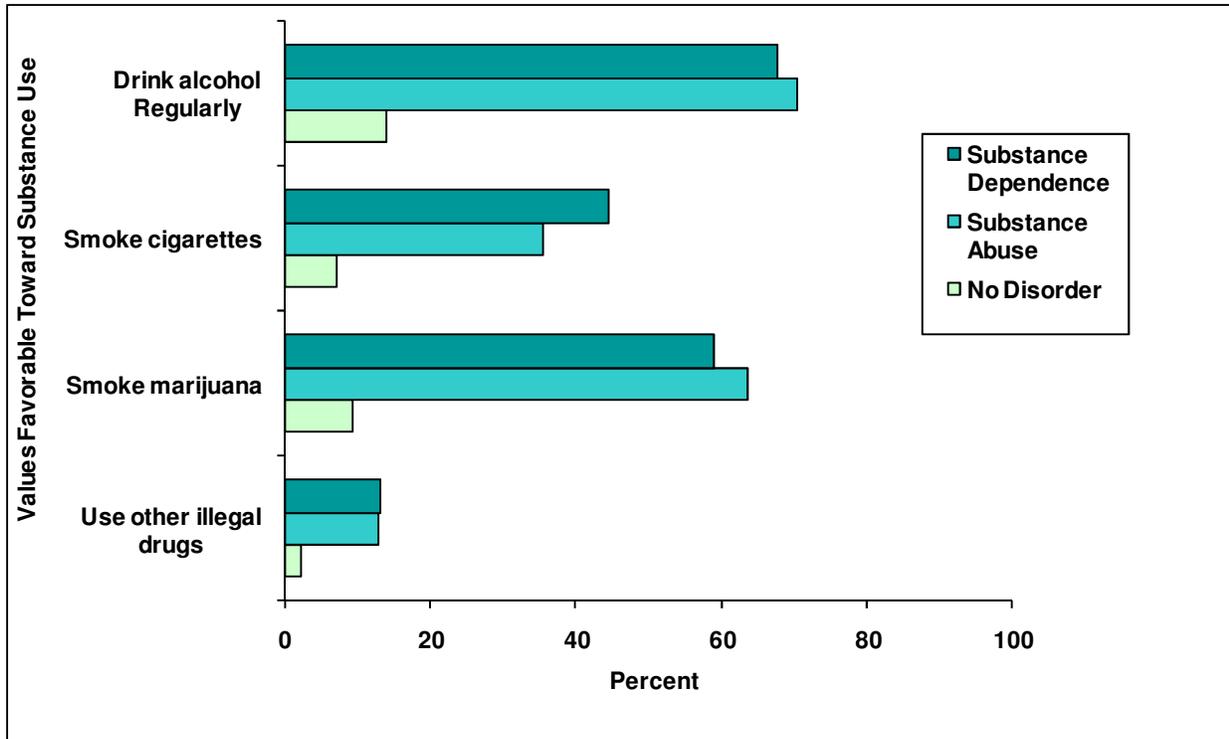


Figure 4a.36. Values Favorable Toward Substance Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students who met criteria for substance abuse or dependence were significantly more likely to have values favorable toward substance use than students without substance abuse or dependence. Students with substance abuse and dependence had similar proportions of favorable values toward substance use (with abuse being slightly higher) but significantly more than students without substance abuse or dependence for favorable values toward drinking alcohol regularly (67.6% dependence, 70.5% abuse vs. 14% none,  $X^2=3427.3$ ,  $df=2$ ,  $p<.001$ ) and favorable values toward smoking marijuana (59% dependence, 63.5% abuse vs. 9.2% none,  $X^2=4005.6$ ,  $df=2$ ,  $p<.001$ ). Students with substance abuse and dependence had similar proportions of favorable substance use values (dependence was slightly higher) but significantly more than students without substance abuse or dependence for favorable attitudes toward using other illegal drugs (13% dependence, 12.8% abuse vs. 2.3% none,  $X^2=650.0$ ,  $df=2$ ,  $p<.001$ ). Students with substance dependence were significantly more likely than students with substance abuse to have favorable values toward smoking cigarettes (44.4% dependence vs. 35.6% abuse vs. 7.2% none,

$\chi^2=2109.3$ ,  $df=2$ ,  $p<.001$ ). Values favorable toward drinking alcohol regularly was reported most often for all substance use disorder classifications.

#### PERCEIVED RISK OF HARM FROM ATOD USE

---

Students' perceived risk of harm from ATOD use was measured using a 9-item, 5-point scale by asking students how much they think people risk harming themselves if they: smoke one or more packs of cigarettes per day; have four or more drinks of alcohol once or twice each weekend; use marijuana occasionally; use inhalants occasionally; use cocaine occasionally; use methamphetamine occasionally; use hallucinogens occasionally; use ecstasy occasionally; and use prescription drugs without a doctor's instruction. Response choices were: (0) *No risk*; (1) *Slight risk*; (2) *Moderate risk*; (3) *Great risk*; and (4) *I Don't Know*. Low perceived risk of harm from ATOD use was defined as responses of *No risk* and *Slight risk*.

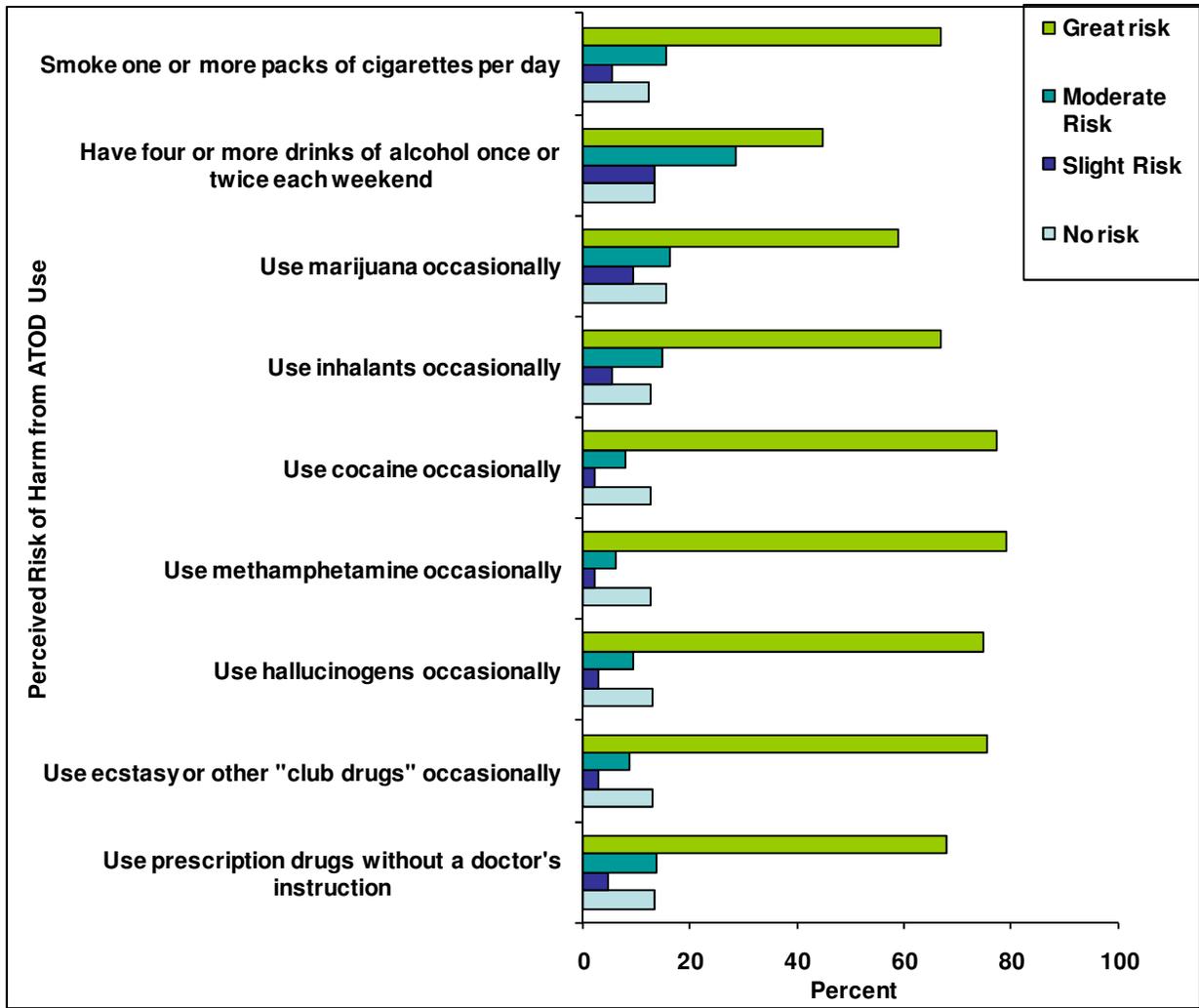


Figure 4a.37. Perceived Risk of Harm from ATOD Use, 2007 (Weighted Data)

Most students reported they think there is great risk of harm from using substances. Methamphetamine posed the greatest perceived risk of harm, and binge drinking had the fewest students indicating risk of harm. Additionally, for all substances, there were more students who thought there was no risk than slight risk of harm from using substances.

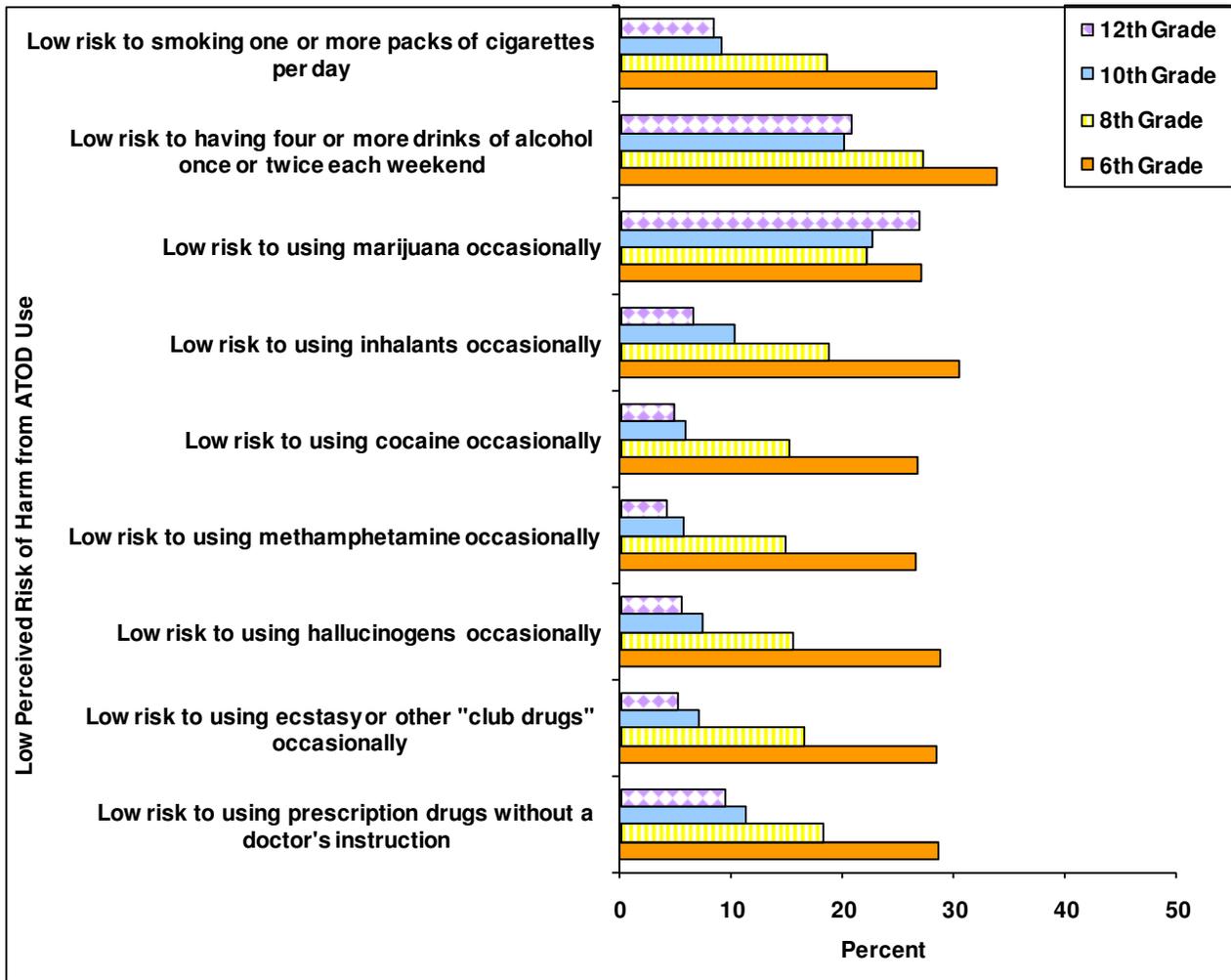


Figure 4a.38. Low Perceived Risk of Harm from ATOD Use by Grade, 2007 (Weighted Data)

Overall, the number of students who perceived low risk of harm from ATOD use decreased as grade level progressed from 6<sup>th</sup> to 12<sup>th</sup> grade. Twenty-eight and a half percent of 6<sup>th</sup> graders, 18.6% of 8<sup>th</sup> graders, 9.2% of 10<sup>th</sup> graders, and 8.4% of 12<sup>th</sup> graders indicated they thought there was low risk of harm from smoking one or more packs of cigarettes per day ( $\chi^2=1164.5$ ,  $df=3$ ,  $p<.001$ ). Almost 34% of 6<sup>th</sup> graders, 27.2% of 8<sup>th</sup> graders, 20.1% of 10<sup>th</sup> graders, and 20.8% of 12<sup>th</sup> graders indicated they thought there was low risk of harm from binge drinking once or twice each weekend ( $\chi^2=403.5$ ,  $df=3$ ,  $p<.001$ ). About 27% of 6<sup>th</sup> graders, 22.1% of 8<sup>th</sup> graders, 22.7% of 10<sup>th</sup> graders, and 26.8% of 12<sup>th</sup> graders indicated low perceived risk of harm from using marijuana occasionally ( $\chi^2=67.0$ ,  $df=3$ ,  $p<.001$ ). Thirty and a half percent of 6<sup>th</sup> graders,

18.8% of 8<sup>th</sup> graders, 10.4% of 10<sup>th</sup> graders, 6.6% of 12<sup>th</sup> graders indicated low perceived risk of harm from using inhalants occasionally ( $\chi^2=1363.6$ ,  $df=3$ ,  $p<.001$ ). Almost 27% of 6<sup>th</sup> graders, 15.2% of 8<sup>th</sup> graders, 5.9% of 10<sup>th</sup> graders, and 4.8% of 12<sup>th</sup> graders indicated they thought there was low risk of harm from using cocaine occasionally ( $\chi^2=1533.8$ ,  $df=3$ ,  $p<.001$ ). Similar to cocaine use, 26.7% of 6<sup>th</sup> graders, 14.8% of 8<sup>th</sup> graders, 5.8% of 10<sup>th</sup> graders, and 4.2% of 12<sup>th</sup> graders indicated low perceived risk of harm from using methamphetamine occasionally ( $\chi^2=1584.8$ ,  $df=3$ ,  $p<.001$ ). Low risk of harm from occasional use of hallucinogens (28.9% of 6<sup>th</sup> graders, 15.6% of 8<sup>th</sup> graders, 7.5% of 10<sup>th</sup> graders, and 5.5% of 12<sup>th</sup> graders;  $\chi^2=1486.8$ ,  $df=3$ ,  $p<.001$ ) and ecstasy or other club drugs (28.5% of 6<sup>th</sup> graders, 16.6% of 8<sup>th</sup> graders, 7.1% of 10<sup>th</sup> graders, and 5.1% of 12<sup>th</sup> graders;  $\chi^2=1516.0$ ,  $df=3$ ,  $p<.001$ ) was similar. Low perceived risk of harm from using prescription drugs without a doctor's instruction was also less for older students (28.6% of 6<sup>th</sup> graders, 18.2% of 8<sup>th</sup> graders, 11.4% of 10<sup>th</sup> graders, and 9.4% of 12<sup>th</sup> graders;  $\chi^2=893.3$ ,  $df=3$ ,  $p<.001$ ). An increase in perceived risk of harm from ATOD use from younger to older grades may be due to education or exposure to health risks and associated harm from use of substances.

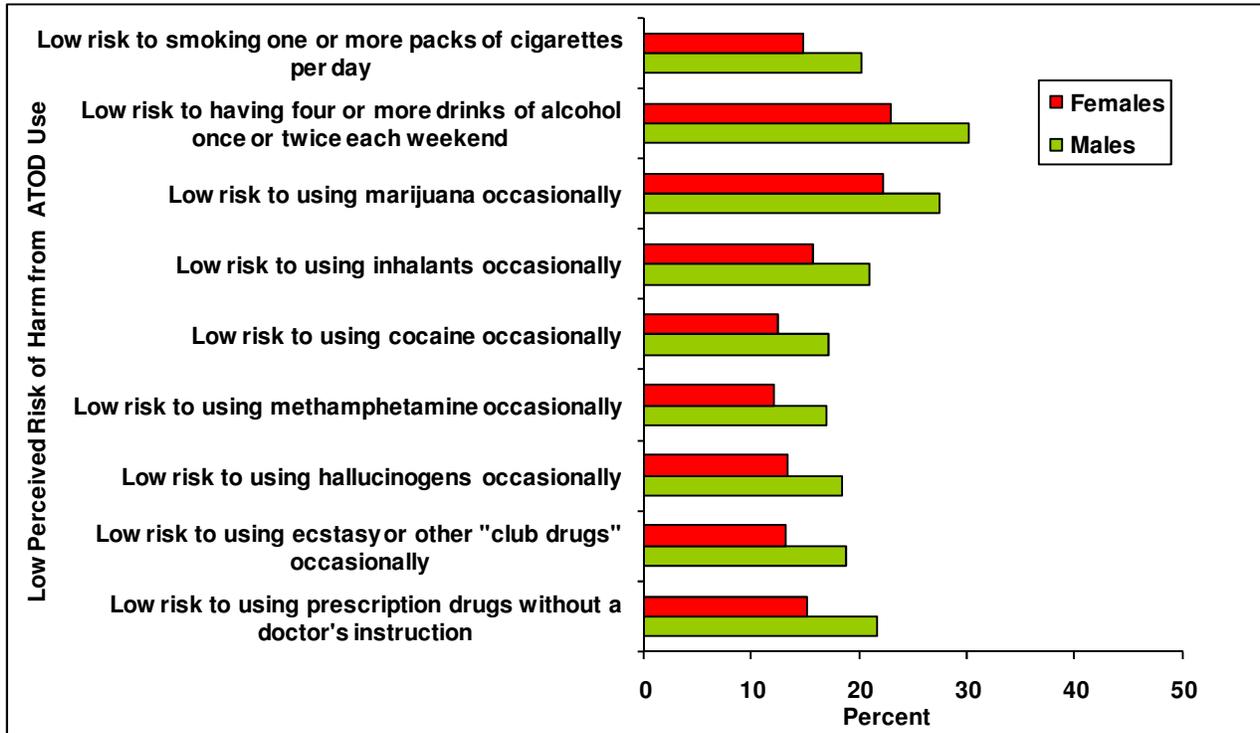


Figure 4a.39. Low Perceived Risk of Harm from ATOD Use by Gender, 2007 (Weighted Data)

Overall, more males than females perceived low risk of harm from ATOD use. About 20% of males and 14.8% of females said it was not risky to smoke one or more packs of cigarettes per day ( $\chi^2=116.4$ ,  $df=1$ ,  $p<.001$ ). About 30% of males and 23% of females indicated there was low risk of harm from binge drinking once or twice each weekend ( $\chi^2=146.5$ ,  $df=1$ ,  $p<.001$ ). Twenty-seven and a half percent of males and 22.2% of females had low perceived risk of harm from using marijuana occasionally ( $\chi^2=83.0$ ,  $df=1$ ,  $p<.001$ ). Twenty-one percent of males and 15.7% of females thought there was low risk of harm from using inhalants occasionally ( $\chi^2=99.9$ ,  $df=1$ ,  $p<.001$ ). Rates of low perceived risk of harm from occasional use of cocaine (17.2% of males vs. 12.4% of females;  $\chi^2=99.6$ ,  $df=1$ ,  $p<.001$ ) and methamphetamine (17% of males vs. 12% of females;  $\chi^2=109.5$ ,  $df=1$ ,  $p<.001$ ) were similar. Occasional use of hallucinogens (18.4% of males vs. 13.4% of females;  $\chi^2=109.5$ ,  $df=1$ ,  $p<.001$ ) were similar. Occasional use of hallucinogens (18.4% of males vs. 13.4% of females;  $\chi^2=98.7$ ,  $df=1$ ,  $p<.001$ ) and ecstasy or other club drugs (18.8% of males vs. 13.2% of females;  $\chi^2=123.8$ ,  $df=1$ ,  $p<.001$ ) were also similar. Low perceived risk of harm from prescription drug use

without doctor instruction (21.6% of males vs. 15.2% of females;  $\chi^2=141.6$ ,  $df=1$ ,  $p<.001$ ) was similar to that of inhalants.

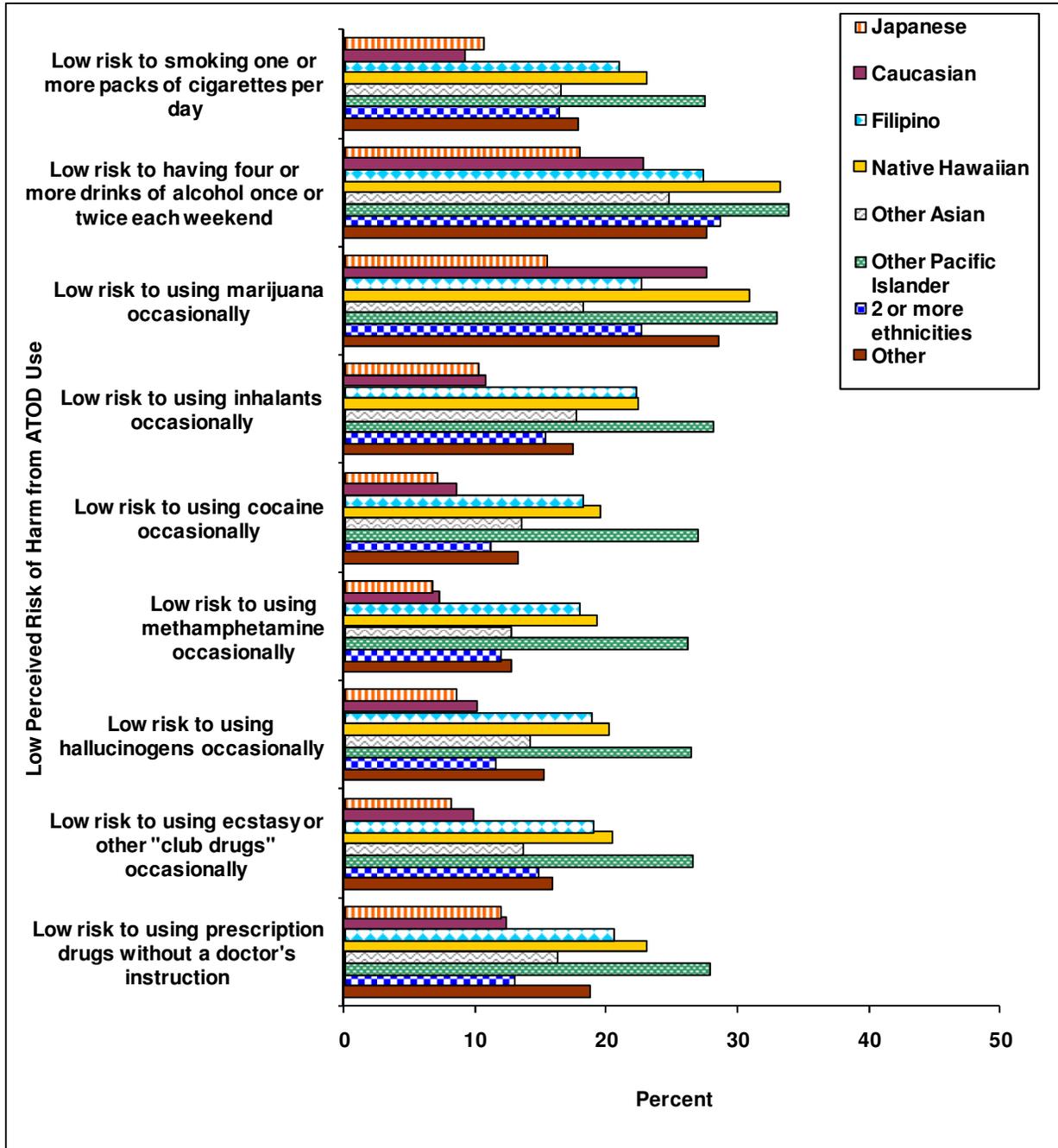


Figure 4a.40. Low Perceived Risk of Harm from ATOD Use by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for low perceived risk of harm from ATOD use. Overall, students of Other Pacific Islander and Native Hawaiian ethnicities had the highest rates of low

perceived risk of harm, while Japanese students had the lowest rates of low perceived risk of harm from ATOD use. About 10.5% of Japanese students, 9.2% of Caucasian students, 21 % of Filipino students, 23.1% of Native Hawaiian students, 16.5% of Other Asian students, 27.5% of Other Pacific Islander students, 16.4% of students of 2 or more ethnicities, and 17.8% of students of Other ethnicities said there was low risk of harm from smoking one or more packs of cigarettes per day ( $\chi^2=584.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 18% of Japanese students, 22.8% of Caucasian students, 27.3% of Filipino students, 33.2% of Native Hawaiian students, 24.8% of Other Asian students, 33.9% of Other Pacific Islander students, 28.6% of students of 2 or more ethnicities, and 27.7% of students of Other ethnicities indicated there was low risk of harm from binge drinking once or twice every weekend ( $\chi^2=305.6$ ,  $df=7$ ,  $p<.001$ ).

Fifteen and half percent of Japanese students, 27.7% of Caucasian students, 22.6% of Filipino students, 30.9% of Native Hawaiian students, 18.2% of Other Asian students, 33% of Other Pacific Islander students, 22.7% of students of 2 or more ethnicities, and 28.5% of students of Other ethnicities had low perceived risk of harm from using marijuana occasionally ( $\chi^2=391.6$ ,  $df=7$ ,  $p<.001$ ).

Perceived risk of harm from occasional use of inhalants (10.2% of Japanese students, 10.8% of Caucasian students, 22.3% of Filipino students, 22.4% of Native Hawaiian students, 17.7% of Other Asian students, 28.1% of Other Pacific Islander students, 15.3% of students of 2 or more ethnicities, and 17.4% of students of Other ethnicities;  $\chi^2=522.1$ ,  $df=7$ ,  $p<.001$ ) was similar to that of prescription drug use without doctor instruction (12% of Japanese students, 12.4% of Caucasian students, 20.6% of Filipino students, 23.1% of Native Hawaiian students, 16.2% of Other Asian students, 27.9% of Other Pacific Islander students, 13% of students of 2 or more ethnicities, and 18.8% of students of Other ethnicities;  $\chi^2=378.5$ ,  $df=7$ ,  $p<.001$ ).

Occasional use of cocaine (7.1% of Japanese, 7.3% of Caucasian, 18.2% of Filipino, 19.6% of Native Hawaiian, 13.5% of Other Asian, 26.9% of Other Pacific Islander, 11.2% of 2 or more ethnicities, and 13.3%

of Other ethnicity;  $X^2=694.2$ ,  $df=7$ ,  $p<.001$ ) and methamphetamine (6.7% of Japanese, 7.3% of Caucasian, 17.9% of Filipino, 19.3% of Native Hawaiian, 12.7% of Other Asian, 26.2% of Other Pacific Islander, 11.9% of 2 or more ethnicities, and 12.8% of Other ethnicity;  $X^2=673.2$ ,  $df=7$ ,  $p<.001$ ) had similar rates of low perceived risk of harm.

Rates of low perceived risk of harm from occasional use of hallucinogens (8.5% of Japanese, 10.2% of Caucasian, 18.8% of Filipino, 20.2% of Native Hawaiian, 14.1% of Other Asian, 26.4% of Other Pacific Islander, 11.5% of 2 or more ethnicities, and 15.2% of Other ethnicity;  $X^2=468.4$ ,  $df=7$ ,  $p<.001$ ) and ecstasy or other club drugs (8.2% of Japanese, 9.9% of Caucasian, 19% of Filipino, 20.4% of Native Hawaiian, 13.6% of Other Asian, 26.6% of Other Pacific Islander, 11.5% of 2 or more ethnicities, and 14.8% of Other ethnicity;  $X^2=513.0$ ,  $df=7$ ,  $p<.001$ ) were also similar.

Table 4a.10. Correlations Between Perceived Risk of ATOD Use and Substance Use Prevalence, 2007  
(Entries are correlations)

Risk Factor: Perceived Risk of ATOD Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Harming themselves if smoke one or more packs of cigarettes per day	.00	-.03	-.05	-.03	-.03	-.04
Harming themselves if have four or more drinks of alcohol once or twice each weekend	-.11	-.12	-.07	-.11	-.10	-.08
Harming themselves if use marijuana occasionally	-.17	-.17	-.14	-.25	-.21	-.12
Harming themselves if use inhalants occasionally	.03	.01	-.02	-.01	.01	.00
Harming themselves if use cocaine occasionally	.01	-.01	-.03	-.02	-.01	-.03
Harming themselves if use methamphetamine occasionally	.02	.00	-.02	-.01	.01	-.02
Harming themselves if use hallucinogens occasionally	.00	-.01	-.04	-.04	-.03	-.04
Harming themselves if use ecstasy or other "club" drugs	.01	-.01	-.04	-.03	-.02	-.03
Harming themselves if use prescription drugs without a doctor telling them to	-.02	-.04	-.06	-.06	-.05	-.05

Overall, perceived risks of ATOD use were not correlated with monthly substance use and failed to meet the criterion for a meaningful association ( $r=\pm.20$ ).

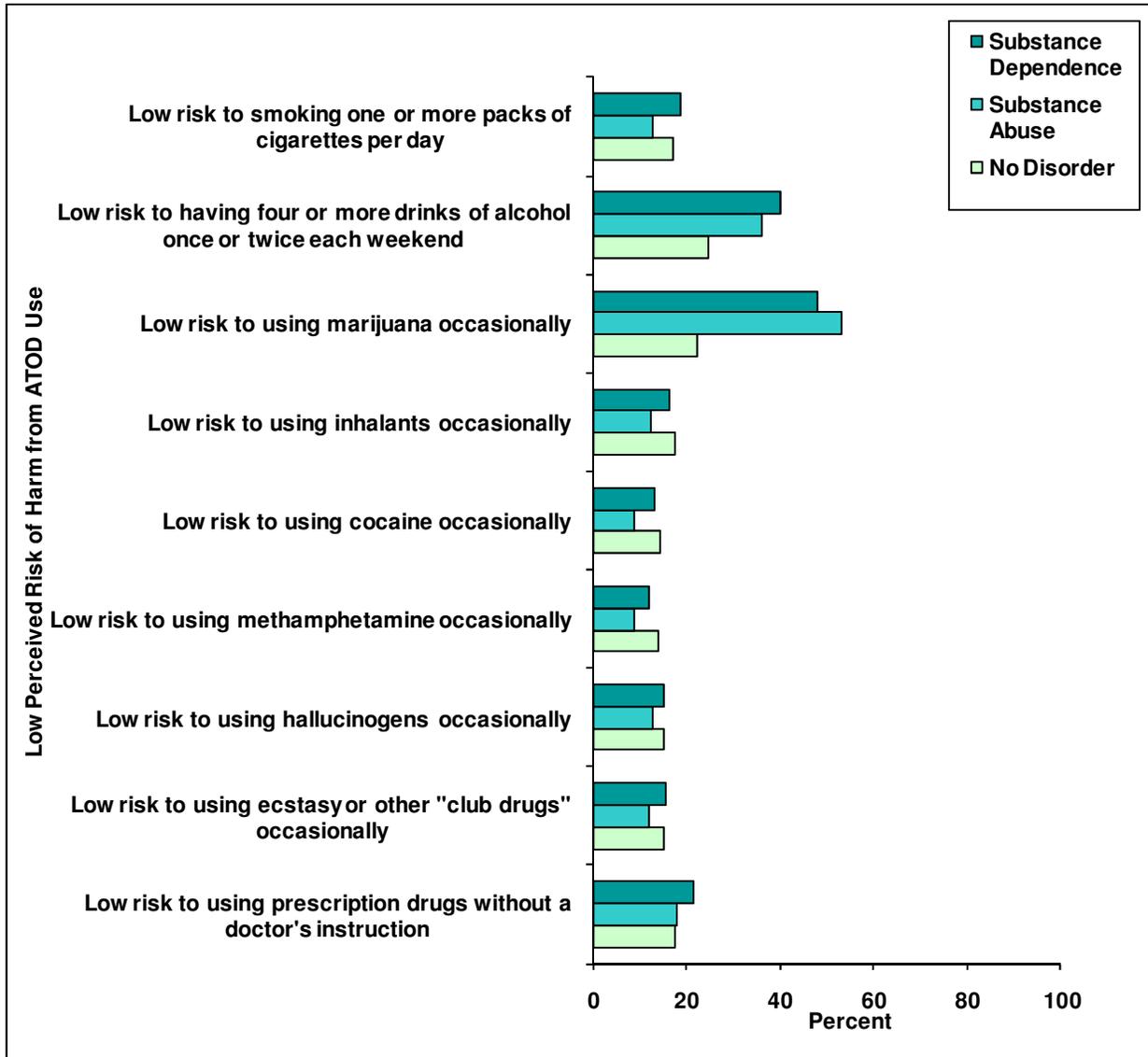


Figure 4a.41. Low Perceived Risk of Harm from ATOD Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Less than one in five students with substance dependence and abuse and those without substance abuse or dependence had low perceived risk of ATOD use, with low perceived risk of cigarette use (18.6% dependence vs. 12.9% abuse vs. 17.2% none,  $\chi^2=12.0$ ,  $df=2$ ,  $p=.002$ ); low perceived risk of using inhalants occasionally (16.3% dependence vs. 12.3% abuse vs. 17.6% none,  $\chi^2=15.8$ ,  $df=2$ ,  $p<.001$ ); low perceived risk of using cocaine occasionally (13.2% dependence vs. 8.9% abuse vs. 14.3% none,  $\chi^2=19.4$ ,  $df=2$ ,  $p<.001$ ); low perceived risk of using methamphetamine occasionally (11.8% dependence vs. 8.9% abuse vs. 14%

none,  $\chi^2=20.1$ ,  $df=2$ ,  $p<.001$ ); low perceived risk of using ecstasy occasionally (15.4% dependence vs. 11.9% abuse vs. 15.2% none,  $\chi^2=6.4$ ,  $df=2$ ,  $p=.04$ ); and low perceived risk of using prescription drugs without a doctor's instruction (21.6% dependence vs. 18.1% abuse vs. 17.4% none,  $\chi^2=9.8$ ,  $df=2$ ,  $p=.007$ ). Significantly more students with substance abuse or dependence than students without reported low perceived risk of binge drinking (40.1% dependence, 36.1% abuse vs. 24.8% none,  $\chi^2=148.2$ ,  $df=2$ ,  $p<.001$ ) and low perceived risk of using marijuana occasionally (47.9% dependence, 53.1% abuse vs. 22.3% none,  $\chi^2=690.5$ ,  $df=2$ ,  $p<.001$ ). There was no significant relationship between substance abuse and dependence and low perceived risk of hallucinogen use. Low perceived risk of marijuana use was the variable reported the most frequently for students who met criteria for abuse or dependence.

## CONCLUSION

---

Findings for the individual risk and protective factors were similar to the 2003 Hawai'i Student ATOD survey. The clear relationship between early initiation of problem behaviors (especially binge drinking) and substance use, abuse, and dependence indicates the importance of prevention and intervention programs at an early age. There were more 8<sup>th</sup> graders than 6<sup>th</sup> graders reporting early initiation of binge drinking, suspensions, arrests, and violent attacks, indicating that this could be an important age for targeted prevention and intervention, particularly with high-risk students.

Students' values toward antisocial behavior appear to become more favorable as students get older, leaving older students at higher risk for substance use than younger students. This was also true for risk taking and sensation seeking behavior, rebelliousness, and values about substance use, in that older students reported higher rates of risk factors than younger students. However, it is important to note that there were generally far more students who did *not* report individual risk factors such as values and behaviors associated with substance use disorders. This should inform how developmentally appropriate primary prevention programs are designed, implemented, and evaluated for impact or further reduction in youth substance use. To that end, a possible explanation of the finding that 6<sup>th</sup> graders were less likely to

perceive risk of harm from substance use compared to 12<sup>th</sup> graders may potentially be the cumulative result of drug awareness education at the older grades. It then becomes very important to implement prevention programs at an early age before students begin to experiment with substances.

It also would be beneficial for intervention programs to account for gender differences in substance use as generally more males reported early initiation of problem behaviors than females, with the exception of binge drinking. Overall, males reported having more risk factors than females. Therefore, it may be necessary to tailor prevention and treatment programs taking into account gender specific risk factors.

Risk and protective factors for the individual domain also varied by ethnicity, with similarities differences in rates of responding seen for most factors. While no causation is implied from the ethnic differences seen in risk factors, these differences may need to be considered for informing how intervention and treatment may be more effective if culturally driven. Overall, early prevention and intervention positive youth development programs that comprehensively address antisocial behavior, risk taking and sensation seeking behaviors, delinquency, and attitudes toward substance use should contribute to reducing adolescent substance use.

## PEER DOMAIN

### INTRODUCTION

---

This section of the 2007-2008 Hawai'i Student ATOD Study Report examines risk and protective factors associated with adolescent substance use at the peer level. The peer risk and protective factor domain has been found to be strongly associated with adolescent substance use. Cleveland and colleagues (2008) conducted an overview of risk and protective factors and identified the peer and individual domains as the strongest predictors of adolescent substance use.

One peer risk factor found to be associated with adolescent substance use is the substance use of peers. It has been found that associating with friends who use substances was consistently predictive or associated with an adolescent's own substance use (Prinstein, Boergers, & Spirito, 2001). Recent work has also shown that peer substance use can act as a mediating, or contributing factor in "co-occurring conduct problems and depressed mood in early adolescence and substance use in late adolescence" (Mason, Hitchings, & Spoth, 2008). Simons-Morton (2007) found a strong relationship between having friends who use substances and an individual's substance use, with the exception of smoking. Furthermore, having friends and peers who use substances is a strong predictor of adolescent substance use and concludes that the best intervention strategy is to positively shape the social norms about substance use. This is seen in the weaker relationship between friend's substance use and individual cigarette use, suggesting that the social norms around cigarettes are changing to make smoking unappealing. This entails shifting from an approach focused on peer-pressure that helps individual refuse offers of substances from peers to an approach that makes substance use socially unappealing. Changing the social norms to make substance use unappealing could be an area of potentially promising future focus as the findings of the study indicate it could be a productive means of reducing the levels of adolescent substance use (Simon-Morton, 2007).

Conversely, other studies reported a substantial amount of similarity within peer groups with regards to cigarette smoking indicating that peers could have an influence on adolescent smoking (Ennett, Bauman, & Koch, 1994). With regards to peer substance use, increased alcohol use has been found to be associated with an increase in adolescent reports of peer substance use and was reported to be associated with an increase in individual alcohol use and related problems (Hill, Emery, Harden, Mendle, & Turkheimer, 2007). It has also been reported that adolescent's alcohol use is correlated with peer alcohol use as well as the alcohol use of parents and siblings (Windle, 2000). Windle (2000) also found that substance use prevention programs that focus on peer resistance skills and on an adolescent's ability to say no to offers of substances have generally limited success. Windle (2000) notes, however, that his study was limited in that it focused primarily on Caucasian, middle-class adolescents from intact families and further research outside of this demographic is needed. Additionally, increases in binge drinking (4 or more drinks in a single occasion) and marijuana use have been found to be related to the substance use of friends (Prinstein et al., 2001). Van den Bree and Pickworth (2005) reported that peer substance use was one of the strongest predictors of adolescent marijuana use and concluded that looking at both the environment of an adolescent's school as well as delinquency behaviors were important in identifying adolescents who are at a high-risk for substance use, especially marijuana use (Van den Bree & Pickworth, 2005).

Another peer risk factor found to be related to adolescent substance use is peer antisocial or deviant behavior. For example, adolescent binge drinking and marijuana use has been linked to friends' substance use and has also been found to be associated with peer deviant behavior (Prinstein et al., 2001). Deviance of peers has also been shown to interact with other factors to affect adolescent substance use. Ary, Duncan, Duncan, and Hops (1999) found that families with a lot of conflict (fighting/arguing among family members) were more prone to low amounts of involvement between parent and child. One year later, the study found that these circumstances were associated with low parental monitoring and adolescent involvement with deviant peers which were found to be indications of problem behaviors

another two years later, including substance use (Ary, Duncan, Duncan, & Hops, 1999). The absence of deviant behavior among peers has been found to be a protective factor against adolescent substance use. Prinstein et al. (2001) found that the more friends and peers with whom an adolescent associates who do not use substances or engage in deviant behavior, the less likely that adolescent is to smoke cigarettes. An additional risk factor under the peer domain is peer values about substance use. Taylor, Lloyd, and Warheit (2006) found evidence suggesting that peer approval of drug use was associated with drug dependence (measured nine years later) and preceded drug use initiation for most of the participants in the study (Taylor, Lloyd, & Warheit, 2006). Simon-Morton (2007) reported that alcohol and marijuana use predicted adolescent use of the same substances but did not predict cigarette use.

This study will look at two peer risk factors (peer substance use and peer antisocial or deviant behavior) and one protective factor (peer disapproval of substance use). Table 4b.1 lists the specific items that the ATOD survey used to measure peer risk and protective factors.

Table 4b.1. Peer Risk and Protective Factors and the Corresponding 2007-2008 Hawai'i Student ATOD Survey Questions and Responses (Adapted from Pearson, 2003).

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Peer Substance Use</b>	Defined as having several close friends who engage in ATOD use. Peer drug use has consistently been found to be among the strongest predictors of substance use among youths – even when young people come from well-managed families and do not experience other risk factors.	In past year or 12 months, how many of your best friends have smoked cigarettes?	None = 0 1 friend = 1 2 friends = 2 3 friends = 3 4+ friends = 4
		In the past year or 12 months, how many of your best friends have tried beer, wine or hard liquor when their parents didn't know about it?	
		In the past year or 12 months, how many of your best friends have used marijuana (hash, pot, weed, pakalolo)?	
		In the past year or 12 months, how many of your best friends have used LSD, cocaine, methamphetamine, or other illegal drugs?	
<b>Peer Antisocial or Deviant Behavior</b>	Defined as having several close friends who engage in problem behaviors. Young people who associate with peers who engage in problem behaviors are at higher risk for engaging in antisocial behavior themselves.	In the past year or 12 months, how many of your best friends have been suspended from school?	None = 0 1 friend = 1 2 friends = 2 3 friends = 3 4+ friends = 4
		In the past year or 12 months, how many of your best friends have sold illegal drugs?	
		In the past year or 12 months, how many of your best friends have stolen or tried to steal a motor vehicle?	
		In the past year or 12 months, how many of your best friends have been arrested?	
		In the past year or 12 months, how many of your best friends have dropped out of school?	

Protective Factors			
Factor	Description	Question	Response Choices and Coding for Analyses
<b>Peer Values about Substance Use</b>	Defined as student perceptions that his or her close friends would disapprove of him or her using substances. Peer pressure is a strong factor influencing adolescent behavior, and peer pressure not to use alcohol, tobacco, and other drugs is a very powerful deterrent.	How do you think your close friends feel (or would feel) about your smoking one or more packs of cigarettes per day?	Would Think It Was Cool = 1 Would Not Care = 2 Would Disapprove = 3 Would Strongly Disapprove = 4
		How do you think your close friends feel (or would feel) about your having four or more drinks of alcohol once or twice each weekend?	
		How do you think your close friends feel (or would feel) about your smoking marijuana (hash, pakalolo, pot, weed) occasionally?	
		How do you think your close friends feel (or would feel) about your using cocaine (crack, coke, blow, freebase) occasionally?	
		How do you think your close friends feel (or would feel) about your using methamphetamine (crystal meth, speed, ice, batu, crank) once or twice?	
		How do you think your close friends feel (or would feel) about your trying inhalants (glue, paint, sprays) to get high?	

## PEER SUBSTANCE USE

Peer substance use was based on a 4-item, 5-point scale that indexed the number of friends a student has that engaged in substance use. Students were asked in the past 12 months how many of their

best friends: smoked cigarettes; tried beer, wine, or hard liquor when their parents didn't know about it; used marijuana; and used LSD, cocaine, methamphetamine, or other illegal drugs. Response choices were: (1) *None*; (2) *1 friend*; (3) *2 friends*; (4) *3 friends*; (5) *4+ friends*. Peer substance use was defined as having any friends who engaged in substance use.

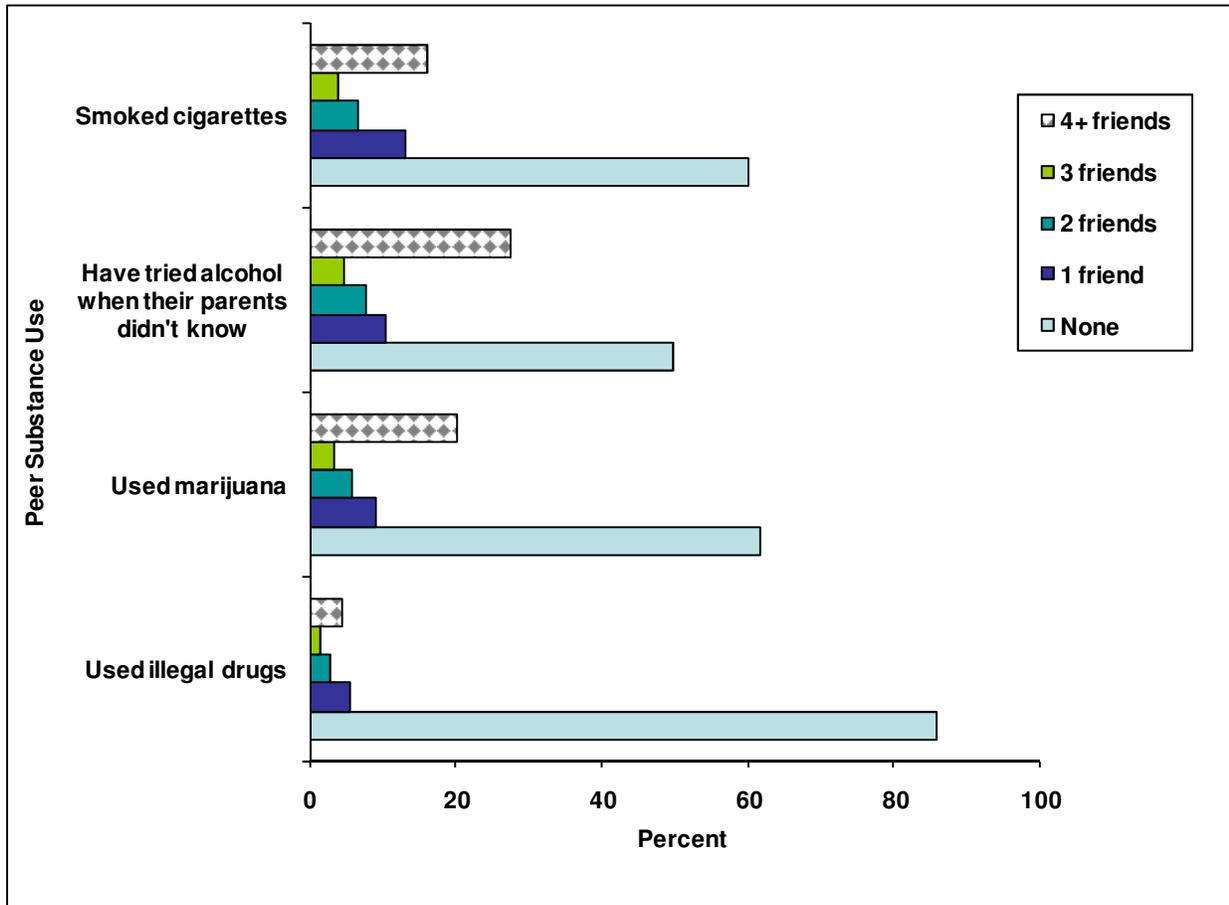


Figure 4b.1. Peer Substance Use, 2007 (Weighted Data)

The majority of students did not have any friends who smoked cigarettes, tried alcohol when their parents didn't know, used marijuana, or used other illegal drugs. The group with the second highest number of responses was those students who had four or more friends that used substances.

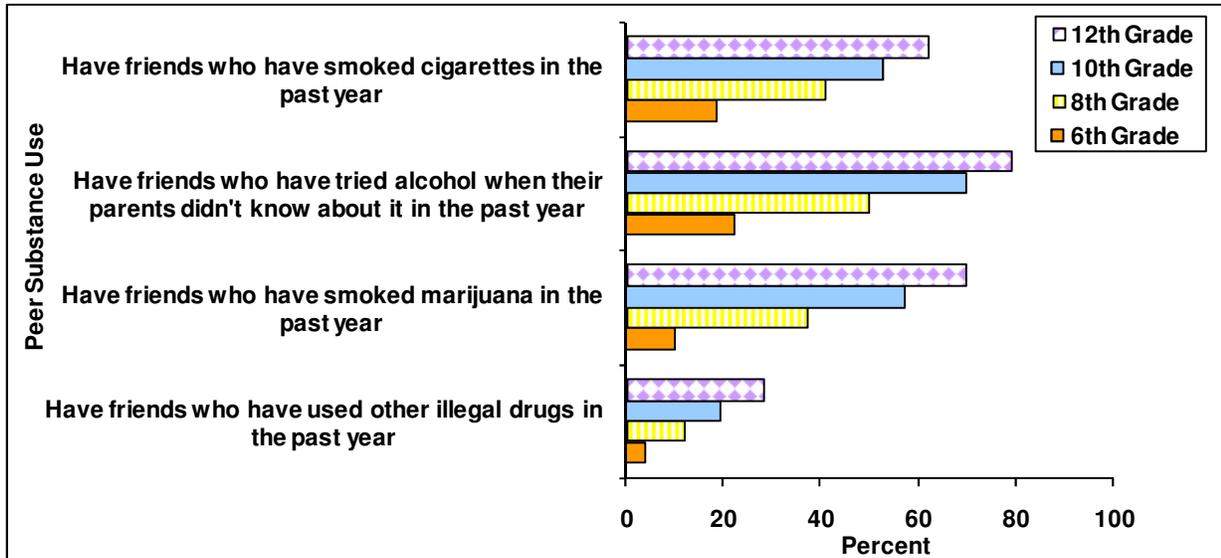


Figure 4b.2. Peer Substance Use by Grade, 2007 (Weighted Data)

Overall, peer substance use increases from 6<sup>th</sup> to 12<sup>th</sup> grade. Almost 19% of 6<sup>th</sup> graders, 40.8% of 8<sup>th</sup> graders, 52.9% of 10<sup>th</sup> graders, and 62.2% of 12<sup>th</sup> graders reported having smoked cigarettes in the past year ( $\chi^2=3175.4$ ,  $df=3$ ,  $p<.001$ ). Twenty-two and a half percent of 6<sup>th</sup> graders, 49.7% of 8<sup>th</sup> graders, 70.1% of 10<sup>th</sup> graders, and 79.2% of 12<sup>th</sup> graders reported having tried alcohol in the past year ( $\chi^2=5450.3$ ,  $df=3$ ,  $p<.001$ ). Almost 10% of 6<sup>th</sup> graders, 37.1% of 8<sup>th</sup> graders, 57.3% of 10<sup>th</sup> graders, and 69.8% of 12<sup>th</sup> graders reported having smoked marijuana in the past year ( $\chi^2=6162.7$ ,  $df=3$ ,  $p<.001$ ). About 4% of 6<sup>th</sup> graders, 12.2% of 8<sup>th</sup> graders, 19.5% of 10<sup>th</sup> graders, and 28.1% of 12<sup>th</sup> graders reported having tried LSD, cocaine, methamphetamine, or other illegal drugs in the past year ( $\chi^2=1737.2$ ,  $df=3$ ,  $p<.001$ ).

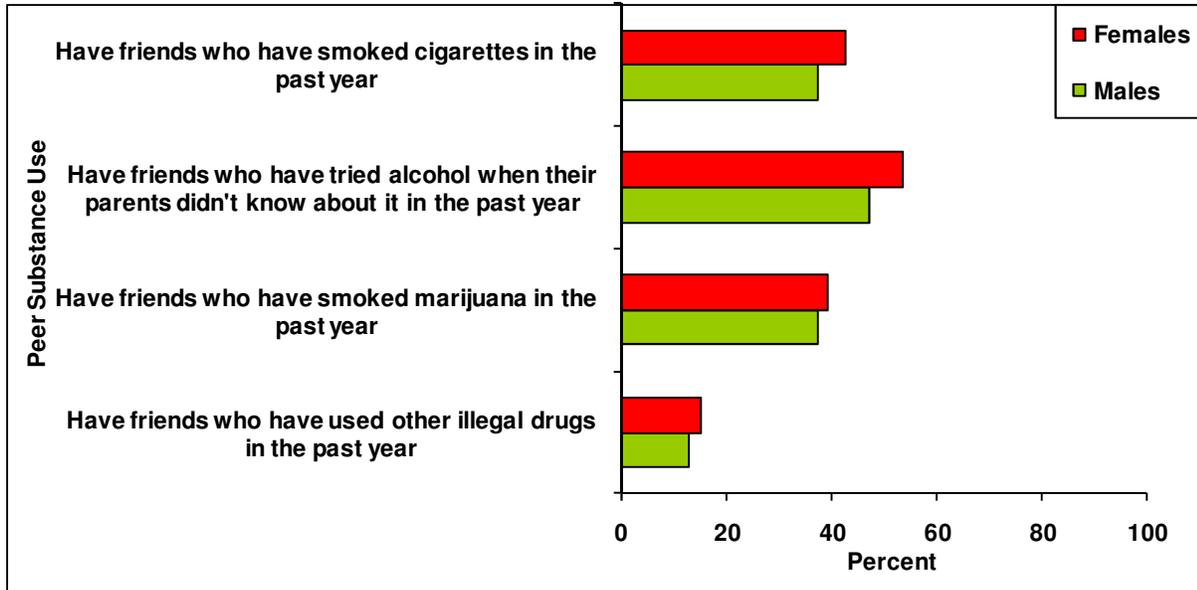


Figure 4b.3. Peer Substance Use by Gender, 2007 (Weighted Data)

Significantly more females than males had friends who engaged in substance use within the past year for cigarettes (42.6% vs. 37.4%,  $X^2=70.7$ ,  $df=1$ ,  $p<.001$ ); alcohol (53.6% vs. 47.1%,  $X^2=108.4$ ,  $df=1$ ,  $p<.001$ ); marijuana (39.4% vs. 37.5%,  $X^2=9.5$ ,  $df=1$ ,  $p=.002$ ); and LSD, cocaine, methamphetamine, or other illegal drugs (15.1% vs. 12.8%,  $X^2=26.6$ ,  $df=1$ ,  $p<.001$ ).

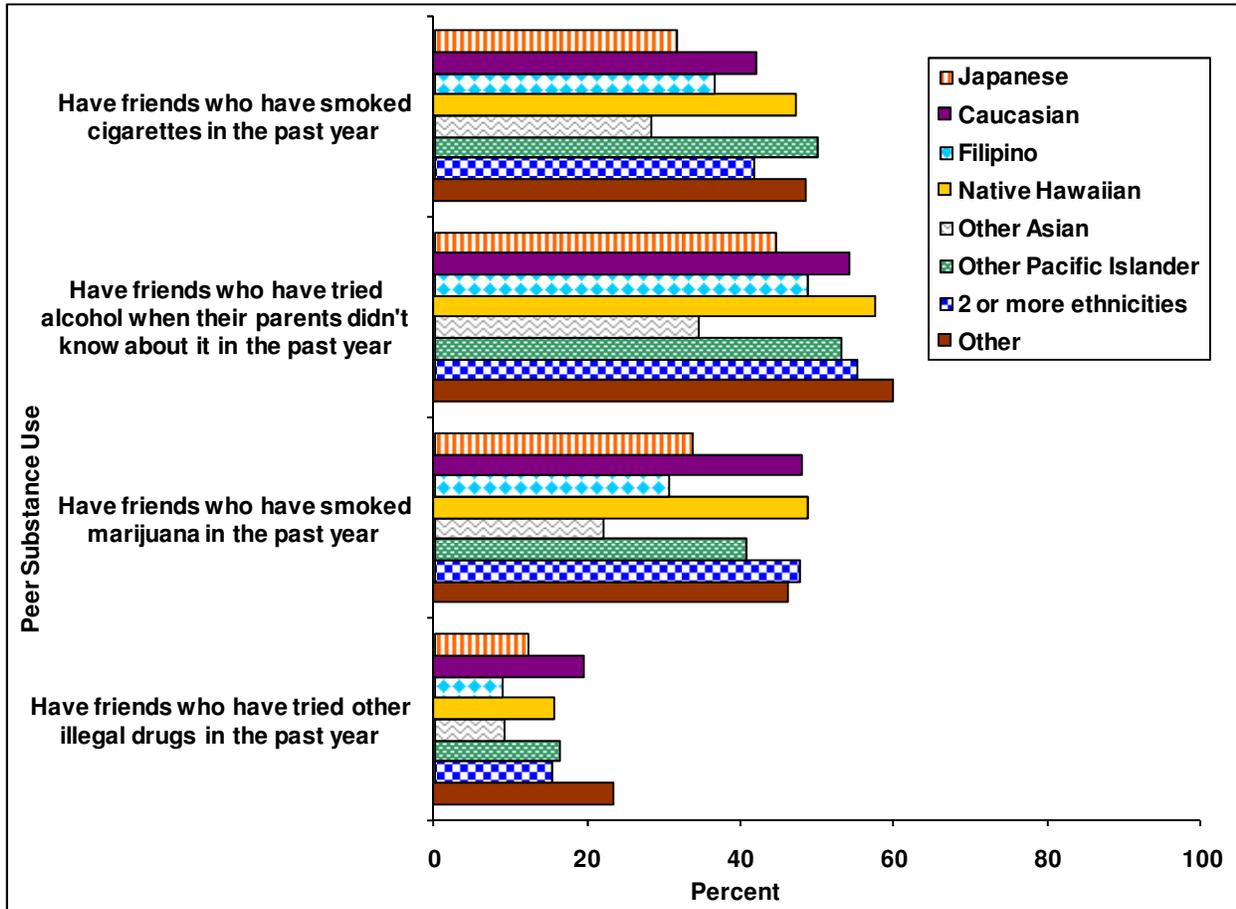


Figure 4b.4. Peer Substance Use by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for peer substance use. Overall, students of Native Hawaiian, Caucasian, Other Pacific Islander, Other, and 2 or more ethnicities had the highest rates of peer substance use while students of Other Asian ethnicity had the lowest rates. About 31.5% of Japanese students, 42.1% of Caucasian students, 36.7% of Filipino students, 47.3% of Native Hawaiian students, 28.2% of Other Asian students, 50.1% of Other Pacific Islander students, 41.8% of students of 2 or more ethnicities, and 48.4% of students of Other ethnicities reported having friends who smoked cigarettes in the past year ( $\chi^2=532.4$ ,  $df=7$ ,  $p<.001$ ).

About 44.5% of Japanese students, 54.1% of Caucasian students, 48.8% of Filipino students, 57.7% of Native Hawaiian students, 34.5% of Other Asian students, 53.2% of Other Pacific Islander students,

55.1% of students of 2 or more ethnicities, and 59.9% of students of Other ethnicities reported having friends who tried alcohol in the past year without their parents knowing ( $\chi^2=473.3$ ,  $df=7$ ,  $p<.001$ ).

Almost 34% of Japanese students, 48% of Caucasian students, 30.7% of Filipino students, 48.9% of Native Hawaiian students, 22.1% of Other Asian students, 40.6% of Other Pacific Islander students, 47.8% of students of 2 or more ethnicities, and 46.2% of students of Other ethnicities reported having friends that have smoked marijuana in the past year ( $\chi^2=907.0$ ,  $df=7$ ,  $p<.001$ ).

Almost 12.5% of Japanese students, 19.6% of Caucasian students, 9% of Filipino students, 15.7% of Native Hawaiian students, 9.3% Other Asian students, 16.3% of Other Pacific Islander students, 15.4% of students of 2 or more ethnicities, and 23.5% of students of Other ethnicity reported having friends that have tried LSD, cocaine, methamphetamine, or other illegal drugs in the past year ( $\chi^2=453.1$ ,  $df=3$ ,  $p<.001$ ).

Table 4b.2. Correlations Between Peer Substance Use and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Peer Substance Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How many friends smoked cigarettes	.39	.36	.34	.32	.34	.22
How many friends have tried beer, wine, or hard liquor when parents didn't know	.40	.34	.24	.30	.32	.18
How many best friends have used marijuana	.43	.39	.29	.41	.39	.23
How many best friends have used LSD, cocaine, methamphetamine, or other illegal drugs	.37	.37	.33	.39	.42	.33

The following general categories indicate a quick way of interpreting a correlation value: 0.0 to  $\pm 0.2$  Negligible;  $\pm 0.2$  to 0.4 Weak;  $\pm 0.4$  to 0.7 Moderate; and  $\pm 0.7$  and above Strong. Overall, peer substance use was positively correlated with monthly substance use and being drunk or high at school. Friends having alcohol when parents didn't know was moderately correlated ( $r=.40$ ) with monthly alcohol use. Moderate correlations were also found for best friends use of marijuana and monthly alcohol ( $r=.43$ ) and marijuana use ( $r=.41$ ). In addition, best friends use of LSD, cocaine, methamphetamine, or other illegal drugs was moderately correlated ( $r=.42$ ) with being drunk or high at school.

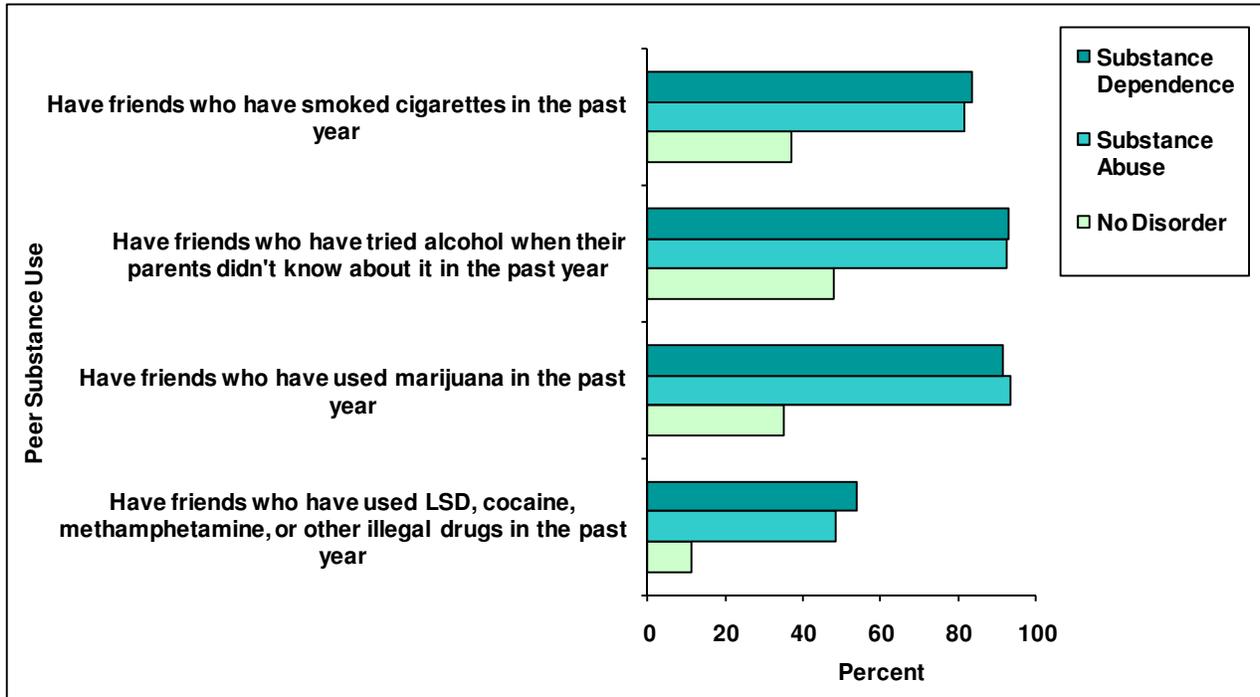


Figure 4b.5. Peer Substance Use by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to have friends who engaged in substance use. Students with substance abuse and dependence had similar proportions of peer substance use but significantly more than students without substance abuse or dependence for peer use of cigarettes, (83.8% dependence, 81.6% abuse vs. 37.1% none,  $\chi^2=1453.0$ ,  $df=2$ ,  $p<.001$ ); peer use of alcohol without parental knowledge (92.9% dependence, 92.5% abuse vs. 48.1% none,  $\chi^2=1354.7$ ,  $df=2$ ,  $p<.001$ ); peer use of marijuana (91.4% dependence, 93.7% abuse vs. 35% none,  $\chi^2=2334.0$ ,  $df=2$ ,  $p<.001$ ); and peer use of other illegal drugs (53.8% dependence, 48.3% abuse vs. 11.2% none,  $\chi^2=2213.4$ ,  $df=2$ ,  $p<.001$ ). Peer use of other illegal drugs was reported the least regardless of substance abuse or dependence diagnosis.

#### PEER ANTISOCIAL OR DEVIANT BEHAVIOR

Peer antisocial or deviant behavior was based on a 5-item, 5-point scale assessing the number of friends a student has that engaged in antisocial or deviant behaviors. Students were asked, in the past 12

months, how many of their best friends have: been suspended from school; sold illegal drugs; stolen or tried to steal a motor vehicle; been arrested; and dropped out of school. Response choices were: (1) *None*; (2) *1 friend*; (3) *2 friends*; (4) *3 friends*; (5) *4+ friends*. Peer antisocial or deviant behavior was defined as having any friends who engaged in these behaviors.

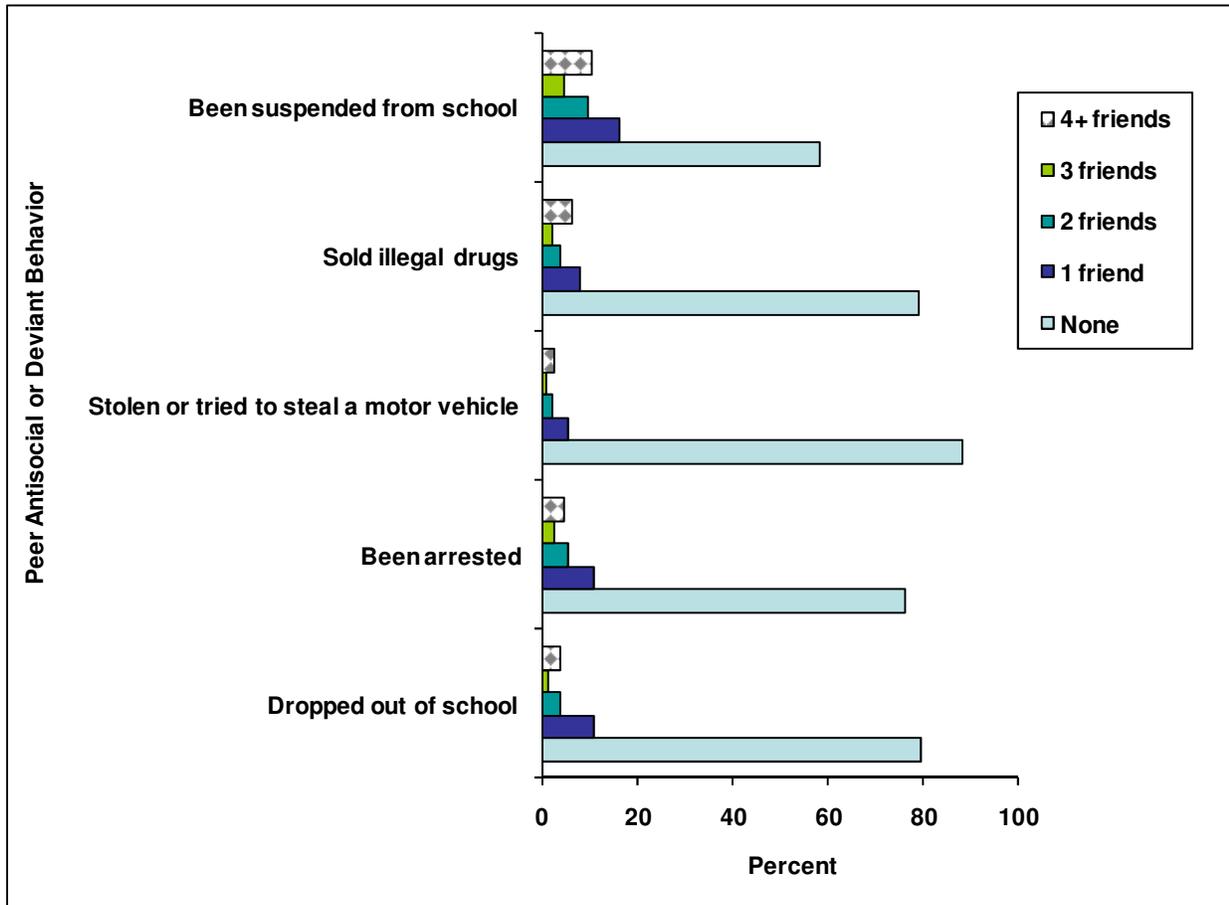


Figure 4b.6. Peer Antisocial or Deviant Behavior, 2007 (Weighted Data)

Similar to the pattern found for peer substance use, the majority of students did not have any friends that engaged in antisocial or deviant behavior. Additionally, peer deviant behavior was highest for suspension from school, with 16.5% had 1 friend suspended from school, 9.8% had 2 friends suspended from school, 4.6% had 3 friends suspended from school, and 10.8% had 4 or more friends who have been suspended from school.

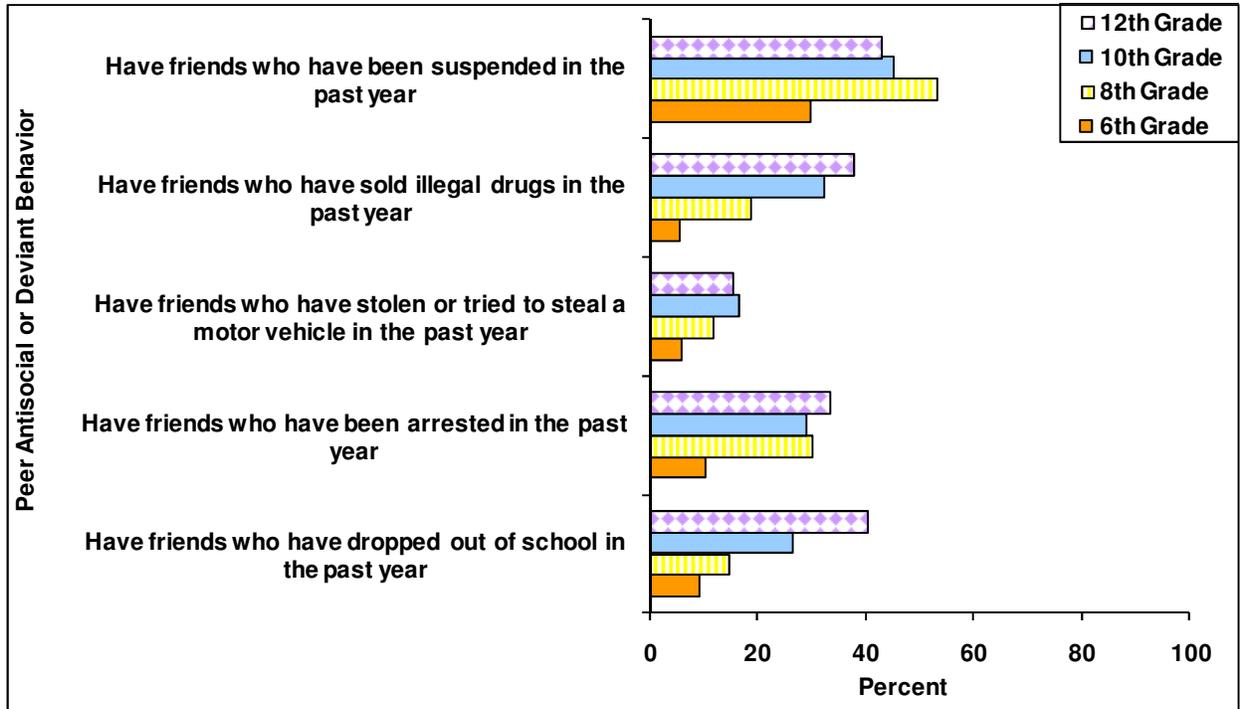


Figure 4b.7. Peer Antisocial or Deviant Behavior by Grade, 2007 (Weighted Data)

Overall, rates of peer antisocial or deviant behavior were lowest for 6<sup>th</sup> graders, and higher as grade level increased from 6<sup>th</sup> to 12<sup>th</sup> grades. Thirty percent of 6<sup>th</sup> graders, 53.3% of 8<sup>th</sup> graders, 45.2% of 10<sup>th</sup> graders, and 43% of 12<sup>th</sup> graders reported having close friends who have been suspended in the past year ( $\chi^2=941.0$ ,  $df=3$ ,  $p<.001$ ). Five and a half percent of 6<sup>th</sup> graders, 18.8% of 8<sup>th</sup> graders, 32.4% of 10<sup>th</sup> graders, and 37.9% of 12<sup>th</sup> graders reported having close friends who sold illegal drugs in the past year ( $\chi^2=2704.3$ ,  $df=3$ ,  $p<.001$ ). Almost 6% of 6<sup>th</sup> graders, 12% of 8<sup>th</sup> graders, 16.6% of 10<sup>th</sup> graders, and 15.5% of 12<sup>th</sup> graders reported having close friends who stole or tried to steal a motor vehicle in the past year ( $\chi^2=508.1$ ,  $df=3$ ,  $p<.001$ ). About 10% of 6<sup>th</sup> graders, 30.2% of 8<sup>th</sup> graders, 29.1% of 10<sup>th</sup> graders, and 33.5% of 12<sup>th</sup> graders reported having close friends who have been arrested in the past year ( $\chi^2=1449.2$ ,  $df=3$ ,  $p<.001$ ). Approximately 9% of 6<sup>th</sup> graders, 14.9% of 8<sup>th</sup> graders, 26.4% of 10<sup>th</sup> graders, and 40.5% of 12<sup>th</sup> graders reported having close friends who have been arrested in the past year ( $\chi^2=2258.1$ ,  $df=3$ ,  $p<.001$ ).

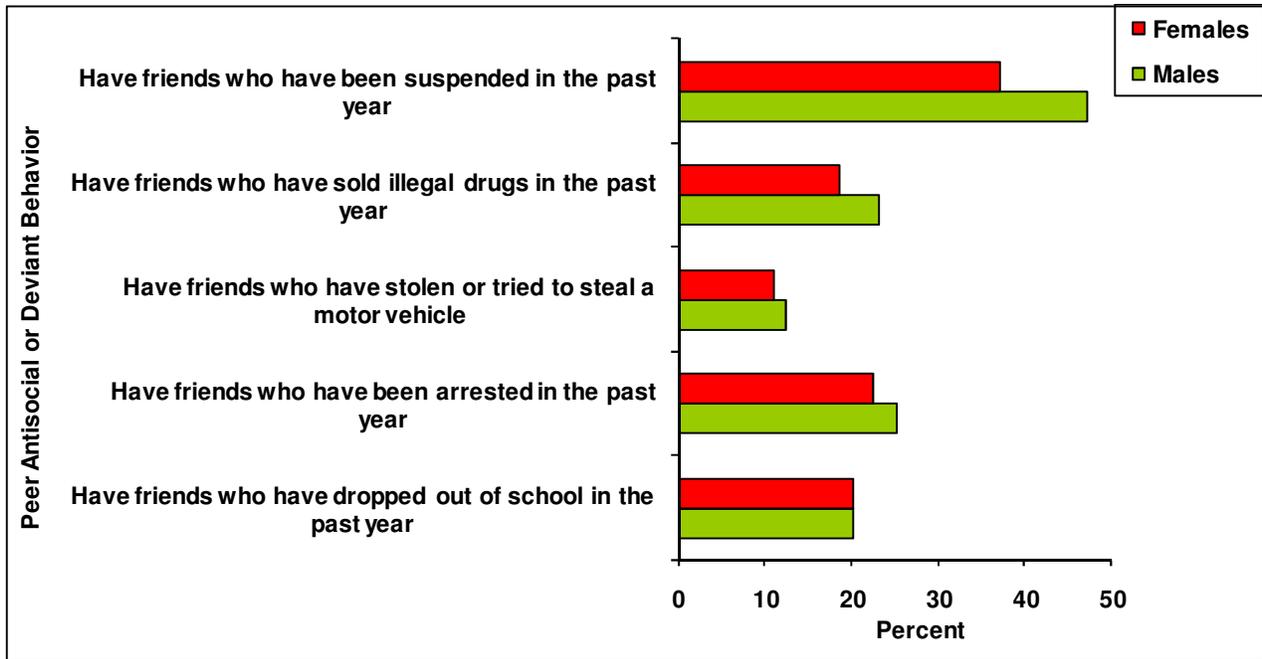


Figure 4b.8. Peer Antisocial or Deviant Behavior Use by Gender, 2007 (Weighted Data)

Overall, more males than females had close friends who engaged in antisocial or deviant behavior in the past year, including being suspended (47.3% vs. 37.2%,  $\chi^2=269.5$ ,  $df=1$ ,  $p<.001$ ); selling illegal drugs (23.2% vs. 18.7%,  $\chi^2=77.9$ ,  $df=1$ ,  $p<.001$ ); stealing or trying to steal a motor vehicle (12.5% vs. 11%,  $\chi^2=14.8$ ,  $df=1$ ,  $p<.001$ ); and being arrested (25.2% vs. 22.5%,  $\chi^2=24.7$ ,  $df=1$ ,  $p<.001$ ). There were no gender differences between males and females who had close friends who dropped out of school in the past year (20.3% vs. 20.2%,  $\chi^2=0.40$ ,  $df=1$ ,  $p=.842$ ).

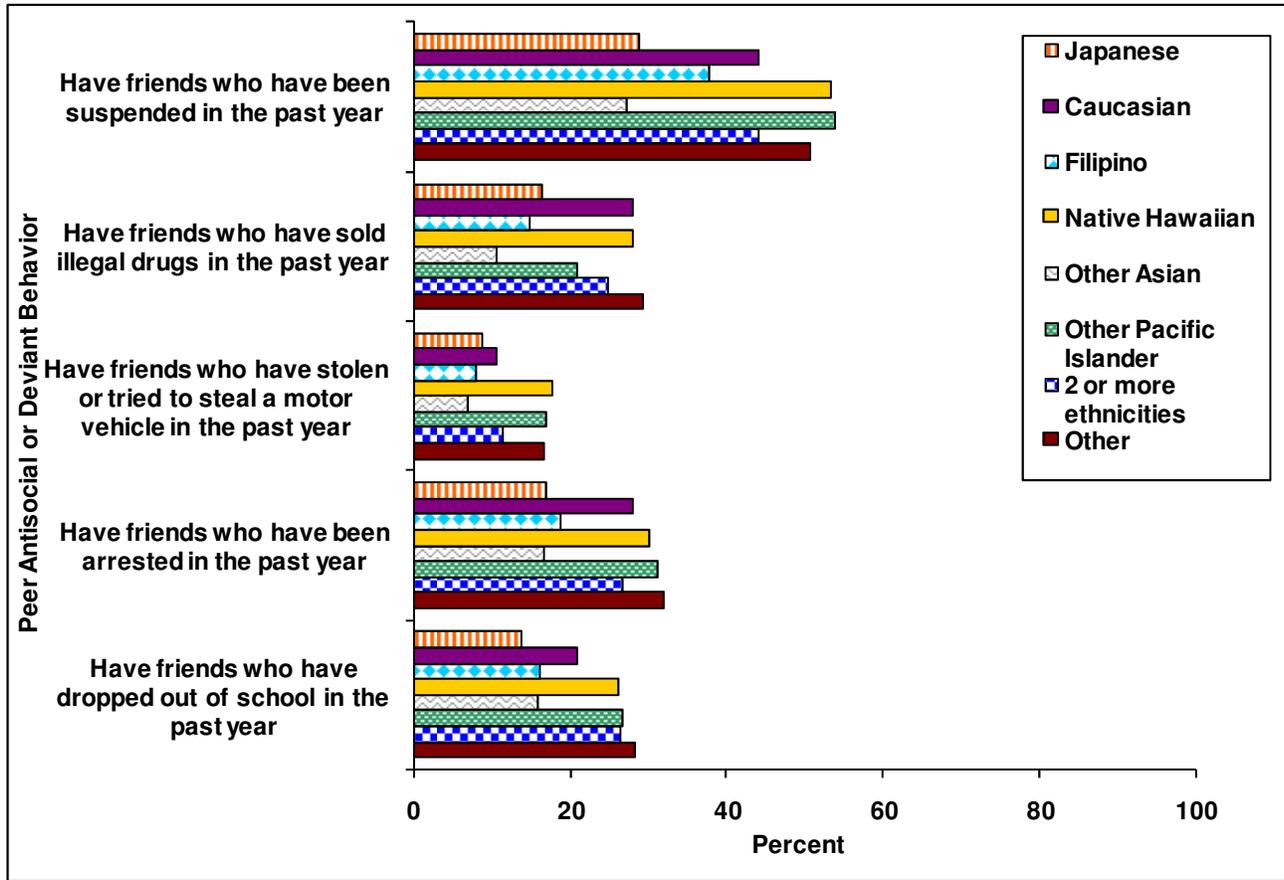


Figure 4b.9. Peer Antisocial or Deviant Behavior by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities were found for peer antisocial behavior. Overall, students of Native Hawaiian, Caucasian, Other Pacific Islander, Other, and 2 or more ethnicities had the highest rates of peer antisocial behavior while students of Other Asian ethnicity had the lowest rates. Almost 29% of Japanese students, 44.1% of Caucasian students, 37.8% of Filipino students, 53.3% of Native Hawaiian students, 27.2% of Other Asian students, 54% of Other Pacific Islander students, 44.3% of students of 2 or more ethnicities, and 50.8% of students of Other ethnicities reported having close friends who have been suspended in the past year ( $\chi^2=953.6$ ,  $df=7$ ,  $p<.001$ ).

About 16.5% of Japanese students, 28% of Caucasian students, 14.9% of Filipino students, 28.1% of Native Hawaiian students, 10.8% of Other Asian students, 21.1% of Other Pacific Islander students, 25% of

students of 2 or more ethnicities, and 29.4% of students of Other ethnicities reported having close friends who sold illegal drugs in the past year ( $\chi^2=687.1$ ,  $df=7$ ,  $p<.001$ ).

Almost 9% of Japanese students, 10.5% of Caucasian students, 8% of Filipino students, 17.7% of Native Hawaiian students, 7% of Other Asian students, 16.9% of Other Pacific Islander students, 11.5% of students of 2 or more ethnicities, and 16.8% of students of Other ethnicities reported having close friends that have stolen or tried to steal a motor vehicle in the past year ( $\chi^2=442.5$ ,  $df=7$ ,  $p<.001$ ).

About 17% of Japanese students, 28% of Caucasian students, 18.9% of Filipino students, 30.1% of Native Hawaiian students, 16.7% Other Asian students, 31.2% of Other Pacific Islander students, 26.7% of students of 2 or more ethnicities, and 32% of students of Other ethnicity reported having close friends who have been arrested in the past year ( $\chi^2=520.3$ ,  $df=7$ ,  $p<.001$ ).

Almost 14% of Japanese students, 20.8% of Caucasian students, 16.2% of Filipino students, 26.3% of Native Hawaiian students, 16% Other Asian students, 26.8% of Other Pacific Islander students, 26.6% of students of 2 or more ethnicities, and 28.3% of students of Other ethnicity reported having close friends who dropped out of school in the past year ( $\chi^2=436.1$ ,  $df=7$ ,  $p<.001$ ).

Table 4b.3. Correlations Between Peer Antisocial or Deviant Behavior and Substance Use Prevalence, 2007  
(Entries are correlations)

Risk Factor: Peer Antisocial or Deviant Behavior	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How many best friends have been suspended	.27	.24	.19	.23	.25	.19
How many best friends have sold illegal drugs	.43	.42	.32	.45	.49	.38
How many best friends have stolen or tried to steal a motor vehicle	.29	.31	.23	.28	.35	.33
How many best friends have been arrested	.36	.36	.28	.33	.38	.30
How many best friends have dropped out of school	.35	.35	.29	.30	.36	.28

For the most part, peer antisocial or deviant behaviors were mildly to moderately positively correlated with youth substance use ( $r=.30$  to  $.49$ ) with the strongest relationship between the number of best friends that have sold illegal drugs and being drunk or high at school. Moderate correlations were found for best friends having sold illegal drugs and monthly substance use ( $r=.32$  to  $r=.45$ ).

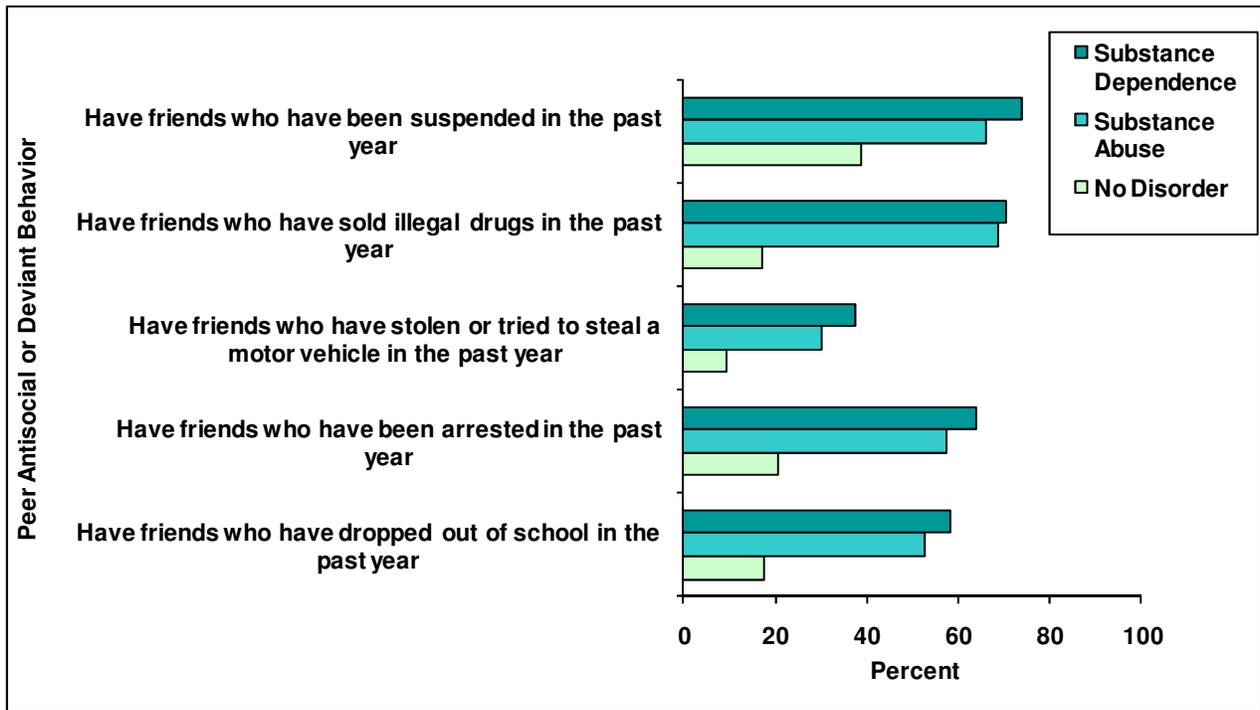


Figure 4b.10. Peer Antisocial or Deviant Behavior by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to have friends who engaged in antisocial or deviant behavior. Students with substance abuse and dependence had similar proportions of peer antisocial and deviant behavior but significantly more than students without substance abuse or dependence for peers having been suspended, ( $\chi^2=700.0$ ,  $df=2$ ,  $p<.001$ ); peers having sold illegal drugs ( $\chi^2=2822.1$ ,  $df=2$ ,  $p<.001$ ); peers having stolen or tried to steal a motor vehicle ( $\chi^2=1043.9$ ,  $df=2$ ,  $p<.001$ ); peers having been arrested ( $\chi^2=1499.2$ ,  $df=2$ ,  $p<.001$ ); and peers having dropped out of school ( $\chi^2=1509.3$ ,  $df=2$ ,  $p<.001$ ).

## PEER VALUES ABOUT SUBSTANCE USE

Peer values about substance use was based on an 8-item, 4-point scale assessing how students' close friends would feel about them using substances. Students were asked how they think their close friends would feel about them smoking one or more packs of cigarettes per day; having four or more drinks of alcohol once or twice each weekend; smoking marijuana occasionally; using cocaine occasionally; using methamphetamine once or twice; trying inhalants to get high; using ecstasy occasionally; and using other illegal drugs. Response choices were: (1) *Would Think It Was Cool*; (2) *Would Not Care*; (3) *Would Disapprove*; and (4) *Would Strongly Disapprove*. Peer disapproval of substance use was defined having close friends who *Would Disapprove* or *Would Strongly Disapprove* of substance use.

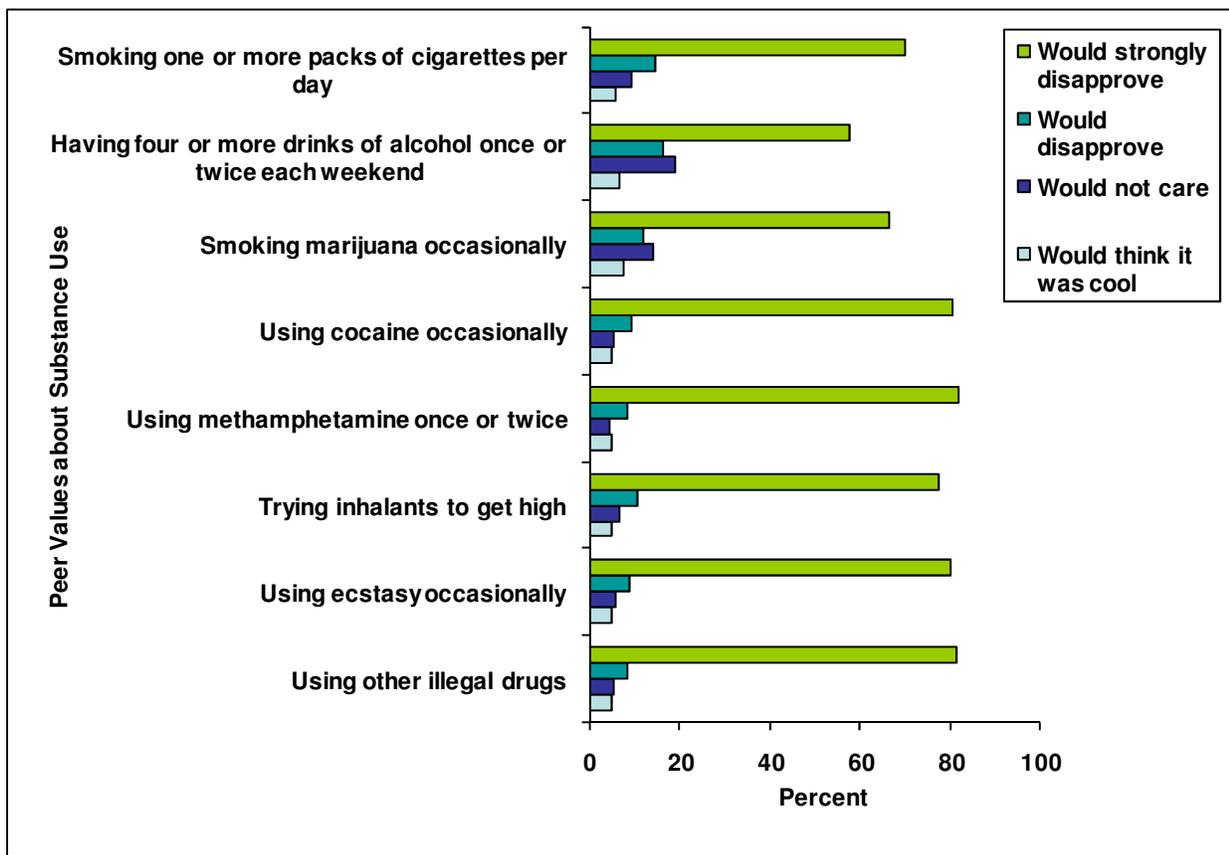


Figure 4b.11. Peer Values about Substance Use, 2007 (Weighted Data)

Most students reported peer disapproval of substance use. However, the substances that had the most peer approval were marijuana (14% of friends would not care and 7.5% would think it was cool) and binge drinking (19% of friends would not care and 6.8% would think it was cool).

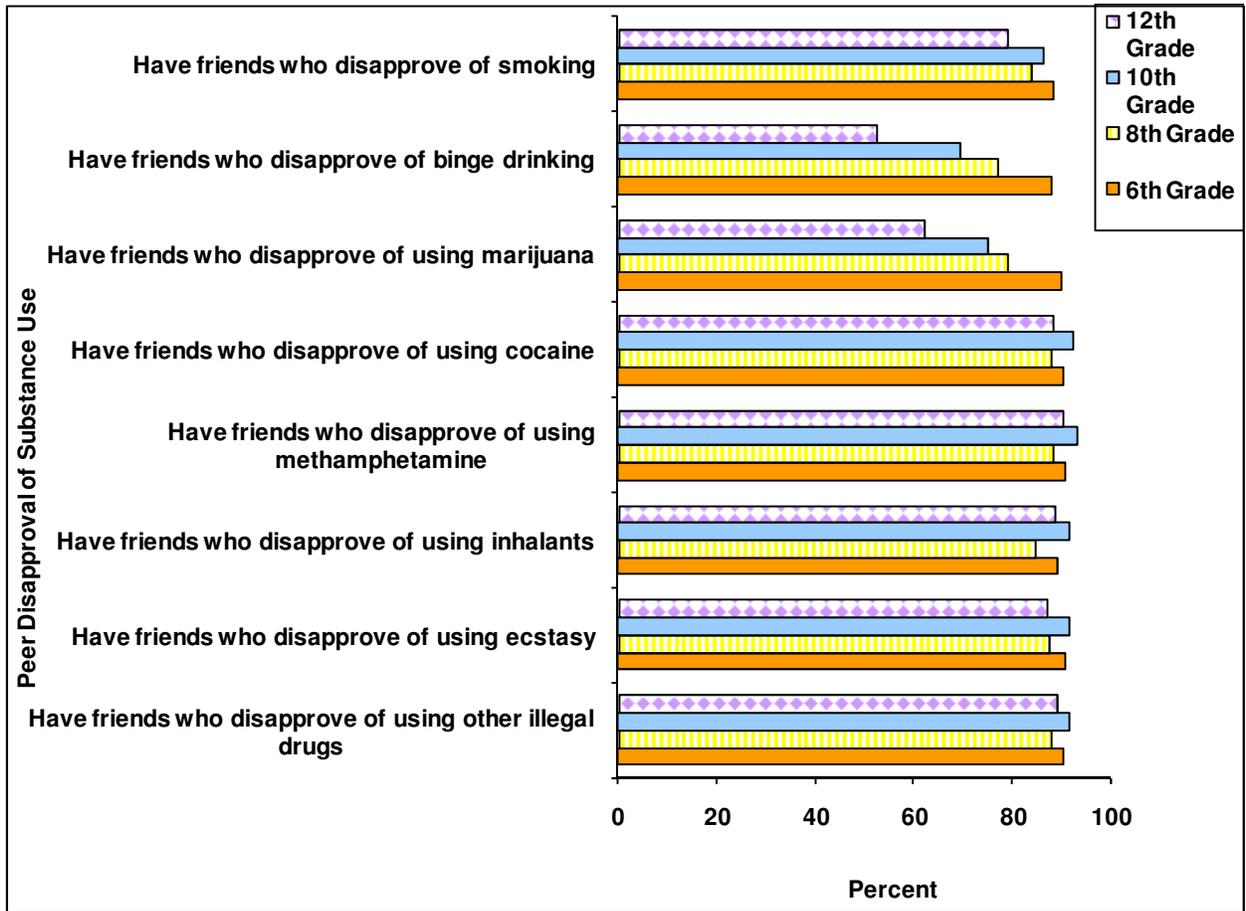


Figure 4b.12. Peer Disapproval of Substance Use by Grade, 2007 (Weighted Data)

For cigarette smoking, binge drinking, and marijuana use, rates of peer disapproval were highest for 6<sup>th</sup> graders and generally decreased with higher grade levels. For other drugs (cocaine, methamphetamine, inhalants, ecstasy, and other illegal drugs), rates of peer disapproval were higher for 6<sup>th</sup> and 10<sup>th</sup> graders compared to 8<sup>th</sup> and 12<sup>th</sup> graders.

About 88% of 6<sup>th</sup> graders, 84% of 8<sup>th</sup> graders, 86.3% of 10<sup>th</sup> graders, and 79.1% of 12<sup>th</sup> graders reported having friends who would disapprove of smoking cigarettes ( $\chi^2=231.1$ ,  $df=3$ ,  $p<.001$ ). For binge

drinking, 88.1% of 6<sup>th</sup> graders, 76.8% of 8<sup>th</sup> graders, 69.3% of 10<sup>th</sup> graders, and 52.6% of 12<sup>th</sup> graders reported having friends who would disapprove ( $\chi^2=2205.8$ ,  $df=3$ ,  $p<.001$ ). Almost 90% of 6<sup>th</sup> graders, 79% of 8<sup>th</sup> graders, 75.2% of 10<sup>th</sup> graders, and 62.3% of 12<sup>th</sup> graders reported having friends who would disapprove of their using marijuana ( $\chi^2=1500.3$ ,  $df=3$ ,  $p<.001$ ).

Peer disapproval rates were more similar across grades for cocaine (6<sup>th</sup> graders, 90.5%; 8<sup>th</sup> graders, 87.9%; 10<sup>th</sup> graders, 92.6%; 12<sup>th</sup> graders, 88.4%;  $\chi^2=91.7$ ,  $df=3$ ,  $p<.001$ ), methamphetamine (6<sup>th</sup> graders, 90.8%; 8<sup>th</sup> graders, 88.2%; 10<sup>th</sup> graders, 93.1%; 12<sup>th</sup> graders, 90.4%;  $\chi^2=85.0$ ,  $df=3$ ,  $p<.001$ ), inhalants (6<sup>th</sup> graders, 89.2%; 8<sup>th</sup> graders, 84.6%; 10<sup>th</sup> graders, 91.5%; 12<sup>th</sup> graders, 88.6%;  $\chi^2=150.0$ ,  $df=3$ ,  $p<.001$ ), ecstasy (6<sup>th</sup> graders, 91%; 8<sup>th</sup> graders, 87.3%; 10<sup>th</sup> graders, 91.5%; 12<sup>th</sup> graders, 87%;  $\chi^2=110.6$ ,  $df=3$ ,  $p<.001$ ), and other illegal drugs (6<sup>th</sup> graders, 90.6%; 8<sup>th</sup> graders, 87.7%; 10<sup>th</sup> graders, 91.8%; 12<sup>th</sup> graders, 89.2%;  $\chi^2=63.0$ ,  $df=3$ ,  $p<.001$ ).

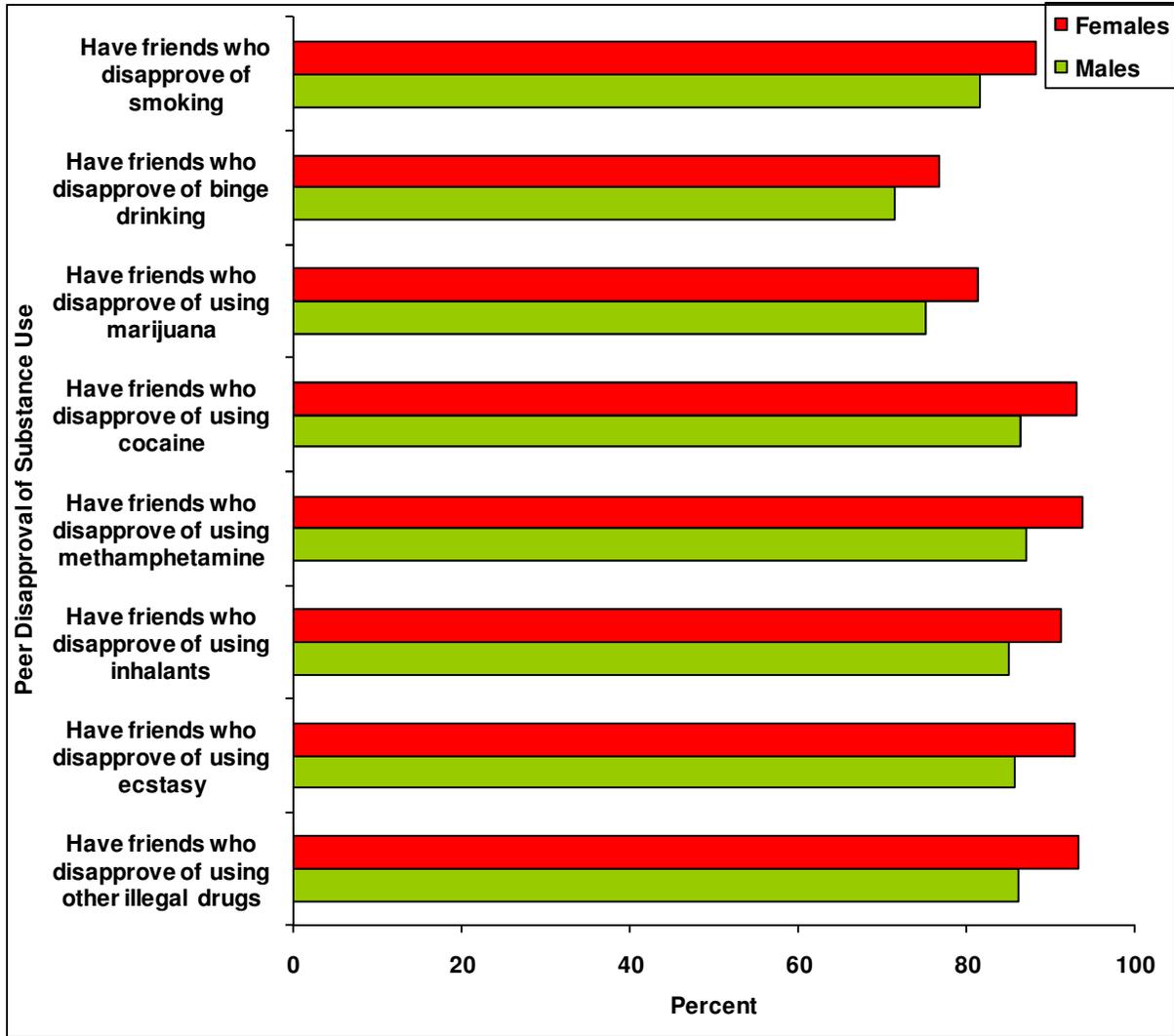


Figure 4b.13. Peer Disapproval of Substance Use by Gender, 2007 (Weighted Data)

Overall, more females than males had close friends who disapproved of ATOD use, including smoking (88.2% vs. 81.6%,  $\chi^2=216.3$ ,  $df=1$ ,  $p<.001$ ); binge drinking (76.7% vs. 71.6%,  $\chi^2=83.2$ ,  $df=1$ ,  $p<.001$ ); marijuana (81.4% vs. 75.3%,  $\chi^2=135.5$ ,  $df=1$ ,  $p<.001$ ); cocaine (93.2% vs. 86.5%,  $\chi^2=308.1$ ,  $df=1$ ,  $p<.001$ ); methamphetamine (93.9% vs. 87.1%,  $\chi^2=340.6$ ,  $df=1$ ,  $p<.001$ ); inhalants (91.3% vs. 85.1%,  $\chi^2=228.7$ ,  $df=1$ ,  $p<.001$ ); ecstasy (92.9% vs. 85.7%,  $\chi^2=342.4$ ,  $df=1$ ,  $p<.001$ ); and other illegal drugs (93.3% vs. 86.2%,  $\chi^2=339.4$ ,  $df=1$ ,  $p<.001$ ).

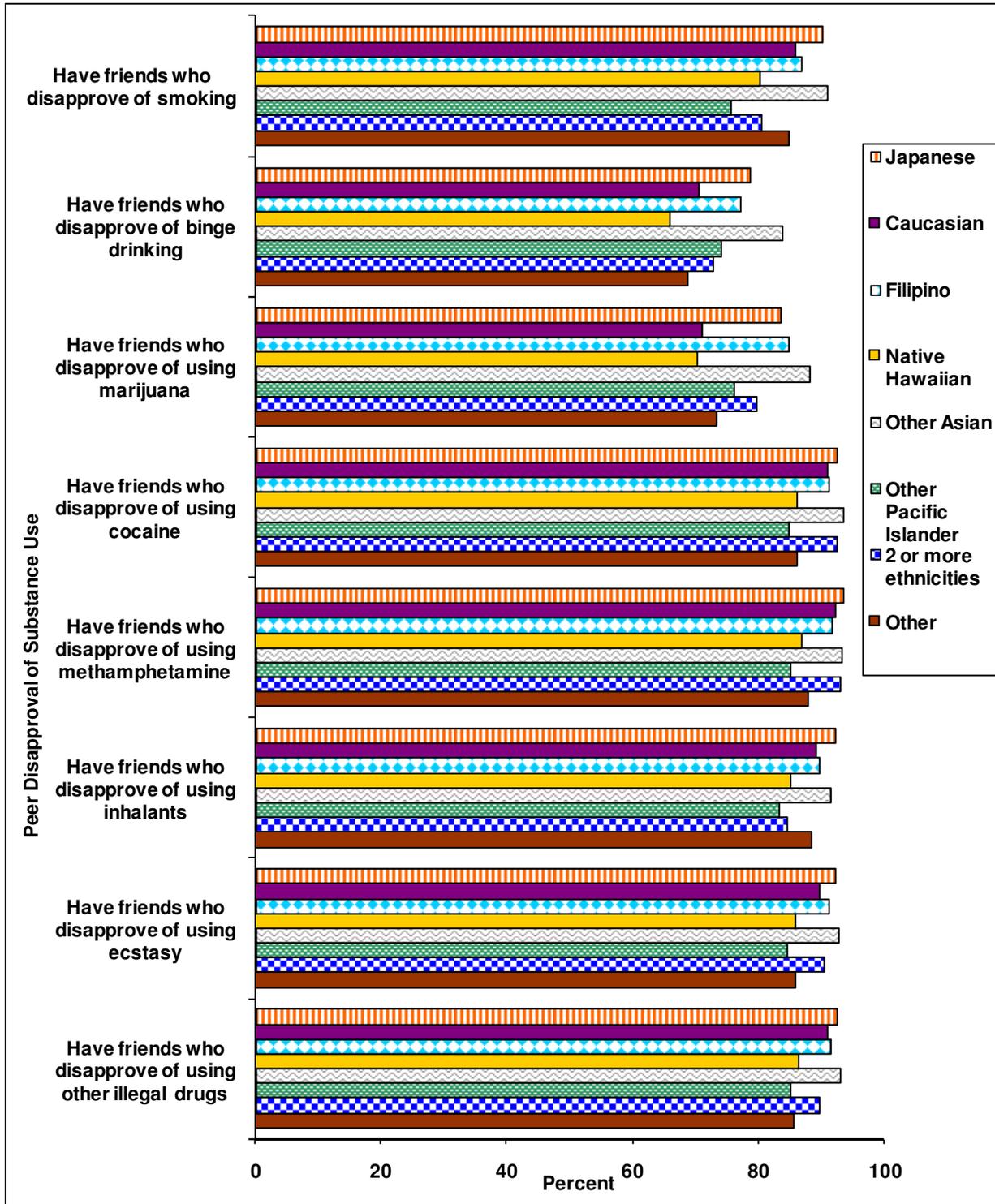


Figure 4b.14. Peer Disapproval of Substance Use by Ethnicity, 2007 (Weighted Data)

Significant differences were found for peer disapproval of substance use by ethnicity. For cigarette smoking, binge drinking, and marijuana use, students of Japanese, Other Asian, and Filipino ethnicities had

the highest rates of peer disapproval, while students of Native Hawaiian ethnicity had the lowest rates. Similar patterns of peer disapproval by ethnicity were also found for cocaine, methamphetamine, inhalants, ecstasy, and other illegal drugs with Japanese, Other Asian, and Filipino groups reporting higher rates of peer disapproval than Native Hawaiian and Other Pacific Islander groups.

For cigarette smoking, about 90% of Japanese students, 85.9% of Caucasian students, 86.9% of Filipino students, 80.4% of Native Hawaiian students, 90.9% of Other Asian students, 75.7% of Other Pacific Islander students, 87.5% of students of 2 or more ethnicities, and 80.5% of students of Other ethnicities reported having friends who would disapprove ( $\chi^2=419.4$ ,  $df=7$ ,  $p<.001$ ).

For binge drinking, almost 79% of Japanese students, 70.7% of Caucasian students, 77.1% of Filipino students, 66% of Native Hawaiian students, 83.9% of Other Asian students, 74.2% of Other Pacific Islander students, 72.8% of students of 2 or more ethnicities, and 68.8% of students of Other ethnicities reported having friends who would disapprove ( $\chi^2=366.7$ ,  $df=7$ ,  $p<.001$ ).

For marijuana use, 83.6% of Japanese students, 71% of Caucasian students, 84.7% of Filipino students, 70.4% of Native Hawaiian students, 88.2% of Other Asian students, 76.1% of Other Pacific Islander students, 79.7% of students of 2 or more ethnicities, and 73.4% of students of Other ethnicities reported having friends who would disapprove ( $\chi^2=668.8$ ,  $df=7$ ,  $p<.001$ ).

For cocaine, 92.6% of Japanese students, 91.2% of Caucasian students, 91.3% of Filipino students, 86.2% of Native Hawaiian students, 93.5% of Other Asian students, 84.8% of Other Pacific Islander students, 92.5% of students of 2 or more ethnicities, and 86.3% of students of Other ethnicity reported having friends who would disapprove ( $\chi^2=240.0$ ,  $df=7$ ,  $p<.001$ ).

For methamphetamine, 93.4% of Japanese students, 92.4% of Caucasian students, 91.8% of Filipino students, 87% of Native Hawaiian students, 93.2% of Other Asian students, 85.1% of Other Pacific Islander

students, 92.9% of students of 2 or more ethnicities, and 87.9% of students of Other ethnicity reported having friends who disapprove ( $\chi^2=247.3$ ,  $df=7$ ,  $p<.001$ ).

For inhalants, about 92% of Japanese students, 89.4% of Caucasian students, 89.7% of Filipino students, 85.1% of Native Hawaiian students, 91.4% of Other Asian students, 83.2% of Other Pacific Islander students, 87.3% of students of 2 or more ethnicities, and 84.6% of students of Other ethnicity reported having friends that would disapprove ( $\chi^2=218.3$ ,  $df=7$ ,  $p<.001$ ).

For ecstasy, about 92% of Japanese students, 89.9% of Caucasian students, 91.2% of Filipino students, 85.9% of Native Hawaiian students, 92.7% of Other Asian students, 84.5% of Other Pacific Islander students, 90.4% of students of 2 or more ethnicities, and 85.9% of students of Other ethnicity reported having friends that would disapprove ( $\chi^2=216.1$ ,  $df=7$ ,  $p<.001$ ).

For other illegal drugs, 92.6% of Japanese students, 91% of Caucasian students, 91.4% of Filipino students, 86.4% of Native Hawaiian students, 93.1% of Other Asian students, 85.2% of Other Pacific Islander students, 89.7% of students of 2 or more ethnicities, and 85.8% of students of Other ethnicity reported having friends who would disapprove ( $\chi^2=217.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4b.4. Correlations Between Peer Values About Substance Use and Substance Use Prevalence, 2007  
(Entries are correlations)

Risk Factor: Peer Values About Substance Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Friends feeling about smoking one or more packs of cigarettes per day	-.19	-.18	-.24	-.17	-.17	-.14
Friends feeling about having four or more drinks of alcohol once or twice each weekend	-.37	-.34	-.23	-.28	-.27	-.17
Friends feeling about smoking marijuana occasionally	-.33	-.31	-.25	-.38	-.32	-.20
Friends feeling about using cocaine occasionally	-.15	-.16	-.17	-.15	-.15	-.16
Friends feeling about using methamphetamine once or twice	-.12	-.12	-.14	-.11	-.12	-.13
Friends feeling about trying inhalants to get high	-.13	-.12	-.15	-.12	-.13	-.13
Friends feeling about using ecstasy occasionally	-.16	-.16	-.16	-.15	-.16	-.15
Friends feeling about other illegal drugs	-.14	-.14	-.15	-.13	-.14	-.14

For the most part, peer values about substance use was mildly negatively correlated ( $r=-.20$  to  $r=-.38$ ) with monthly substance use, drinking or getting high at school and selling illegal drugs. The strongest negative correlation was between friends feeling it is wrong to smoke marijuana and monthly marijuana use.

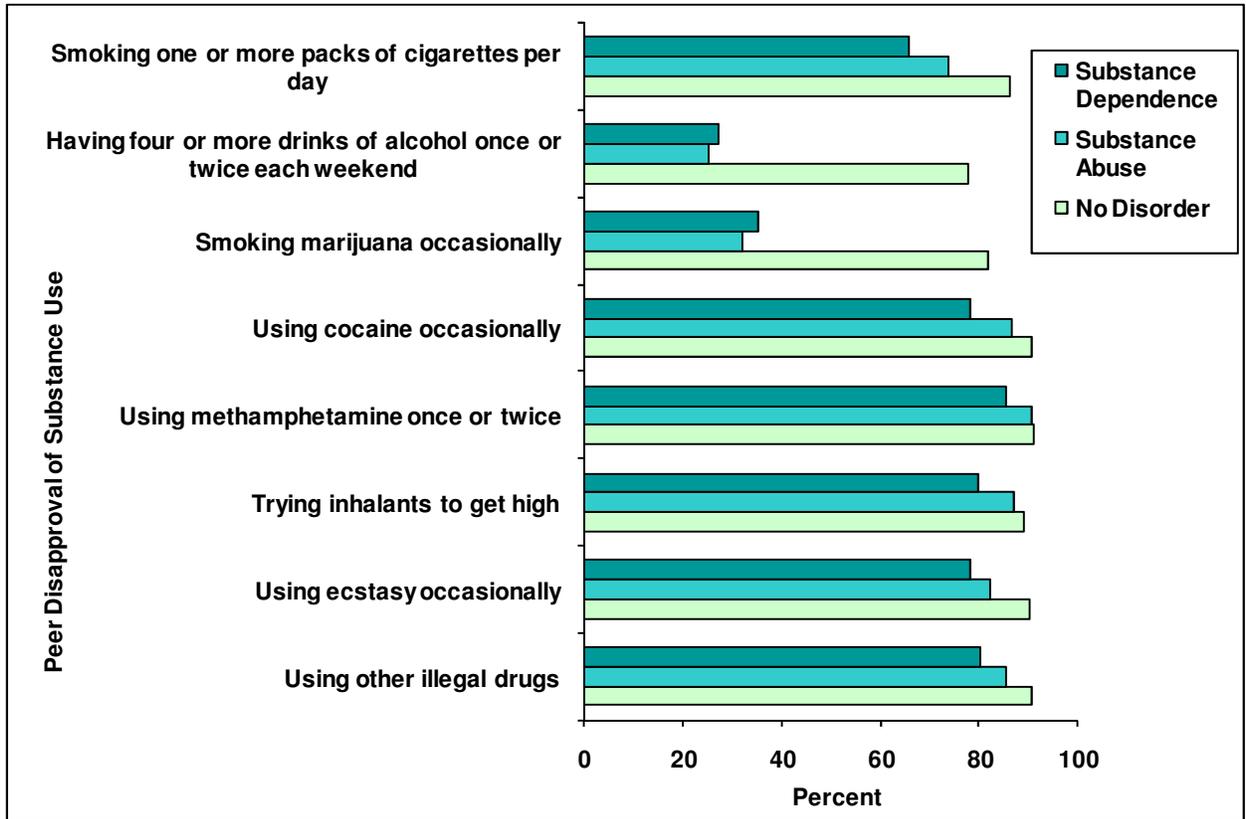


Figure 4b.15. Peer Disapproval of Substance Use by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse and dependence had similar proportions of peer disapproval of substance use but significantly less than students without substance abuse or dependence for peer disapproval of smoking one or more packs of cigarettes per day, (65.6% dependence, 73.8% abuse vs. 86.3% none,  $\chi^2=389.4$ ,  $df=2$ ,  $p<.001$ ); peer disapproval of binge drinking once or twice each weekend (27.2% dependence, 25.3% abuse vs. 77.7% none,  $\chi^2=2289.2$ ,  $df=2$ ,  $p<.001$ ); and peer disapproval of smoking marijuana occasionally (35.4% dependence, 32% abuse vs. 81.9% none,  $\chi^2=2275.4$ ,  $df=2$ ,  $p<.001$ ). Peer disapproval was highest for students without substance abuse or dependence, followed by students with substance abuse, followed by students with substance dependence. Slight differences (no larger than about 12%) were seen for peer disapproval of using cocaine occasionally (78.4% dependence, 86.5% abuse vs. 90.6% none,  $\chi^2=158.7$ ,  $df=2$ ,  $p<.001$ ); peer disapproval of using methamphetamine once or twice (85.5% dependence, 90.7% abuse vs. 90.9% none,  $\chi^2=31.3$ ,  $df=2$ ,  $p<.001$ ); peer disapproval of trying inhalants to

get high (79.9% dependence, 87.2% abuse vs. 88.9% none,  $\chi^2=71.5$ ,  $df=2$ ,  $p<.001$ ); peer disapproval of using ecstasy occasionally (78.4% dependence, 82.4% abuse vs. 90.2% none,  $\chi^2=177.8$ ,  $df=2$ ,  $p<.001$ ); and peer disapproval of using other illegal drugs (80.2% dependence, 85.4% abuse vs. 90.5% none,  $\chi^2=124.5$ ,  $df=2$ ,  $p<.001$ ). Peer disapproval of binge drinking and using marijuana occasionally was reported the least for students with a substance abuse or dependence diagnosis.

## CONCLUSION

---

Findings for the peer risk and protective factors were similar to the 2003 Hawai'i Student ATOD survey. Peer factors are important influences on adolescent substance use. Risk factors such as peer substance use and antisocial behavior can vary by grade, gender, and ethnicity. With the largest increase in peer substance use and antisocial behavior occurring between elementary and middle school, early prevention and intervention programs should also teach or train students to recognize attributes that characterize peers who are a positive influence as well as learning to make good choices about friendships.

Peer substance use and peer approval of substance use also potentially put students at a greater risk for substance use and substance dependence. The protection offered by peer disapproval for more commonly used substances such as cigarettes, alcohol, and marijuana, also tends to decrease as students get older. Therefore, minimizing other peer risk factors after the transition from middle to high school may be important for prevention and intervention efforts.

Some differences in peer risk and protective factors by gender were seen, with females slightly more likely than males to have friends who use substances, but also more likely to have friends that disapprove of using substances. Although this appears contradictory, a possible explanation may be that females have a larger circle of friends than males. In comparison, males were more likely to have friends who engaged in antisocial behaviors. Although slight, the differences between males and females in these factors may help in tailoring programs more effectively. Likewise, ethnic differences found in peer risk and

protective factors should be used to inform early peer prevention and intervention programs for incorporating a cultural context.

## FAMILY DOMAIN

### INTRODUCTION

---

Family factors have been shown to be among the most important contributors to substance use in adolescence. Family factors have an important role in explaining the onset, development, and amelioration of substance use. A consistent global finding is that substance abuse runs in families. A family history of drug abuse and dependence substantially increases the risk for such problems among members. Although genetics plays a substantial role, the family environment plays a role in both promoting and protecting from substance abuse and dependence. This section reviews some of these factors.

Within the family, parental, and sibling substance use, favorable parental attitudes towards substance use and antisocial behavior, and poor family management practices are important risk factors (Brook & Brook, 1992). Heavy alcohol use or recreational illegal drug use by parents or siblings is associated with increased substance use among youth (Hawkins, Catalano, & Miller, 1992; Kilpatrick et al., 2000). Parents or other family members who have problems with drugs and alcohol may model substance use as well as increase access to and opportunities for alcohol and drug use by having substances available. However, parents who involve their children in substance use increase the likelihood that their teens will use alcohol or other drugs (for example, asking their child to get them a beer or to light a cigarette). Furthermore, when family members communicate favorable attitudes towards alcohol and other drug use, substance use is more likely (Jackson & Henriksen, 1997; Hawkins, Catalano & Miller, 1992). Favorable attitudes by parents may instill similar views in youth and lead to more positive expectancies and less negative expectancies about substance use.

Poor family management practices include lack of clear expectations for behavior, failure of parents to monitor or supervise their children and harsh or inconsistent punishment (Fleming, Kim, Harachi, &

Catalano, 2002; Hill, Hawkins, Catalano, & Abbott, 2005; Huizinga, Loeber, & Thornberry, 1994). Youth are more apt to get involved in alcohol use when parents are tolerant of children's use and when there are few or inconsistent rewards for nonuse (Hawkins, Catalano, & Miller, 1992). Poor parental monitoring is a strong predictor of substance use (Baumrind, 1987; Patterson & Southamer-Loeber, 1984; Steinberg, 1991). Knowing where teens are, what they are doing and who they are with may be especially important in the after-school hours; one study linked unsupervised after-school time to substance use and abuse (Richardson et al., 1989).

In contrast, several factors have been shown to be protective of youth substance use. Parent-family connectedness, warmth and attachment, participation of parent and adolescent shared activities, parent supervision, high parental school expectations, and parental communication of norms against a substance can promote resistance to alcohol and other drug use (Kosterman, Hawkins, Guo, Catalano, & Abbott, 2000; Resnick et al., 1997). Family attachment is linked to support for adolescents, and provision of a context in which to enact, and be reinforced for adaptive coping behavior. Young people with strong attachment to parents may also be less likely to form relationships with peers who use alcohol and other drugs (Hawkins, Catalano, & Miller, 1992; Miller & Volk, 2002). Families with opportunities and rewards for prosocial behavior have also been identified as protective factors (Barnes & Farrell, 1992; Hawkins, Catalano, & Miller, 1992; Huizinga, Loeber, & Thornberry, 1994; Kandel & Andrews, 1987). This helps to reinforce strong positive parent-child relationships and encourage positive behaviors. Close family relationships increase the likelihood that parents' rules are followed. Additionally, youth may refrain from substance use because they do not want to risk losing their parents' approval and affection.

Similar to previous Hawai'i Student ATOD Surveys, eight family domain variables were measured in the study: five risk factors (Exposure to Family ATOD Use, Poor Family Supervision, Lack of Parental Sanctions for ASBs, Parental Attitudes Favorable Toward ATOD Use, Parental Attitudes Favorable Toward

ASB) and three protective factors (Family Attachment, Family Opportunities for Positive Involvement, Family Rewards for Positive Involvement).

Table 4c.1. Family Risk and Protective Factors and the Corresponding 2007-2008 Hawai'i Student ATOD Survey Questions and Responses (Adapted from Pearson, 2003).

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Exposure to Family ATOD Use</b>	Defined as a high degree of exposure to parents' ATOD use. In families where parents use illegal drugs or are heavy users of alcohol, children are more likely to become drug abusers during adolescence. The risk is further increased if parents involve children in their own substance-using behavior – for example, asking the child to light the parent's cigarette or to get the parent a beer from the refrigerator.	During the last 12 months, how often have you been around the following people when they were using cigarettes or other tobacco products? Parents? Brothers or sisters? Other relatives?	Not at all = 0 A few times a year = 1 Once or twice a month = 2 At least once a week = 3 Almost every day = 4
		During the last 12 months, how often have you been around the following people when they were using alcohol? Parents? Brothers or sisters? Other relatives?	
		During the last 12 months, how often have you been around the following people when they were using drugs other than tobacco or alcohol? Parents? Brothers or sisters? Other relatives?	
<b>Poor Family Supervision</b>	Defined as a lack of clear expectations for behavior and a failure of parents to monitor their children. Parents' failure to provide clear expectations and to monitor their children's behavior makes it more likely that their children will engage in drug use, whether or not there are family drug problems.	My parents ask me if I've gotten my homework done	NO! = 0 no = 1 yes = 2 YES! = 3
		When I am not at home, one of my parents knows where I am and who I am with	
		My parents would know if I didn't come home on time	
		My parents want me to call if I'm going to be late getting home	
		The rules in my family are clear	
		My family has clear rules about alcohol and drug use	

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Lack of Parental Sanctions for Antisocial Behaviors (ASBs)</b>	Defined as a low probability that parents will sanction their children for substance use, skipping school, and handgun use. Parents' failure to clearly communicate to their children that their children would be in trouble if caught using substances or engaging in antisocial behaviors places children at higher risk for substance use.	Would you be in trouble if your parents caught you smoking cigarettes?	No, not really = 0 Yes, a little = 1 Yes, a lot = 2
		Would you be in trouble if your parents caught you drinking alcohol?	
		Would you be in trouble if your parents caught you smoking marijuana?	
		Would you be in trouble if your parents caught you using other illegal drugs?	
		Would you be in trouble if your parents caught you skipping school?	
<b>Parental Attitudes Favorable Toward ATOD Use</b>	Defined as parental attitudes approving of young people's ATOD use. In families where parents are tolerant of children's use, children are more likely to become drug abusers during adolescence.	How wrong do your parents feel it would be for you to drink alcohol regularly?	Very wrong = 4 Wrong = 3 A little bit wrong = 2 Not at all wrong = 1
		How wrong do your parents feel it would be for you to drink smoke cigarettes?	
		How wrong do your parents feel it would be for you to drink smoke marijuana?	
<b>Parental Attitudes Favorable Toward ASB</b>	Defined as parental attitudes excusing children for breaking laws. In families where parents are tolerant of antisocial behavior, children are more likely to engage in antisocial behavior.	How wrong do your parents feel it would be for you to steal anything worth more than \$5?	Very wrong = 4 Wrong = 3 A little bit wrong = 2 Not at all wrong = 1
		How wrong do your parents feel it would be for you to draw graffiti, write things, or draw pictures on buildings or other property (without the owner's permission)?	
		How wrong do your parents feel it would be for you to pick a fight with someone?	

Protective Factors			
Factor	Description	Question	Response Choices and Coding for Analyses
<b>Family Attachment</b>	Defined as feeling connected to and loved by one's family. Young people who feel that they are a valued part of their family are less likely to engage in substance use and other problem behaviors.	I feel very close to my mother	NO! = 0 no = 1 yes = 2 YES! = 3
		I share my thoughts and feelings with my mother	
		I feel very close to my father	
		I share my thoughts and feelings with my father	
<b>Family Opportunities for Positive Involvement</b>	Defined as opportunities for positive social interaction with parents. Young people who are exposed to more opportunities to participate meaningfully in the responsibilities and activities of the family are less likely to engage in drug use and other problem behaviors.	My parents give me a lot of chances to do fun things with them	NO! = 0 no = 1 yes = 2 YES! = 3
		My parents ask me what I think when making decisions that affect me	
		If I had a personal problem, I could ask my mom or dad for help	
<b>Family Rewards for Positive Involvement</b>	Defined as positive experiences with parental figures. When family members praise, encourage, and attend to their children's accomplishments, children are less likely to engage in substance use and ASB.	I enjoy spending time with my mother	NO! = 0 no = 1 yes = 2 YES! = 3
		I enjoy spending time with my father	
		How often do your parents tell you that you are doing a good job?	Never or almost never = 0 Sometimes = 1 Often = 2 All the time = 3
		How often do your parents tell you they're proud of you for something you've done?	

## EXPOSURE TO FAMILY SUBSTANCE USE

Exposure to Family ATOD Use was based on a 9-item, 5-point scale that indexed the degree of exposure students had to ATOD use by parents and siblings. Students were asked how often they have been around their parents, how often they have been around their brothers and sisters, and how often they had been around other relatives when these family members were using alcohol and other illegal drugs. Response choices were: (1) *Not at all*; (2) *A few times a year*; (3) *Once or twice a month*; (4) *At least once a week*; and (5) *Almost every day*. The "Exposure to Family ATOD Use" has been shown to be strongly

associated with substance use in previous Hawai'i survey efforts (Pearson, 2004). High risk was defined by the response of *almost every day* for alcohol and cigarettes and any exposure for other drug use.

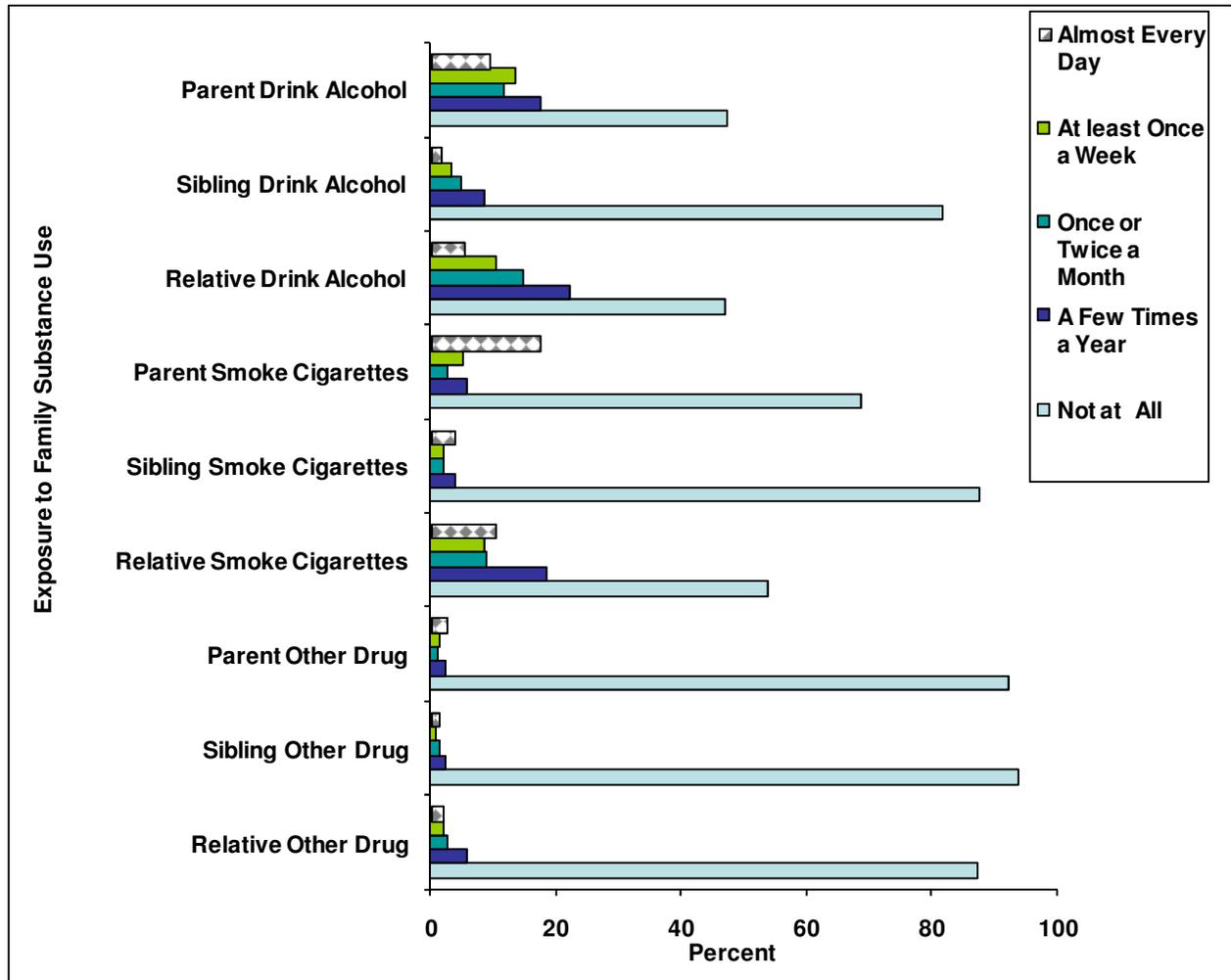


Figure 4c.1. Exposure to Family Substance Use, 2007 (Weighted Data)

Youth have the greatest Drug exposure to parents that smoke cigarettes (17.5%) and drink alcohol (9.6%) almost every day, followed by relatives (10.4% and 5.4%, respectively) and then siblings (4% and 1.7%, respectively). A similar pattern is seen for other drug exposure but to a lesser extent with youth reporting that 2.5% of parents, 2.1% of relatives and 1.4% of siblings use almost every day.

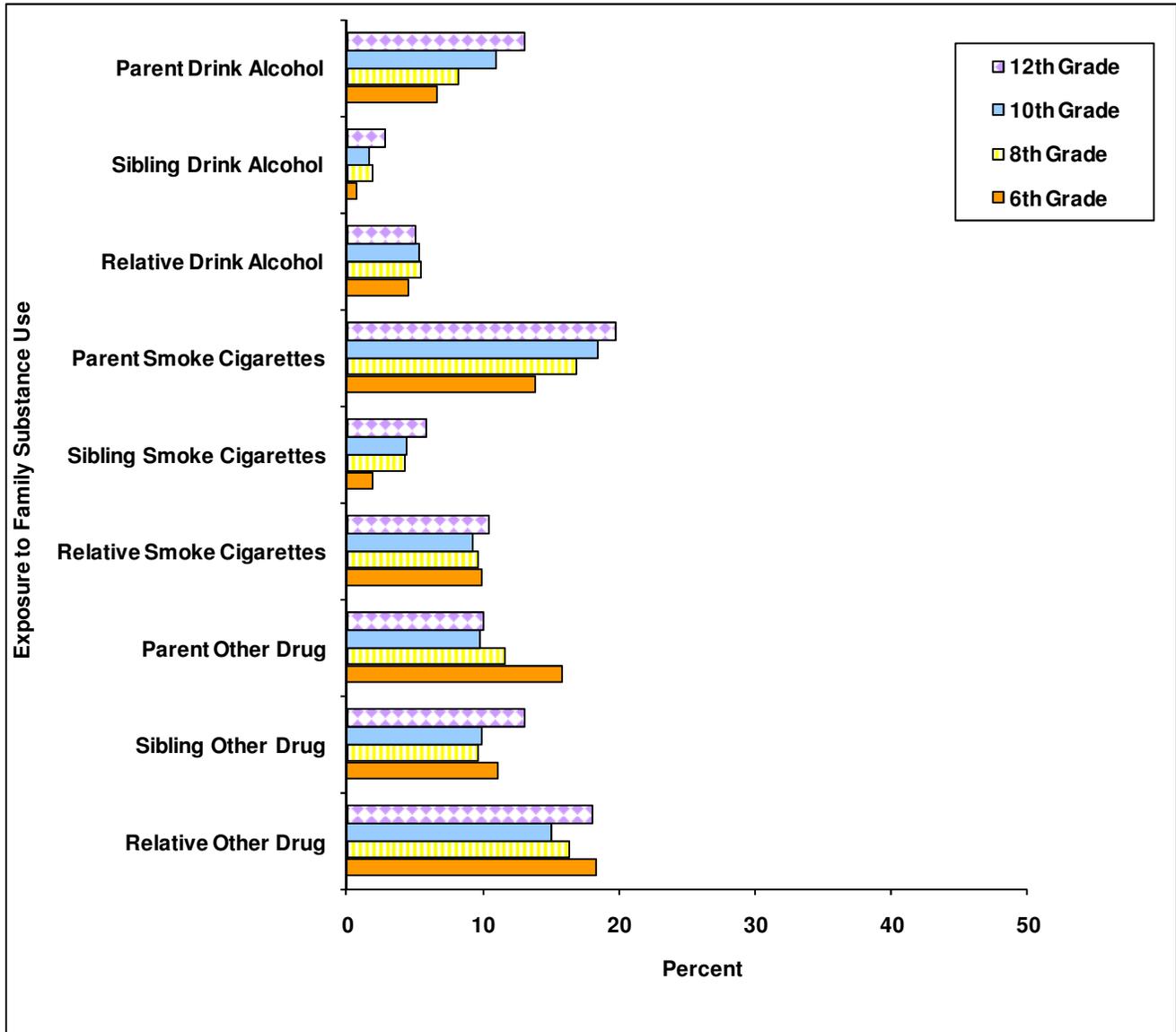


Figure 4c.2. Exposure to Family ATOD Use by Grade Level, 2007 (Weighted Data)

Generally, more youth in the 12<sup>th</sup> grade reported exposure to parent and sibling drinking and smoking followed by 10<sup>th</sup>, 8<sup>th</sup>, and 6<sup>th</sup> graders respectively. Thirteen percent of 12<sup>th</sup> graders, 11% of 10<sup>th</sup> graders, 8.2% of 8<sup>th</sup> graders, and 6.6% of 6<sup>th</sup> graders indicated they were exposed to daily drinking alcohol by parents ( $\chi^2=199.2$ ,  $df=3$ ,  $p<.001$ ). Nearly 20% of 12<sup>th</sup> graders, 18.4% of 10<sup>th</sup> graders, 16.9% of 8<sup>th</sup> graders, and 13.9% of 6<sup>th</sup> graders indicated that they had daily exposure to their parents smoking cigarettes ( $\chi^2=97.9$ ,  $df=3$ ,  $p<.001$ ). Almost 3% of 12<sup>th</sup> graders, 1.6% of 10<sup>th</sup> graders, 1.9% of 8<sup>th</sup> graders, and 0.7% of 6<sup>th</sup>

graders indicated that were exposed to daily drinking alcohol by siblings ( $\chi^2=98.1$ ,  $df=3$ ,  $p<.001$ ). Nearly 6% of 12<sup>th</sup> graders, 4.4% of 10<sup>th</sup> graders, 4.3% of 8<sup>th</sup> graders, and 1.9% of 6<sup>th</sup> graders indicated that they had daily exposure to their siblings smoking cigarettes ( $\chi^2=161.0$ ,  $df=3$ ,  $p<.001$ ). There was no difference in exposure to relative smoking cigarettes or drinking by grade. Exposure to other drug use by parents was highest among 6<sup>th</sup> graders (15.8%), followed by 8<sup>th</sup> graders (11.6%), 12<sup>th</sup> graders (10.1%), and 10<sup>th</sup> graders (9.8%;  $\chi^2=162.8$ ,  $df=3$ ,  $p<.001$ ). Grade level differences in exposure to other drug use were also found for siblings ( $\chi^2=40.8$ ,  $df=3$ ,  $p<.001$ ) and relatives ( $\chi^2=31.5$ ,  $df=3$ ,  $p<.001$ ).

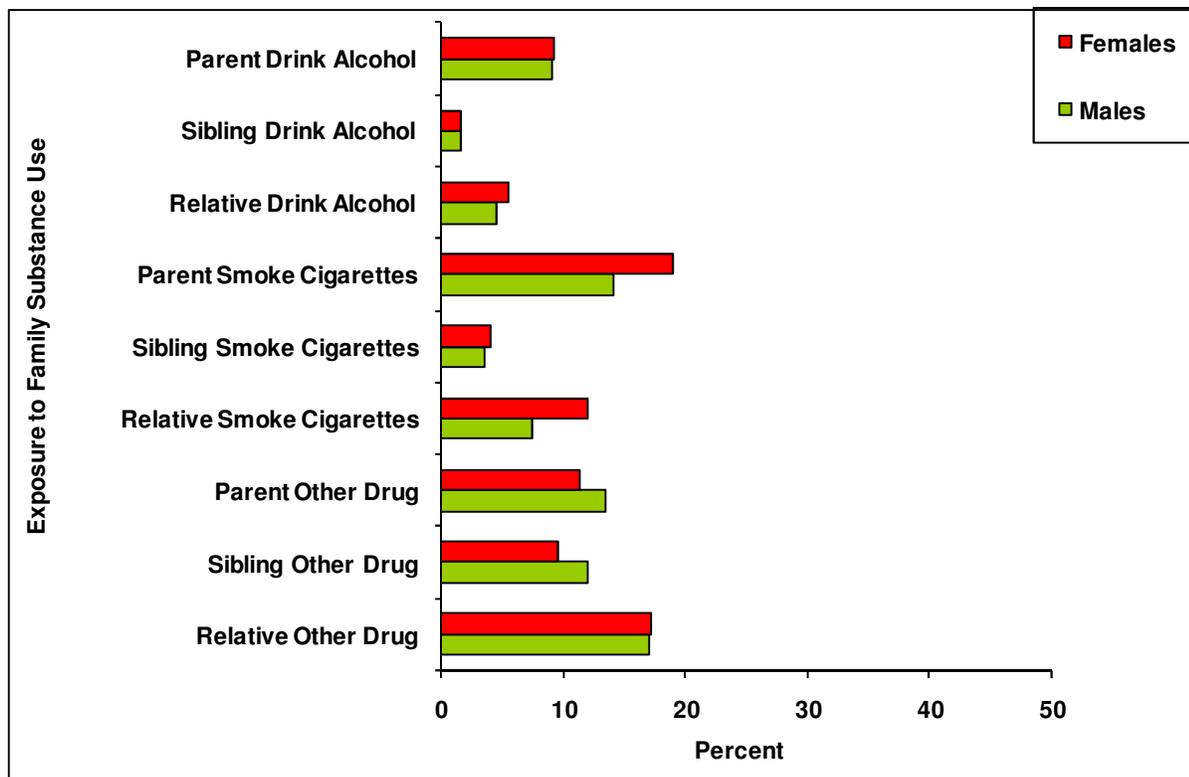


Figure 4c.3. Exposure to Family ATOD Use by Gender, 2007 (Weighted Data)

Significantly more females than males were exposed to parents smoking cigarettes (19.0% vs. 14.1%,  $\chi^2=111.8$ ,  $df=1$ ,  $p<.001$ ); relatives smoking cigarettes (12.0% vs. 7.4%,  $\chi^2=157.9$ ,  $df=1$ ,  $p<.001$ ); and, to a lesser extent siblings smoking cigarettes (4.0% vs. 3.5%,  $\chi^2=4.8$ ,  $df=1$ ,  $p=.028$ ). Significantly more males than females indicated that they had been exposed to parents using other drugs (13.5% vs. 11.3%,  $\chi^2=29.4$ ,

df=1,  $p<.001$ ); and siblings using other drugs (12.0% vs. 9.5%,  $X^2=45.2$ , df=1,  $p<.001$ ). No gender difference was found in exposure to other drug use by relatives. While males and females were similarly exposed to family drinking by parents and siblings, more females than males were exposed to drinking by other relatives (5.5% vs. 4.6%,  $X^2=11.2$ , df=1,  $p=.001$ ).

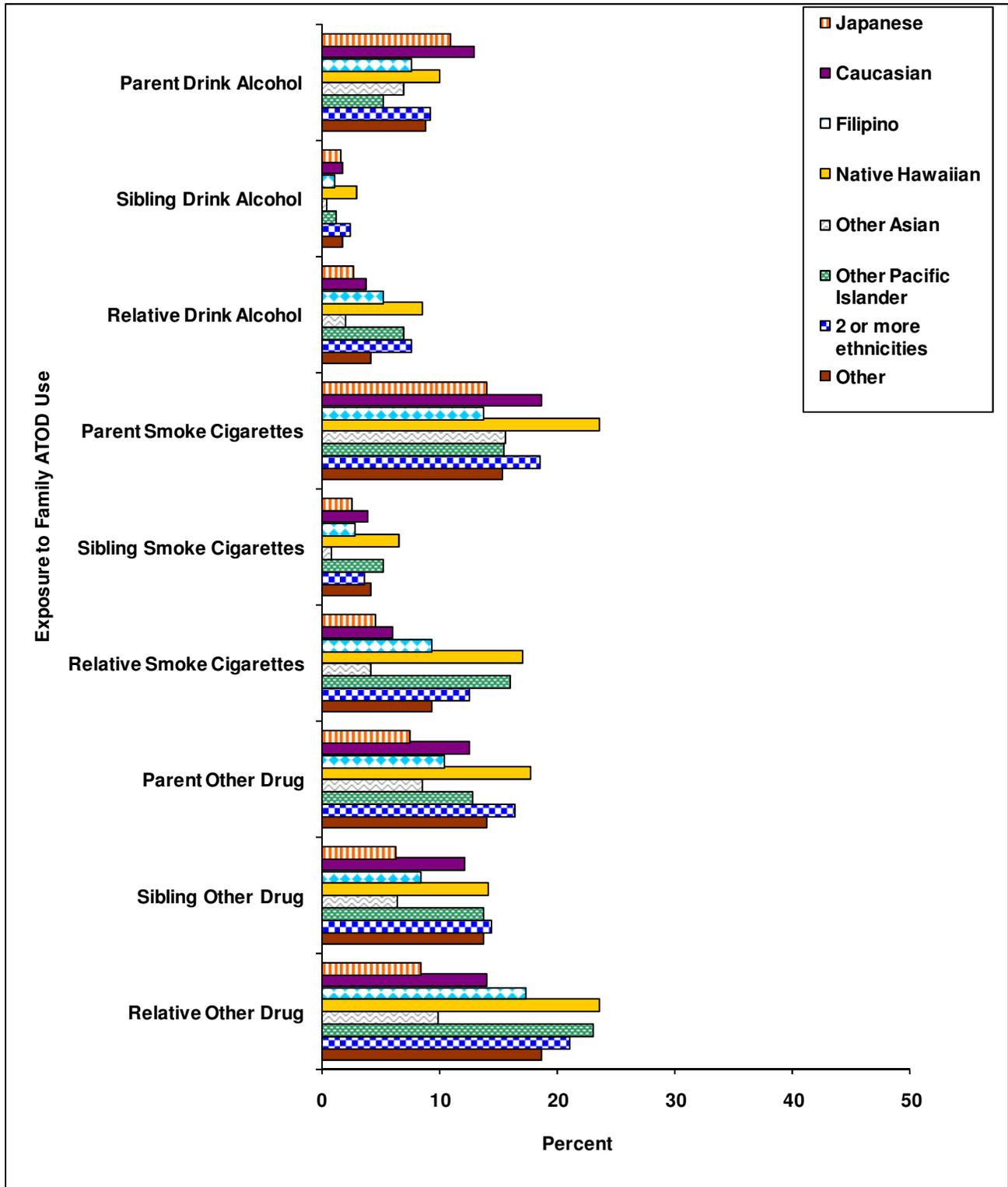


Figure 4c.4. Exposure to Family ATOD Use by Ethnicity, 2007 (Weighted Data)

Significant differences in exposure to family substance use were found between ethnicities with Native Hawaiians generally reporting the most exposure to family substance use. Eleven percent of Japanese students, 13% of Caucasian students, 7.7% of Filipino students, 10% of Native Hawaiian students, 7% of Other Asian students, 5.2% of Other Pacific Islander students, 9.2% of students of 2 or more ethnicities, and 8.8% of students of Other ethnicities reported daily exposure to parent drinking ( $\chi^2=183.1$ ,  $df=7$ ,  $p<.001$ ). Exposure to sibling drinking was reported the least with 1.6% of Japanese students, 1.7% of Caucasian students, 1.1% of Filipino students, 2.9% of Native Hawaiian students, 0.4% of Other Asian students, 1.3% of Other Pacific Islander students, 2.5% of students of 2 or more ethnicities, and 1.8% of students of Other ethnicities reporting daily exposure to sibling drinking ( $\chi^2=87.3$ ,  $df=7$ ,  $p<.001$ ). Nearly 3% of Japanese students, 3.8% of Caucasian students, 5.3% of Filipino students, 8.6% of Native Hawaiian students, 2% of Other Asian students, 7% of Other Pacific Islander students, 7.6% of students of 2 or more ethnicities, and 4.2% of students of Other ethnicities reported daily exposure to relative drinking ( $\chi^2=245.4$ ,  $df=7$ ,  $p<.001$ ).

Fourteen percent of Japanese students, 18.7% of Caucasian students, 13.8% of Filipino students, 23.6% of Native Hawaiian students, 15.7% of Other Asian students, 15.5% of Other Pacific Islander students, 18.6% of students of 2 or more ethnicities, and 15.3% of students of Other ethnicities reported daily exposure to parent smoking ( $\chi^2=234.1$ ,  $df=7$ ,  $p<.001$ ). Exposure to smoking by siblings was less than that for parents whereby 2.6% of Japanese students, 3.9% of Caucasian students, 2.9% of Filipino students, 6.5% of Native Hawaiian students, 0.9% of Other Asian students, 5.3% of Other Pacific Islander students, 3.7% of students of 2 or more ethnicities, and 4.2% of students of Other ethnicities reported exposure to siblings smoking ( $\chi^2=189.2$ ,  $df=7$ ,  $p<.001$ ). Nearly 5% of Japanese students, 6% of Caucasian students 9.4% of Filipino students, 17.1% of Native Hawaiian students, 4.2% of Other Asian students, 16.1% of Other Pacific Islander students, 12.6% of students of 2 or more ethnicities, and 9.4% of students of Other ethnicities reported exposure to relative smoking ( $\chi^2=657.6$ ,  $df=7$ ,  $p<.001$ ).

Seven and a half percent of Japanese students, 12.5% of Caucasian students, 10.5% of Filipino students, 17.8% of Native Hawaiian students, 8.6% of Other Asian students, 12.8% of Other Pacific Islander students, 16.4% of students of 2 or more ethnicities, and 14% of students of Other ethnicities reported exposure to parent use of other drugs ( $\chi^2=269.5$ ,  $df=7$ ,  $p<.001$ ). A little more than 6% of Japanese students, 12.1% of Caucasian students, 8.5% of Filipino students, 14.2% of Native Hawaiian students, 6.4% of Other Asian students, 13.8% of Other Pacific Islander students, 14.4% of students of 2 or more ethnicities, and 13.7% of students of Other ethnicities reported exposure to sibling use of other drugs ( $\chi^2=274.0$ ,  $df=7$ ,  $p<.001$ ). Nearly 8.5% of Japanese students, 14% of Caucasian students, 17.4% of Filipino students, 23.6% of Native Hawaiian students, 9.9% of Other Asian students, 23.1% of Other Pacific Islander students, 21.1% of students of 2 or more ethnicities, and 18.7% of students of Other ethnicities reported exposure to relative use of other drugs ( $\chi^2=517.7$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.2. Correlations Between Exposure to Family ATOD Use and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factors Family ATOD Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Parent Drink Alcohol	.19	.15	.08	.13	.13	.07
Sibling Drink Alcohol	.35	.36	.24	.27	.26	.23
Relative Drink Alcohol	.25	.22	.13	.16	.17	.10
Parent Smoke Cigarettes	.14	.13	.13	.10	.12	.08
Sibling Smoke Cigarettes	.25	.27	.28	.22	.21	.18
Relative Smoke Cigarettes	.19	.17	.15	.13	.14	.09
Parent Use Drugs	.15	.16	.12	.16	.18	.16
Sibling Use Drugs	.29	.33	.24	.32	.33	.30
Relative Use Drugs	.24	.25	.17	.24	.24	.22

The following general categories indicate a quick way of interpreting a correlation value: 0.0 to  $\pm 0.2$  Negligible;  $\pm 0.2$  to 0.4 Weak;  $\pm 0.4$  to 0.7 Moderate; and  $\pm 0.7$  and above Strong. Exposure to parental substance use did not correlate strongly with youth substance use. In general, exposure to sibling(s) using substances were mildly positively correlated ( $r=.21$  to  $.36$ ) with youth substance use with the strongest correlations between exposure to sibling alcohol use and monthly use alcohol use ( $r=.35$ ) and monthly binge drinking ( $r=.36$ ). Exposure to relative drinking and drug use were mildly positively correlated with monthly youth substance use ( $r=.22$  to  $.25$ ).

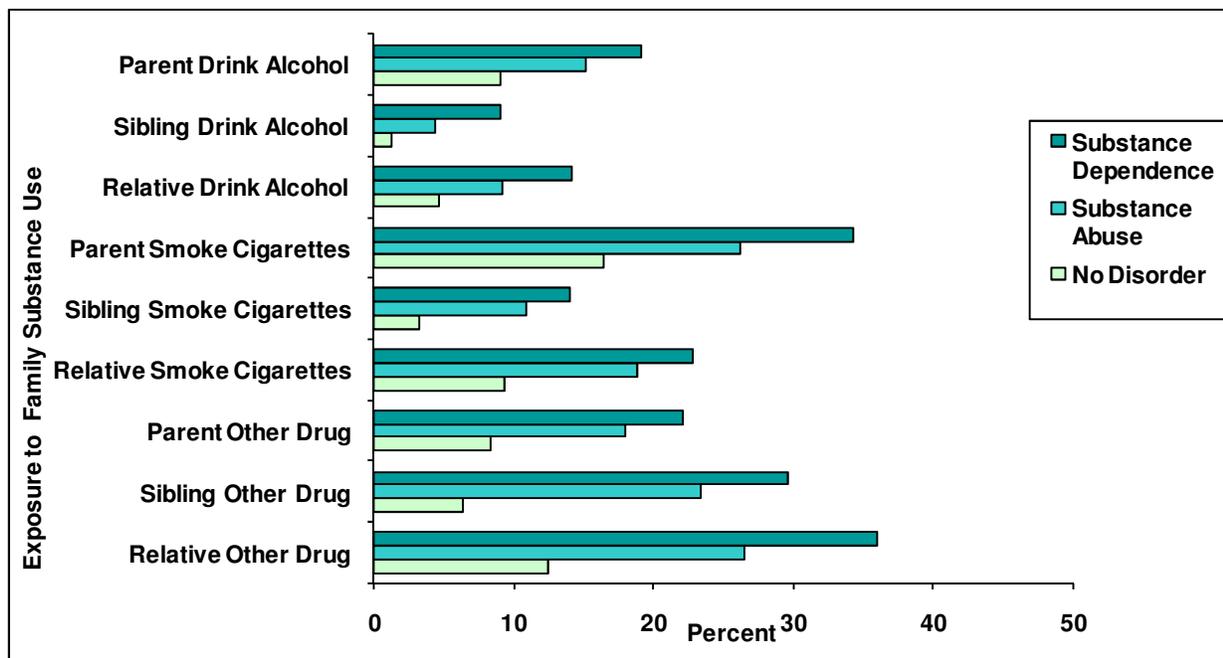


Figure 4c.5. Exposure to Family ATOD Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate that they had been exposed to family alcohol, tobacco and other drug use. On every item, significantly more youth with substance dependence than youth with substance abuse indicated daily exposure to alcohol use, daily exposure to cigarette smoking and any exposure to other drug use. Exposure rates for drinking alcohol and smoking cigarettes were highest for parents, then relatives, then siblings. Exposure to drinking of alcohol by parents, (19.1% dependence vs. 15.2% abuse vs. 9.0% none,  $X^2=140.4$ ,  $df=2$ ,  $p<.001$ ); by siblings, (9.0%

dependence vs. 4.4% abuse vs. 1.2% none,  $\chi^2=374.2$ ,  $df=2$ ,  $p<.001$ ); and by relatives (14.2% dependence vs. 9.2% abuse vs. 4.7% none,  $\chi^2=189.1$ ,  $df=2$ ,  $p<.001$ ) were lower than exposure to cigarette smoking by parents, (34.3% dependence vs. 26.2% abuse vs. 16.4% none,  $\chi^2=249.1$ ,  $df=2$ ,  $p<.001$ ); by siblings, (14.0% dependence vs. 10.9% abuse vs. 3.3% none,  $\chi^2=389.0$ ,  $df=2$ ,  $p<.001$ ); and by relatives (22.8% dependence vs. 18.8% abuse vs. 9.3% none,  $\chi^2=254.3$ ,  $df=2$ ,  $p<.001$ ). Exposure to other drugs was highest for relatives (36% dependence vs. 26.5% abuse vs. 12.5% none,  $\chi^2=536.5$ ,  $df=2$ ,  $p<.001$ ).

### POOR FAMILY SUPERVISION

---

Poor Family Supervision was measured through a 6-item, 4-point scale that assessed parents' failure to monitor their children. Students responded to the following six items: *My parents ask me if I've gotten my homework done; When I am not at home, one of my parents knows where I am and who I am with; My parents would know if I didn't come home on time; My parents want me to call if I'm going to be late getting home; The rules in my family are clear; and My family has clear rules about alcohol and drug use.* Response choices were: (1) *YES! Definitely true for you*; (2) *yes, mostly true for you*; (3) *no, mostly not true for you*; and (4) *NO! Definitely not true for you*. Respondents that indicated *no, mostly not true for you* or *NO! Definitely not true for you* were categorized as receiving poor family supervision for that item. Respondents that indicated *no, mostly not true for you* or *NO! Definitely not true for you* were categorized as lacking parental sanctions for each of the listed family supervision items.

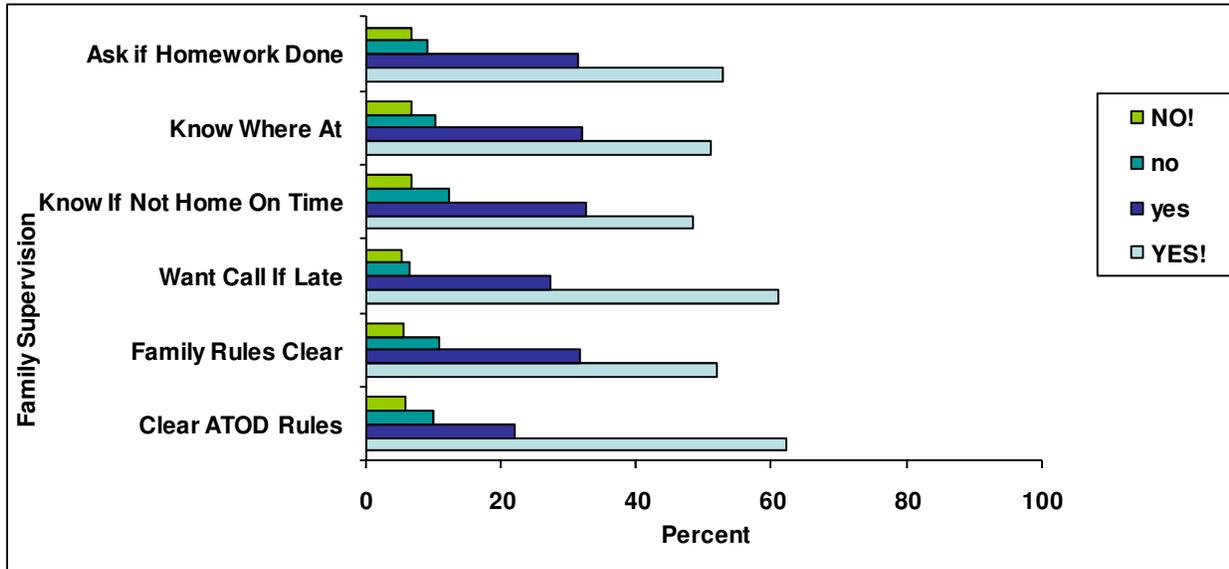


Figure 4c.6. Family Supervision, 2007 (Weighted Data)

Ten to nineteen percent of students responded that their families lacked supervision on at least one of the items. The least supervision was for knowing if youth had come home on time. The most supervision was reported for having clear rules about alcohol and drug use and wanting a call if youth were going to be late getting home.

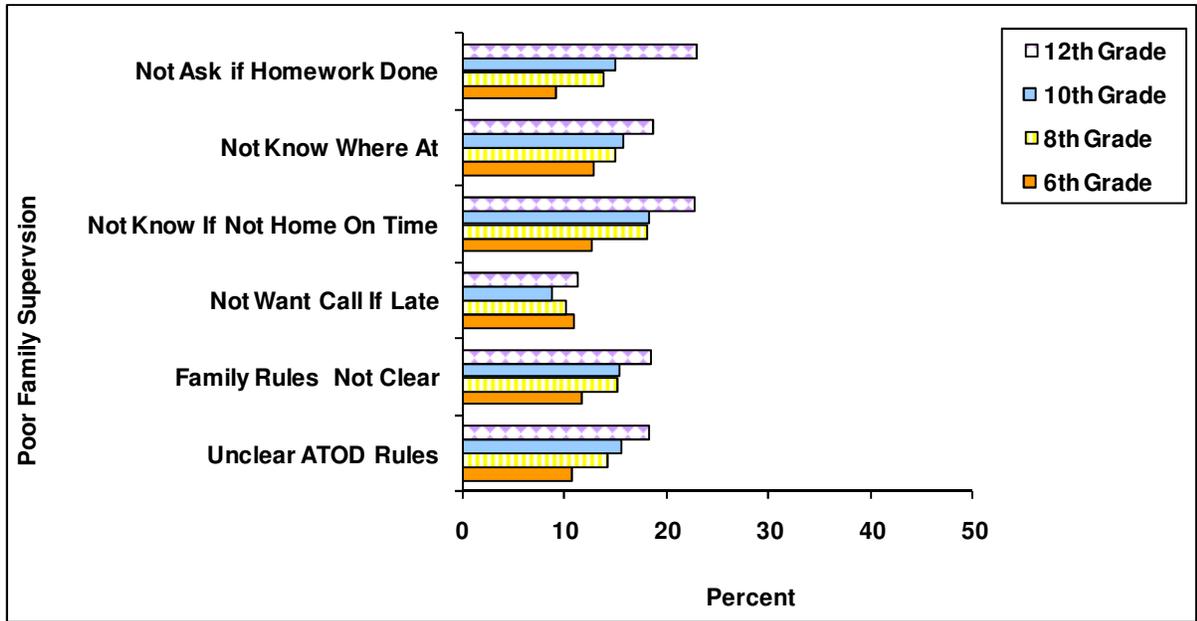


Figure 4c.7. Poor Family Supervision by Grade Level, 2007 (Weighted Data)

Generally, more youth reported poor family supervision as grade level increased with 12<sup>th</sup> graders reporting the highest levels. Statistically significant differences were found for all poor family supervision items by grade level. Students received the least supervision on homework with 23% of 12<sup>th</sup> graders, 15.1% of 10<sup>th</sup> graders, 13.9% of 8<sup>th</sup> graders, and 9.2% of 6<sup>th</sup> graders indicated that their parents had not asked if they'd gotten their homework done ( $\chi^2=525.1$ ,  $df=3$ ,  $p<.001$ ). Nearly 19% of 12<sup>th</sup> graders, 15.7% of 10<sup>th</sup> graders, 15.0% of 8<sup>th</sup> graders, and 12.9% of 6<sup>th</sup> graders indicated that their parents did not know where and who they were with when they were not at home ( $\chi^2=94.3$ ,  $df=3$ ,  $p<.001$ ). Approximately 23% of 12<sup>th</sup> graders, 18.4% of 10<sup>th</sup> graders, 18.1% of 8<sup>th</sup> graders, and 12.6% of 6<sup>th</sup> graders reported that their parents would not know if they didn't come home on time ( $\chi^2=263.9$ ,  $df=3$ ,  $p<.001$ ). Just over 11% of 12<sup>th</sup> graders, 8.9% of 10<sup>th</sup> graders, 10.1% of 8<sup>th</sup> graders, and 10.9% of 6<sup>th</sup> graders indicated that their parents want them to call if they were going to be late getting home ( $\chi^2=22.6$ ,  $df=3$ ,  $p<.001$ ). When it came to rules, 18.6% of 12<sup>th</sup> graders, 15.4% of 10<sup>th</sup> graders, 15.2% of 8<sup>th</sup> graders, and 11.7% of 6<sup>th</sup> graders indicated that the rules in their family were clear ( $\chi^2=135.8$ ,  $df=3$ ,  $p<.001$ ); and 18.4% of 12<sup>th</sup> graders, 15.6% of 10<sup>th</sup> graders, 14.2% of

8<sup>th</sup> graders, and 10.7% of 6<sup>th</sup> graders indicated that their family has clear rules about alcohol and drug use ( $\chi^2=182.0$ ,  $df=3$ ,  $p<.001$ ).

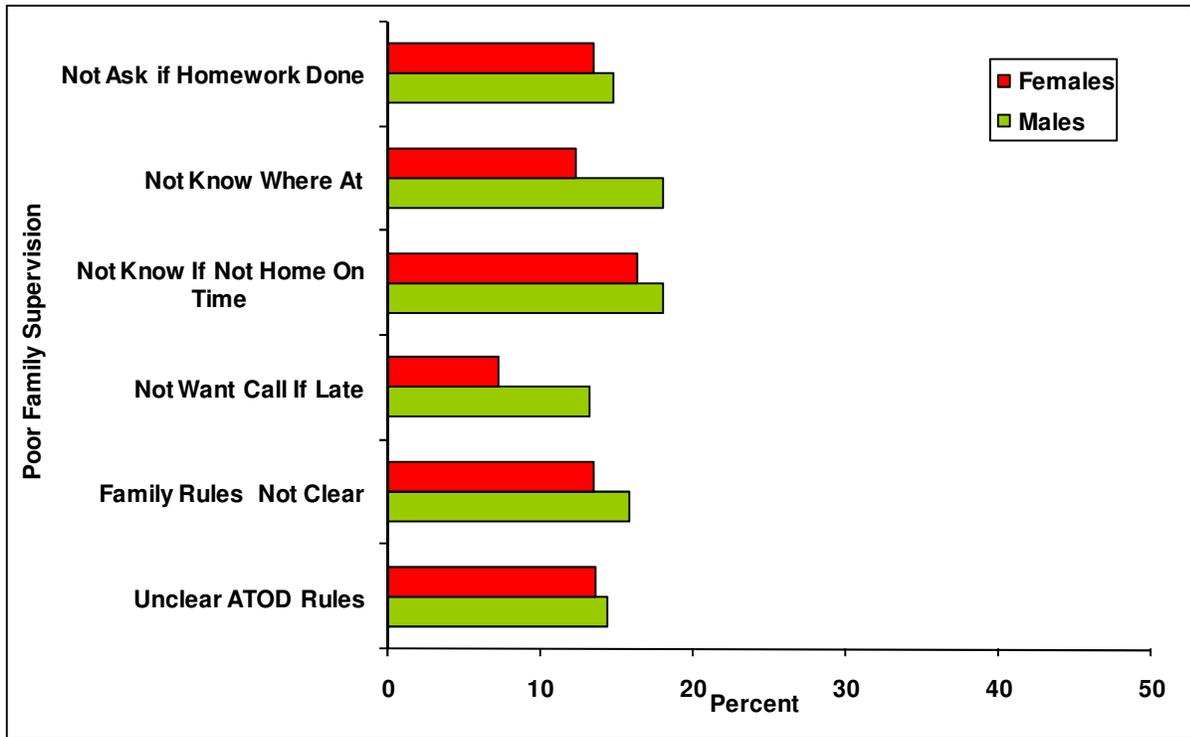


Figure 4c.8. Poor Family Supervision by Gender, 2007 (Weighted Data)

Approximately 14% of males and females did not have clear rules about alcohol and drug use in their family. With the exception of unclear family rules about alcohol and drug use, significantly more males than females were not asked about homework (14.8% vs. 13.5%,  $\chi^2=8.52$ ,  $df=1$ ,  $p=.004$ ); reported parent didn't know where they were or who they were with (18.0% vs. 12.3%,  $\chi^2=167.0$ ,  $df=1$ ,  $p<.001$ ); stated their parents didn't know if they came home on time (18.0% vs. 16.3%,  $\chi^2=14.1$ ,  $df=1$ ,  $p<.001$ ); indicated that their parents wanted them to call if they were going to be late (13.3% vs. 7.3%,  $\chi^2=261.3$ ,  $df=1$ ,  $p<.001$ ); and reported that the rules in their family were not clear (15.8% vs. 13.5%,  $\chi^2=28.0$ ,  $df=1$ ,  $p<.001$ ).

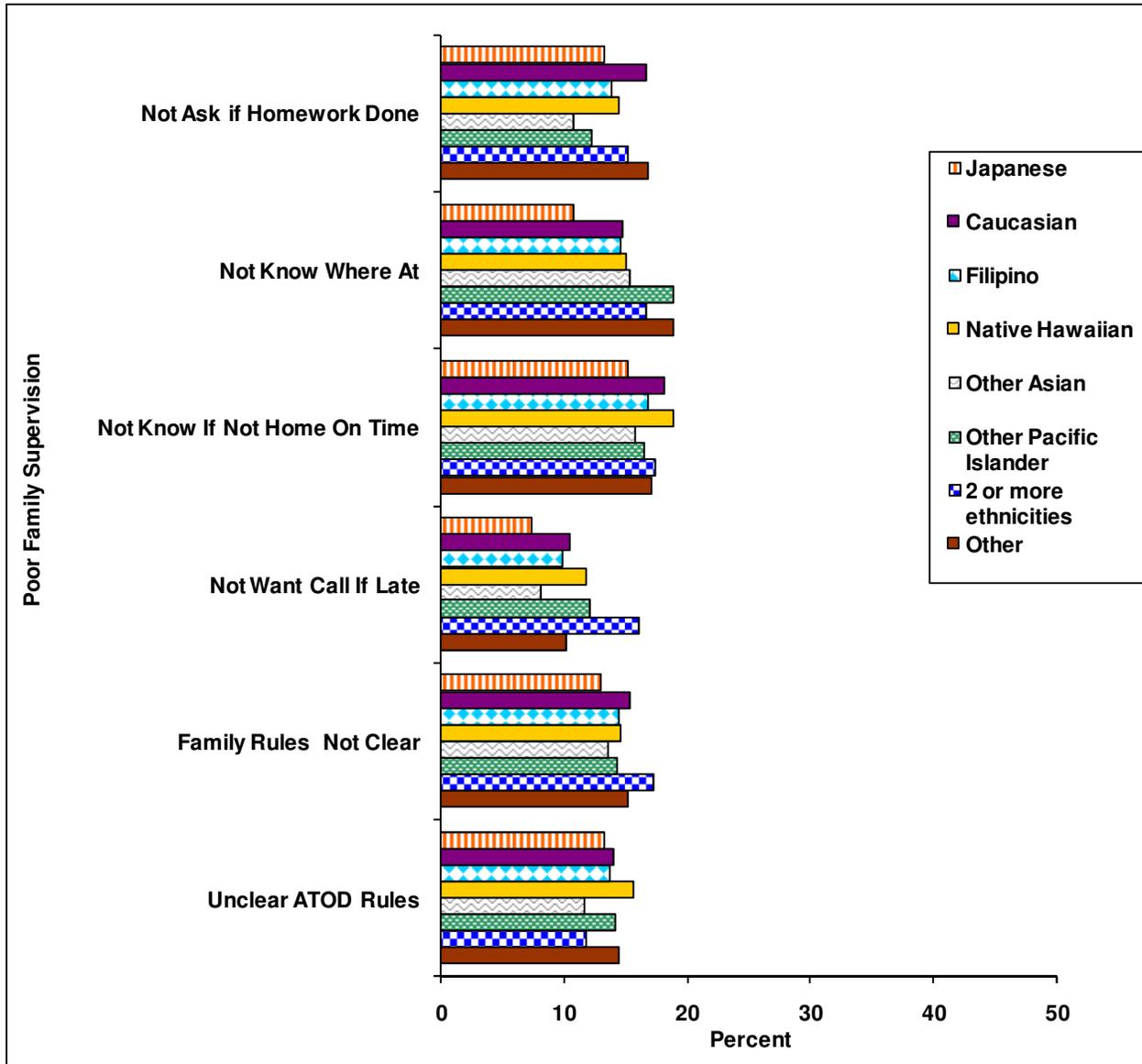


Figure 4c.9. Poor Family Supervision by Ethnicity, 2007 (Weighted Data)

Students of Other ethnicities (16.8%) reported that their parents do not ask them if they've gotten their homework done more than any other ethnicity. As far as other ethnicities, 13.4% of Japanese students, 16.6% of Caucasian students, 13.9% of Filipino students, 14.5% of Native Hawaiian students, 10.9% of Other Asian students, 12.3% of Other Pacific Islander students, and 15.3% of students of 2 or more ethnicities reported that their parents do not ask them if they've done their homework ( $\chi^2=61.8$ ,  $df=7$ ,  $p<.001$ ).

Other Pacific Islander students reported that their parents do not know where they are or who they are with when they're not home (19%) more than all other ethnicities. Nearly 11% of Japanese students, 14.8% of Caucasian students, 14.7% of Filipino students, 15.1% of Native Hawaiian students, 15.4% of Other Asian students, 16.8% of students of 2 or more ethnicities, and 18.9% of students of Other ethnicities reported that their parents do not know where they are or who they are with when they're not home ( $\chi^2=103.6$ ,  $df=7$ ,  $p<.001$ ).

Native Hawaiian students reported that their parents wouldn't know if they didn't come home on time (18.9%) more than any other ethnicity. Slightly more than 15% of Japanese students, 18.1% of Caucasian students, 16.9% of Filipino students, 15.8% of Other Asian students, 16.6% of Other Pacific Islander students, 17.5% of students of 2 or more ethnicities, and 17.1% of students of Other ethnicities reported that their parents would not know if they didn't come home on time ( $\chi^2=25.2$ ,  $df=7$ ,  $p=.001$ ).

More students of 2 or more ethnicities than any other ethnic group reported that their parents don't want them to call if they are going to be home late (16.1%). Nearly 7.5% of Japanese students, 10.5% of Caucasian students, 9.9% of Filipino students, 11.8% of Native Hawaiian students, 8.2% of Other Asian students, 12.1% of Other Pacific Islander students, and 10.2% of students of Other ethnicities reported that their parents don't want them to call if they are going to be home late ( $\chi^2=87.5$ ,  $df=7$ ,  $p<.001$ ).

Similarly, more students of 2 or more ethnicities than any other ethnic group reported that the rules in their family are not clear (17.3%). Thirteen percent of Japanese students, 15.4% of Caucasian students, 14.5% of Filipino students, 14.6% of Native Hawaiian students, 13.7% of Other Asian students, 14.4% of Other Pacific Islander students, and 15.2% of students of Other ethnicities reported that rules in their family are not clear ( $\chi^2=15.7$ ,  $df=7$ ,  $p=.028$ ).

Native Hawaiian students reported that their family does not have clear rules about alcohol and drug use more than any other ethnic group (15.7%). Slightly more than 13% of Japanese students, 14% of

Caucasian students, 13.8% of Filipino students, 11.7% of Other Asian students, 14.3% of Other Pacific Islander students, 11.9% of students of 2 or more ethnicities, and 14.4% of students of Other ethnicities reported that their family does not have clear rules about alcohol and drug use ( $\chi^2=25.6$ ,  $df=7$ ,  $p=.001$ ).

Table 4c.3. Correlations Between Poor Family Supervision and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factors <b>Poor Family Supervision</b>	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Not Ask If Homework Done	.14	.15	.12	.14	.15	.12
Not Know Where At	.16	.15	.11	.16	.15	.13
Not Know If Not Home On Time	.16	.15	.12	.14	.15	.13
Not Want Call If Late	.14	.15	.11	.13	.14	.13
Family Rules Not Clear	.13	.12	.10	.14	.13	.12
Unclear ATOD Rules	.19	.19	.13	.18	.17	.14

Overall, poor family supervision was not correlated with youth substance use. Unclear family rules about alcohol, tobacco, and other drug use approached mildly positive correlations for monthly alcohol use ( $r=.19$ ), monthly binge drinking ( $r=.19$ ), and monthly marijuana use ( $r=.18$ ).

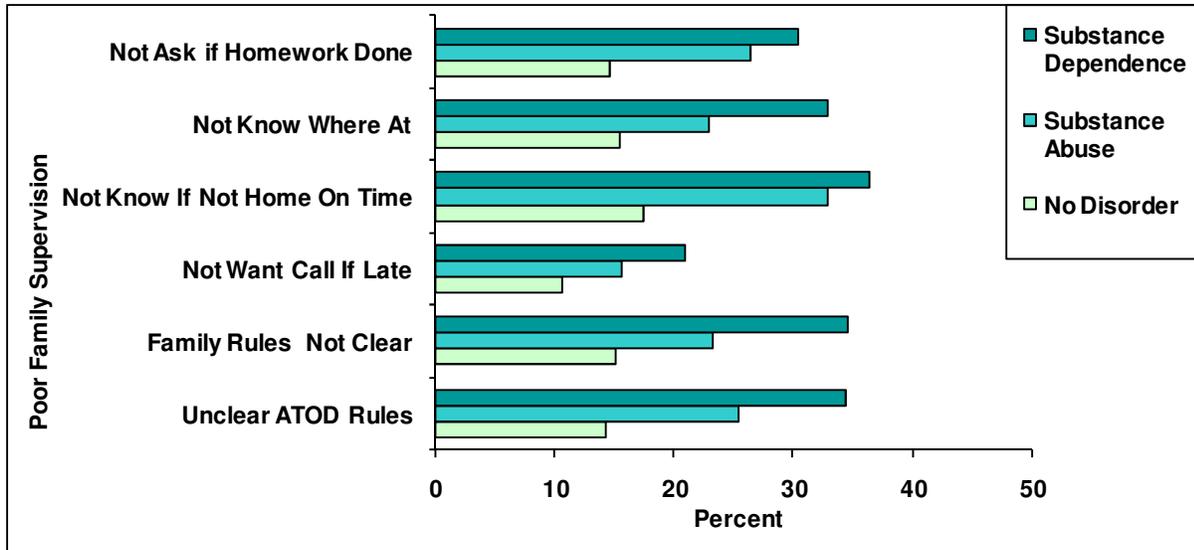


Figure 4c.10. Poor Family Supervision by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate that they had poor family supervision. On every item, significantly more youth with substance dependence than youth with substance abuse indicated poor family supervision. For parents not asking about homework, 30.5% of youth met dependence criteria (vs. 26.5% abuse vs. 14.7% none;  $\chi^2=251.5$ ,  $df=2$ ,  $p<.001$ ). For parents not knowing where and who they are with, 33.0% of youth met dependence criteria (vs. 22.9% abuse vs. 15.5% none;  $\chi^2=230.3$ ,  $df=2$ ,  $p<.001$ ). For parents not knowing if they get home on time, 36.5% of youth met dependence criteria (vs. 32.9% abuse vs. 17.5% none;  $\chi^2=336.3$ ,  $df=2$ ,  $p<.001$ ). For parents not wanting a call if they will be late, 21.0% of youth met dependence criteria (vs. 15.6% abuse vs. 10.6% none;  $\chi^2=115.8$ ,  $df=2$ ,  $p<.001$ ). For families with rules that are not clear, 34.6% of youth met dependence criteria (vs. 23.3% abuse vs. 15.1% none;  $\chi^2=287.2$ ,  $df=2$ ,  $p<.001$ ). For families with unclear rules about alcohol and drug use, 34.5% of youth met dependence criteria (vs. 25.5% abuse vs. 14.3% none;  $\chi^2=350.5$ ,  $df=2$ ,  $p<.001$ ).

## LACK OF PARENTAL SANCTIONS FOR ANTISOCIAL BEHAVIORS

Lack of parental sanctions for antisocial behaviors (ASBs) was measured through a 5-item, 3-point scale that asked students if they would be in trouble if their parents caught them smoking cigarettes; drinking alcohol; smoking marijuana; using other illegal drugs; or skipping school. The questions used the following response foils, which were reversed so that the higher number represented a lack of parental sanctions: (1) *No, not really*; (2) *Yes, a little*; and (3) *Yes, a lot*. Respondents that indicated *No, not really* were categorized as lacking parental sanctions for each of the listed antisocial behaviors. The “Lack of Parental Sanctions for ASBs,” conceptually similar to the CSAP core measurement scale of “Poor Family Discipline,” has been used in previous Hawai’i survey efforts and was one of the strongest predictors of substance use (Pearson, 2004).

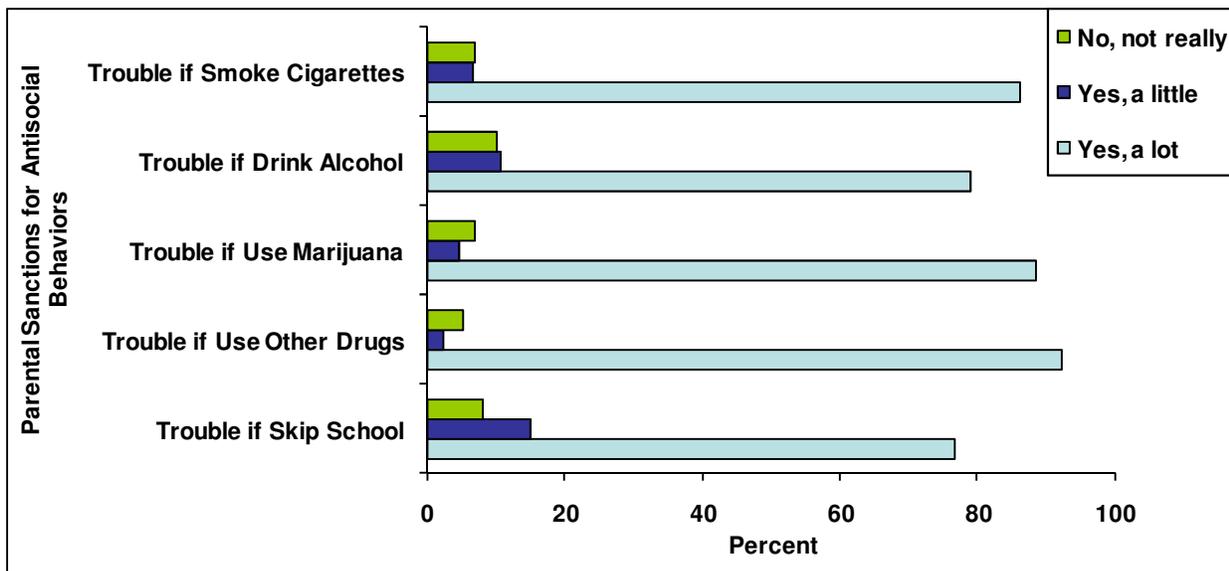


Figure 4c.11. Parental Sanctions for Antisocial Behaviors, 2007 (Weighted Data)

One in 10 students (10.2%) reported that they would not be in trouble if their parents caught them drinking alcohol. Only getting in trouble for skipping school approached this number (8.2%). By comparison, 5.3% of students reported that they would not be in trouble for using illegal drugs, 6.9% said

they would not be in trouble for smoking marijuana, and 7.1% said they would not be in trouble for smoking cigarettes.

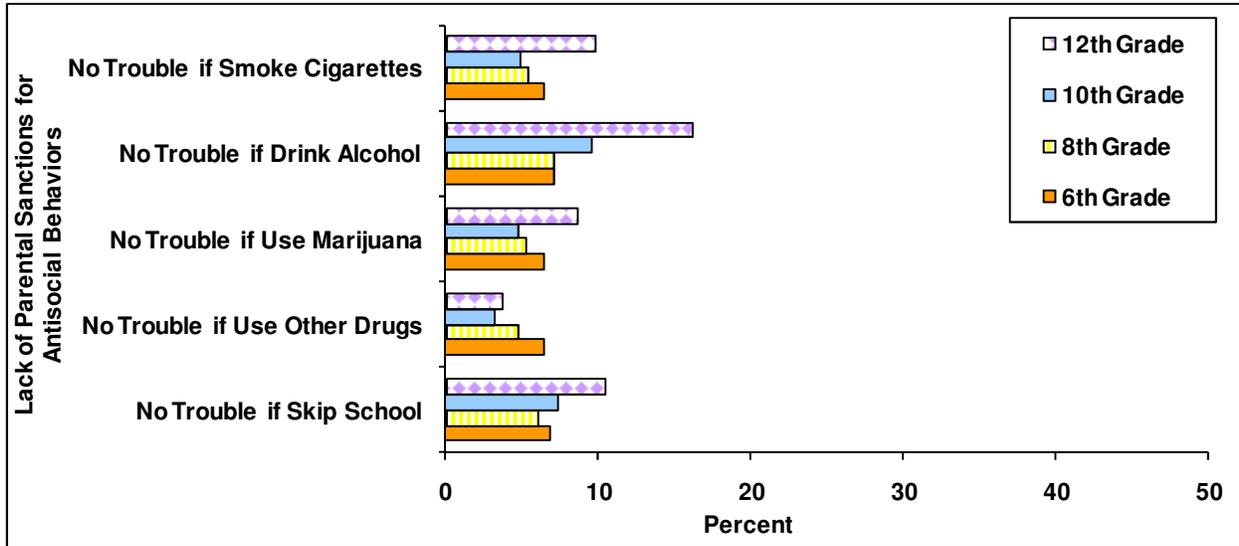


Figure 4c.12. Lack of Parental Sanctions for Antisocial Behaviors by Grade Level, 2007 (Weighted Data)

Generally, more 12<sup>th</sup> graders reported lack of parental sanctions for antisocial behaviors with the exception of not getting into trouble for using drugs. Statistically significant differences were found for all lack of parental sanctions items by grade level. Students received the least parental sanctions for drinking alcohol with 16.2% of 12<sup>th</sup> graders, 9.6% of 10<sup>th</sup> graders, 7.1% of 8<sup>th</sup> graders, and 7.1% of 6<sup>th</sup> graders indicated that they would not be in trouble if they drank alcohol ( $\chi^2=397.8$ ,  $df=3$ ,  $p<.001$ ). Nearly 10% of 12<sup>th</sup> graders, 4.9% of 10<sup>th</sup> graders, 5.4% of 8<sup>th</sup> graders, and 6.5% of 6<sup>th</sup> graders indicated that they would not be in trouble if they smoked cigarettes ( $\chi^2=135.0$ ,  $df=3$ ,  $p<.001$ ). Nearly 9% of 12<sup>th</sup> graders, 4.8% of 10<sup>th</sup> graders, 5.3% of 8<sup>th</sup> graders, and 6.5% of 6<sup>th</sup> graders reported that they would not be in trouble if they smoked marijuana ( $\chi^2=85.5$ ,  $df=3$ ,  $p<.001$ ). Approximately 3.7% of 12<sup>th</sup> graders, 3.2% of 10<sup>th</sup> graders, 4.7% of 8<sup>th</sup> graders, and 6.5% of 6<sup>th</sup> graders indicated that they would not be in trouble if their parents caught them using other illegal drugs ( $\chi^2=101.7$ ,  $df=3$ ,  $p<.001$ ). When it came to skipping school, 10.5% of 12<sup>th</sup>

graders, 7.4% of 10<sup>th</sup> graders, 6.1% of 8<sup>th</sup> graders, and 6.8% of 6<sup>th</sup> graders indicated that they would not be in trouble ( $\chi^2=95.9$ ,  $df=3$ ,  $p<.001$ ).

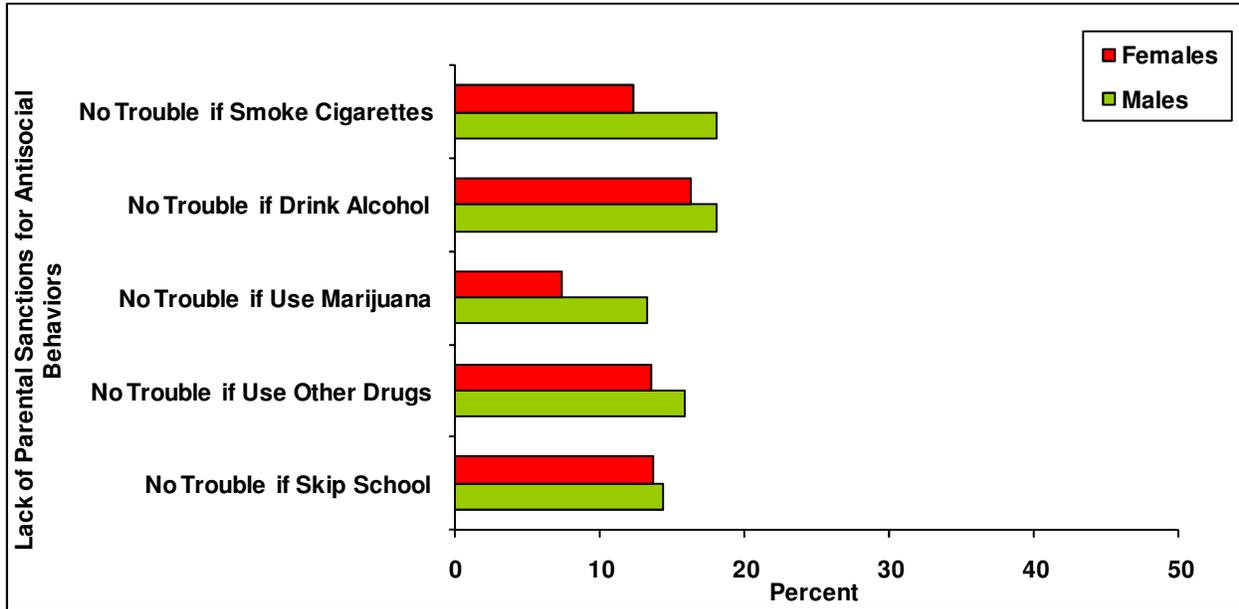


Figure 4c.13. Lack of Parental Sanctions for Antisocial Behaviors by Gender, 2007 (Weighted Data)

Males had more lack of parental sanctions for antisocial behaviors than females. Significantly more males than females would not be in trouble for smoking cigarettes (8.2% vs. 4.7%,  $\chi^2=140.8$ ,  $df=1$ ,  $p<.001$ ); drinking alcohol (10.6% vs. 8.0%,  $\chi^2=55.5$ ,  $df=1$ ,  $p<.001$ ); smoking marijuana (8.1% vs. 4.5%,  $\chi^2=151.0$ ,  $df=1$ ,  $p<.001$ ); using other illegal drugs (6.6% vs. 2.9%,  $\chi^2=201.4$ ,  $df=1$ ,  $p<.001$ ); and skipping school (8.6% vs. 6.3%,  $\chi^2=49.9$ ,  $df=1$ ,  $p<.001$ ).

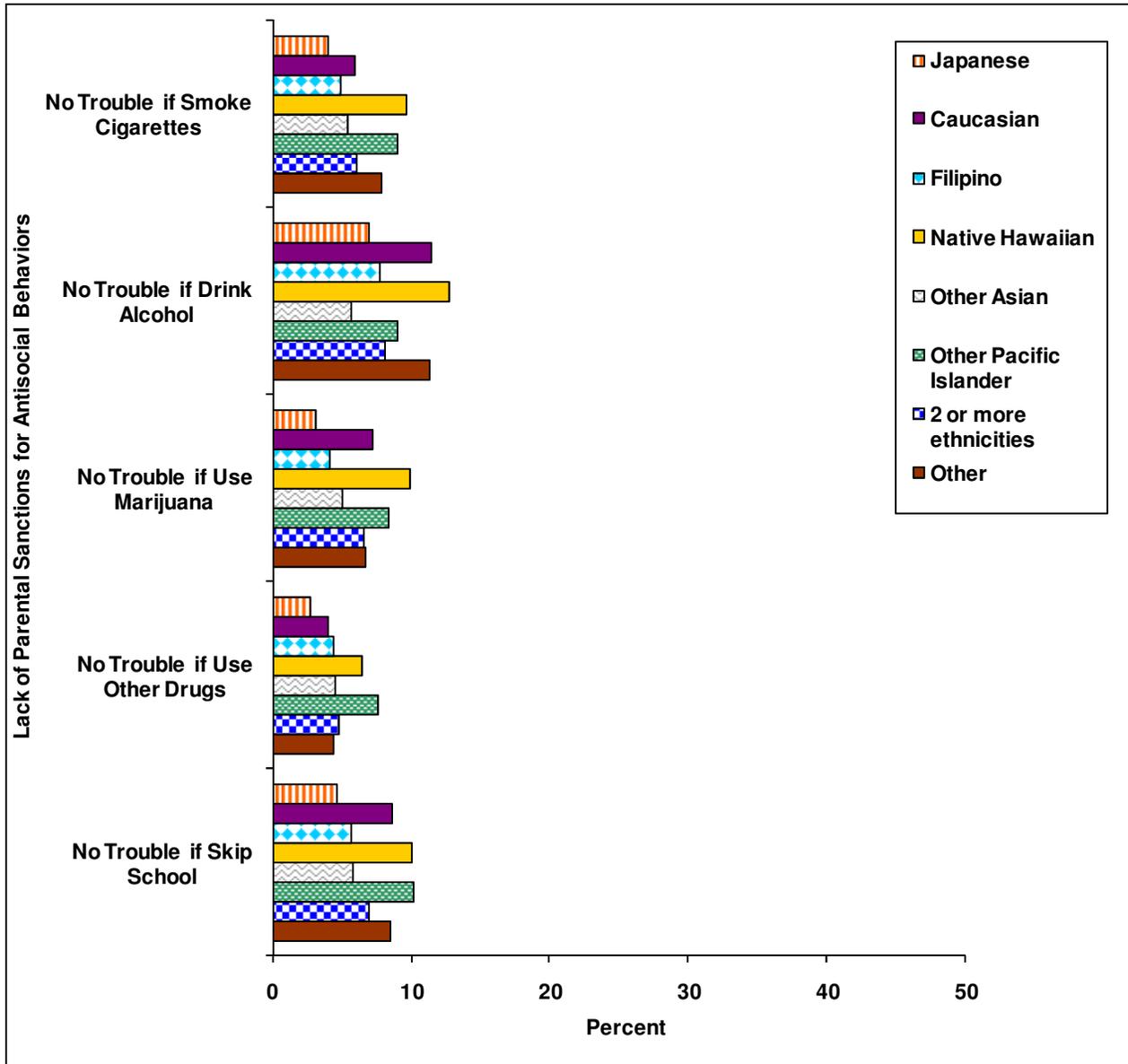


Figure 4c.14. Lack of Parental Sanctions for Antisocial Behaviors by Ethnicity, 2007 (Weighted Data)

Significant differences between ethnicities occurred for lack of parental sanctions for antisocial behavior. Generally, either Native Hawaiian students or Other Pacific Islander students reported greater lack of parental sanctions for antisocial behaviors than other ethnic groups. Slightly more than 4% of Japanese students, 6% of Caucasian students, 5% of Filipino students, 9.7 % of Native Hawaiian students, 5.5% of Other Asian students, 9% of Other Pacific Islander students, 6.1% of students of 2 or more

ethnicities, and 7.9% of students of Other ethnicities reported that they would not be in trouble if their parents caught them smoking cigarettes ( $\chi^2=173.5$ ,  $df=7$ ,  $p<.001$ ).

Seven percent of Japanese students, 11.5% of Caucasian students, 7.8% of Filipino students, 12.7 % of Native Hawaiian students, 5.7% of Other Asian students, 9.1% of Other Pacific Islander students, 8.1% of students of 2 or more ethnicities, and 11.4% of students of Other ethnicities reported that they would not be in trouble if their parents caught them drinking alcohol ( $\chi^2=172.4$ ,  $df=7$ ,  $p<.001$ ).

Slightly more than 3% of Japanese students, 7.2% of Caucasian students, 4.2% of Filipino students, 9.9 % of Native Hawaiian students, 5.1% of Other Asian students, 8.4% of Other Pacific Islander students, 6.6% of students of 2 or more ethnicities, and 6.7% of students of Other ethnicities reported that they would not be in trouble if their parents caught them smoking marijuana ( $\chi^2=239.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 3% of Japanese students, 4% of Caucasian students, 4.4% of Filipino students, 6.5 % of Native Hawaiian students, 4.5% of Other Asian students, 7.7% of Other Pacific Islander students, 4.8% of students of 2 or more ethnicities, and 4.4% of students of Other ethnicities reported that they would not be in trouble if their parents caught them using other illegal drugs ( $\chi^2=124.4$ ,  $df=7$ ,  $p<.001$ ).

Nearly 5% of Japanese students, 8.6% of Caucasian students, 5.7% of Filipino students, 10% of Native Hawaiian students, 5.8% of Other Asian students, 10.2% of Other Pacific Islander students, 7% of students of 2 or more ethnicities, and 8.5% of students of Other ethnicities reported that they would not be in trouble if their parents caught them skipping school ( $\chi^2=164.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.4. Correlations Between Lack of Parental Sanctions for Antisocial Behaviors and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factors Lack of Parental Sanctions for Antisocial Behaviors	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
No Trouble If Smoke Cigarettes	.24	.25	.28	.26	.25	.18
No Trouble If Drink Alcohol	.33	.31	.23	.24	.25	.18
No Trouble If Use Marijuana	.23	.25	.18	.31	.25	.19
No Trouble If Use Other Drugs	.10	.12	.11	.13	-.14	.15
No Trouble If Skip School	.20	.20	.16	.19	.20	.14

Overall, lack of parental sanctions for antisocial behaviors was mildly negatively correlated with youth substance use with the strongest correlations between not getting in trouble for drinking alcohol and monthly alcohol use ( $r=.33$ ) and monthly binge drinking ( $r=.31$ ). Not getting in trouble for using marijuana was also mildly positively correlated with monthly marijuana use ( $r=.31$ ).

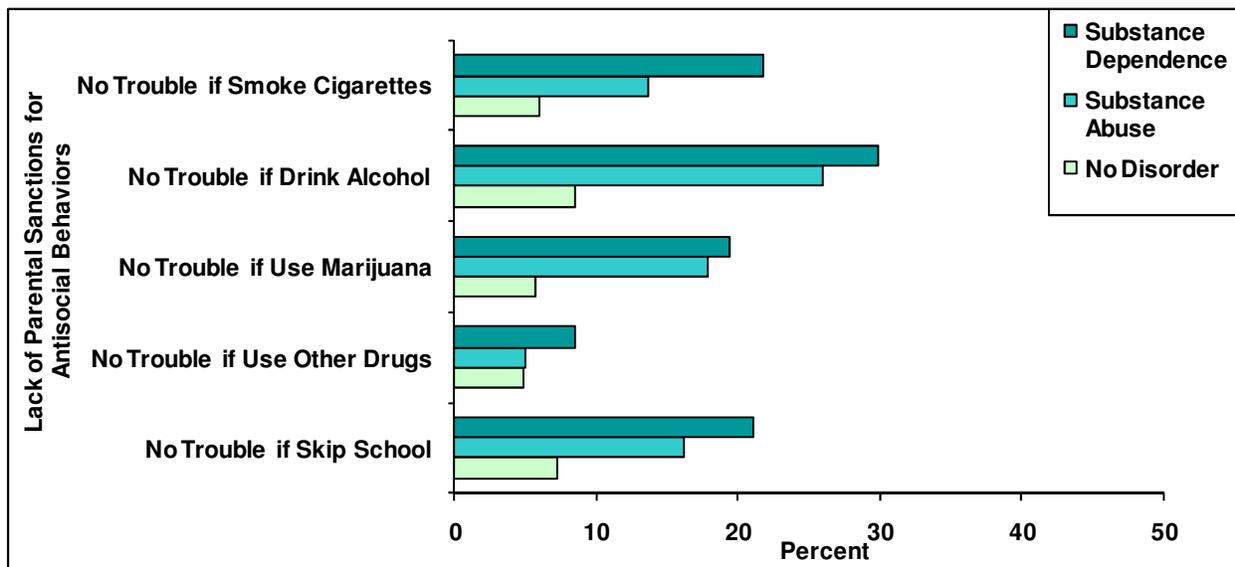


Figure 4c.15. Lack of Parental Sanctions for Antisocial Behaviors by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate that they had lack of parental sanctions. On every item, significantly more youth with substance dependence than youth with substance abuse indicated lack of parental sanctions. For lack of sanctions for smoking cigarettes, 21.7% of youth met dependence criteria (vs. 13.6% abuse vs. 6.0% none;  $\chi^2=406.7$ ,  $df=2$ ,  $p<.001$ ). For lack of sanctions for drinking alcohol, 29.9% of youth met dependence criteria (vs. 26.0% abuse vs. 8.5% none;  $\chi^2=734.0$ ,  $df=2$ ,  $p<.001$ ). For lack of sanctions for smoking marijuana, 19.4% of youth met dependence criteria (vs. 17.8% abuse vs. 5.7% none;  $\chi^2=457.3$ ,  $df=2$ ,  $p<.001$ ). For lack of sanctions for using other drugs, 8.5% of youth met dependence criteria (vs. 5.0% abuse vs. 4.9% none;  $\chi^2=25.3$ ,  $df=2$ ,  $p<.001$ ). For lack of sanctions for skipping school, 21.0% of youth met dependence criteria (vs. 16.2% abuse vs. 7.2% none;  $\chi^2=319.2$ ,  $df=2$ ,  $p<.001$ ).

## PARENTAL ATTITUDES

---

Parental Attitudes assessments included substance use and antisocial behaviors. The Parental Attitudes Favorable Toward ATOD Use risk factor was assessed through a 3-item, 4-point scale that asked students how wrong they think their parents feel it would be for them to drink alcohol regularly, smoke cigarettes, and smoke marijuana. Response choices were (1) *Very wrong*, (2) *Wrong*, (3) *A little bit wrong*, and (4) *Not at all wrong*. Attitudes were considered favorable for responses *A little bit wrong* and *Not at all wrong*.

The Parental Attitudes Favorable Toward Antisocial Behaviors (ASB) risk factor was measured by asking students how wrong they think their parents feel it would be for them to steal anything worth more than \$5, draw graffiti on buildings, and pick a fight with someone. Response choices for the 3-item, 4-point scale were: (1) *Very wrong*; (2) *Wrong*; (3) *A little bit wrong*; and (4) *Not at all wrong*. Attitudes were considered favorable for responses *A little bit wrong* and *Not at all wrong*.

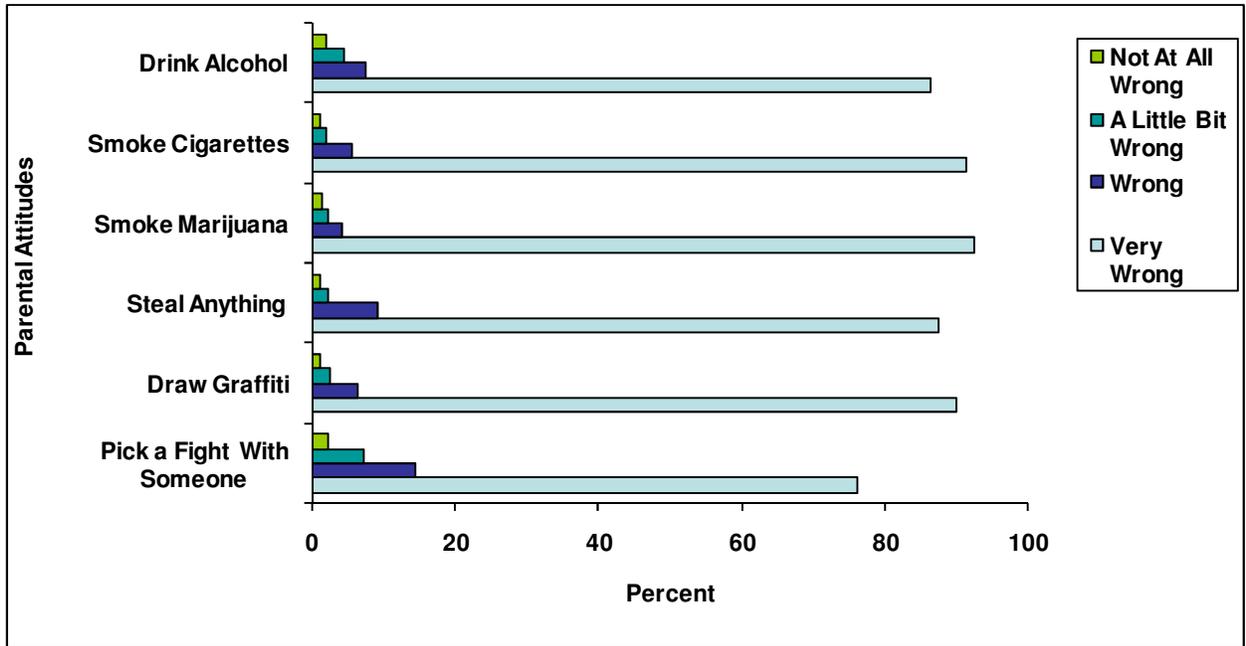


Figure 4c.16. Parental Attitudes Towards Substance Use and Antisocial Behaviors, 2007 (Weighted Data)

Few youth endorsed responses of *Not at all wrong* or *A little bit wrong*, indicating the vast majority of students' parents do not have favorable attitudes towards substance use and antisocial behaviors. However, nearly 10% endorsed picking a fight with someone and 6.3% endorsed drinking alcohol regularly.

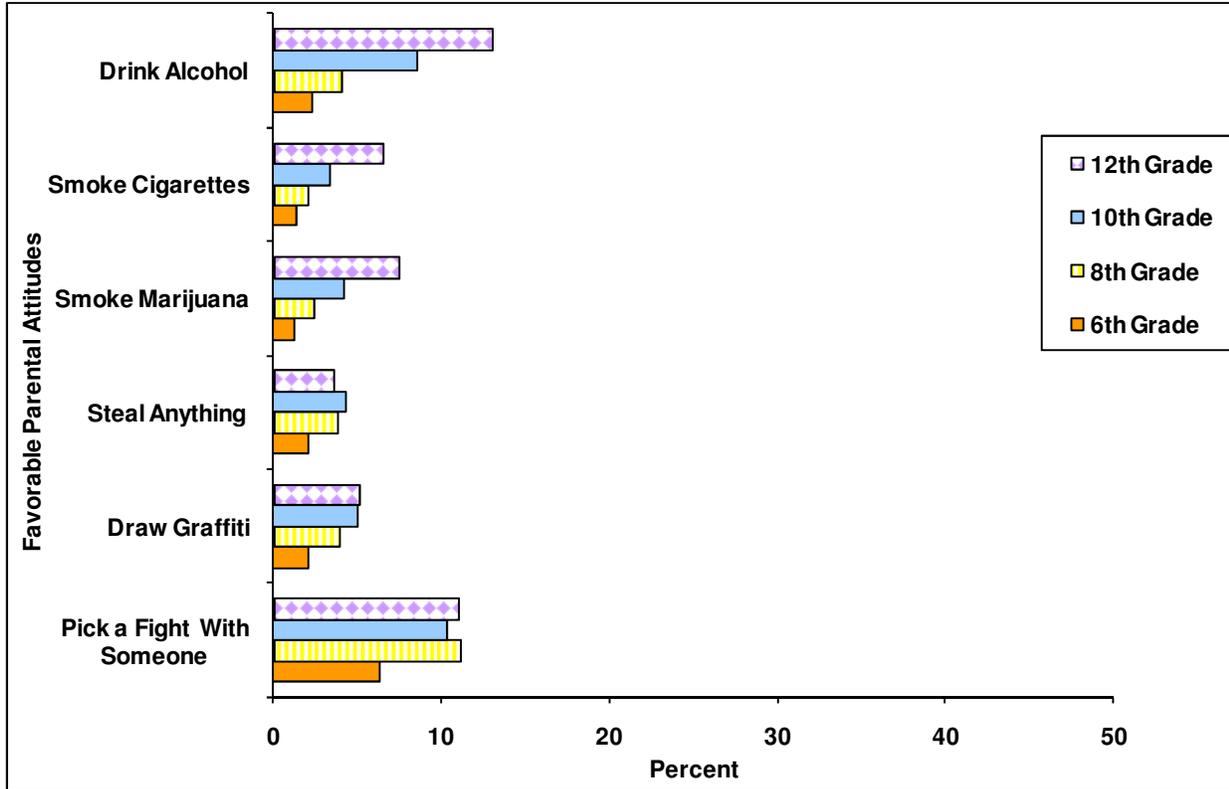


Figure 4c.17. Parental Attitudes Favorable Towards Substance Use and Antisocial Behavior by Grade Level, 2007 (Weighted Data)

Overall, more youth reported favorable parental attitudes as grade level increased with 12<sup>th</sup> graders reporting the highest levels. Grade level differences were greater for substance use than antisocial behavior. Thirteen percent of 12<sup>th</sup> graders, 8.6% of 10<sup>th</sup> graders, 4.1% of 8<sup>th</sup> graders, and 2.3% of 6<sup>th</sup> graders indicated that their parents had favorable attitudes toward drinking alcohol ( $\chi^2=711.2$ ,  $df=3$ ,  $p<.001$ ). Six and a half percent of 12<sup>th</sup> graders, 3.4% of 10<sup>th</sup> graders, 2.1% of 8<sup>th</sup> graders, and 1.4% of 6<sup>th</sup> graders indicated that their parents had favorable attitudes toward smoking cigarettes ( $\chi^2=294.2$ ,  $df=3$ ,  $p<.001$ ). Seven and a half percent of 12<sup>th</sup> graders, 4.2% of 10<sup>th</sup> graders, 2.4% of 8<sup>th</sup> graders, and 1.3% of 6<sup>th</sup> graders indicated that their parents had favorable attitudes toward smoking marijuana ( $\chi^2=392.3$ ,  $df=3$ ,  $p<.001$ ).

Approximately 3.6% of 12<sup>th</sup> graders, 4.4% of 10<sup>th</sup> graders, 3.8% of 8<sup>th</sup> graders, and 2.1% of 6<sup>th</sup> graders indicated that their parents had favorable attitudes toward stealing anything ( $\chi^2=63.4$ ,  $df=3$ ,  $p<.001$ ). Approximately five percent of 12<sup>th</sup> graders, 5.0% of 10<sup>th</sup> graders, 3.9% of 8<sup>th</sup> graders, and 2.1% of

6<sup>th</sup> graders indicated that their parents had favorable attitudes toward drawing graffiti ( $\chi^2=112.9$ ,  $df=3$ ,  $p<.001$ ). Eleven percent of 12<sup>th</sup> graders, 10.4% of 10<sup>th</sup> graders, 11.2% of 8<sup>th</sup> graders, and 6.4% of 6<sup>th</sup> graders indicated that their parents had favorable attitudes toward picking a fight ( $\chi^2=133.5$ ,  $df=3$ ,  $p<.001$ ).

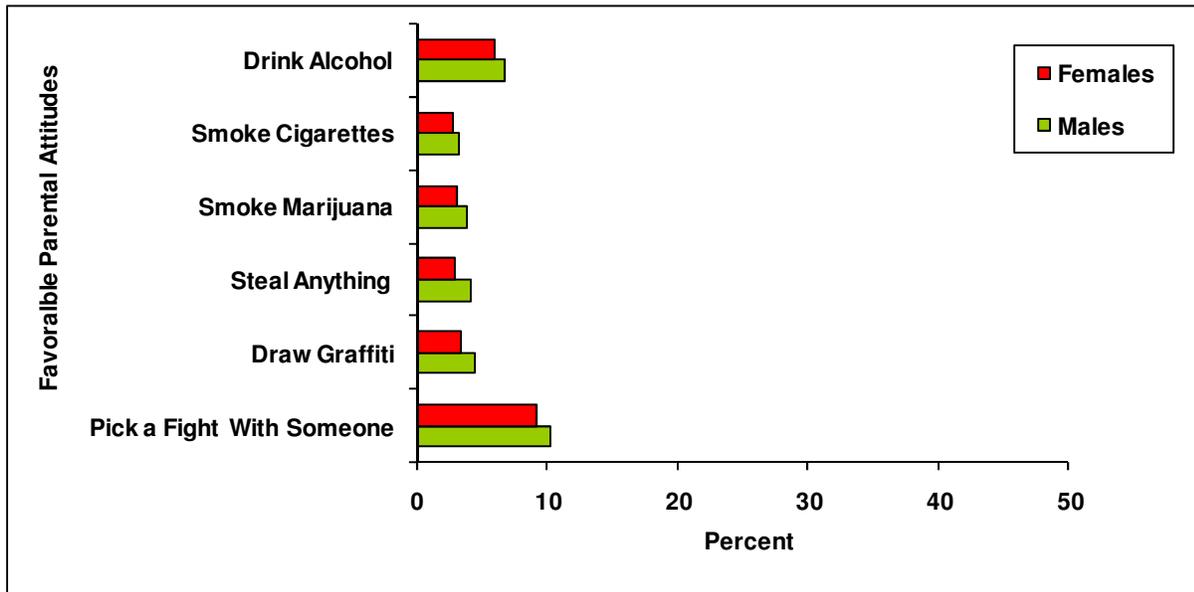


Figure 4c.18. Parental Attitudes Favorable Towards Substance Use and Antisocial Behavior by Gender, 2007 (Weighted Data)

Significantly more males than females indicated that their parents’ had favorable attitudes towards drinking alcohol (6.8% vs. 6%,  $\chi^2=7.9$ ,  $df=1$ ,  $p=.005$ ); and smoking marijuana (3.9% vs. 3.1%,  $\chi^2=10.6$ ,  $df=1$ ,  $p=.001$ ). Significantly more males than females indicated that their parents’ had favorable attitudes towards antisocial behaviors including stealing anything greater than \$5 (4.1% vs. 2.9%,  $\chi^2=28.3$ ,  $df=1$ ,  $p<.001$ ); drawing graffiti (4.4% vs. 3.3%,  $\chi^2=18.7$ ,  $df=1$ ,  $p<.001$ ); and picking a fight (10.3% vs. 9.1%,  $\chi^2=9.6$ ,  $df=1$ ,  $p=.002$ ).

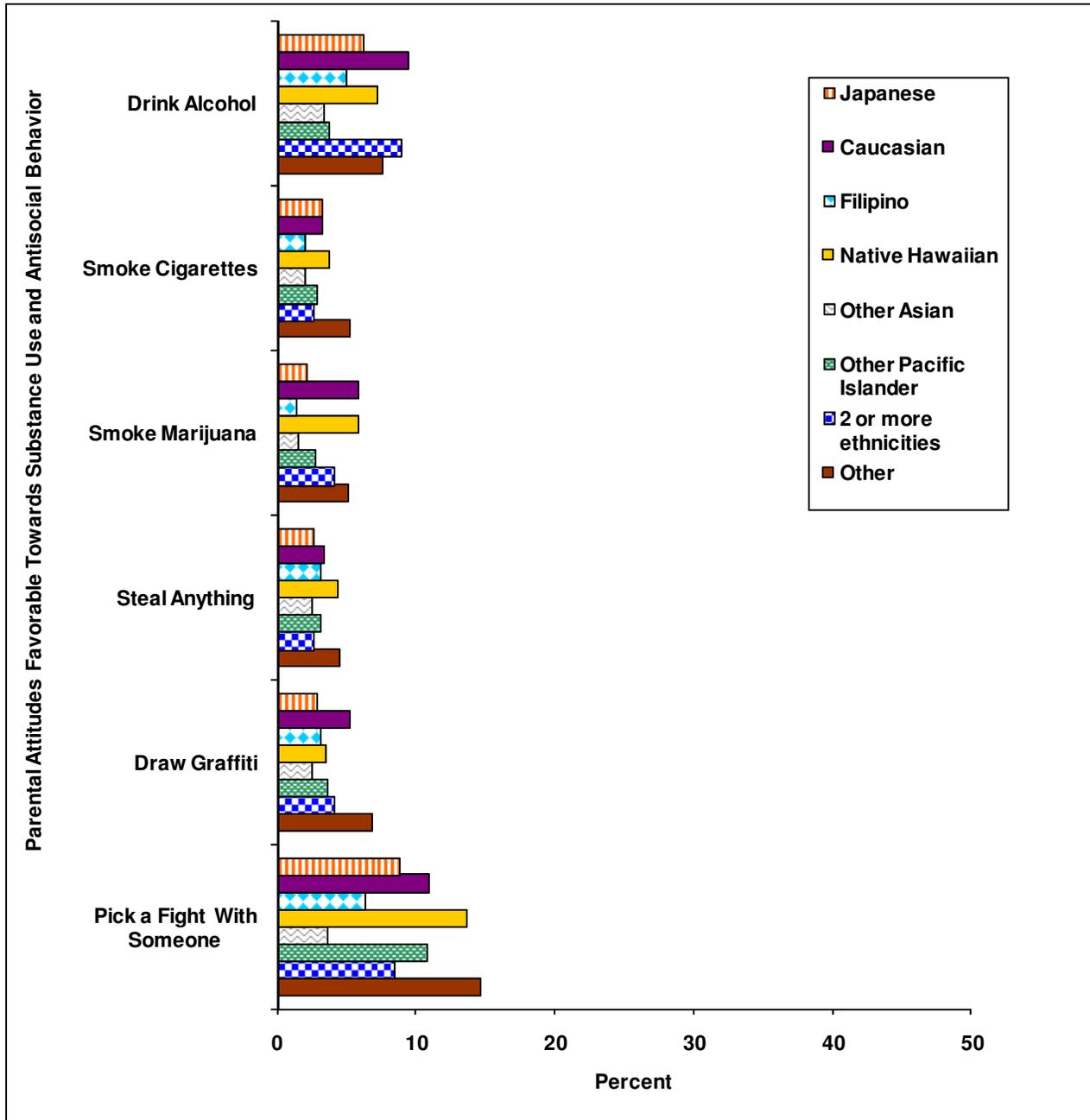


Figure 4c.19. Parental Attitudes Favorable Towards Substance Use and Antisocial Behavior by Ethnicity, 2007 (Weighted Data)

Significant differences in parental attitudes toward substance use and antisocial behavior occurred between ethnicities. Generally, either Caucasian students or students of Other ethnicities reported more parental attitudes favorable toward substance use and antisocial behavior than any other ethnic group. Slightly more than 6% of Japanese students, 9.4% of Caucasian students, 5% of Filipino students, 7.2% of

Native Hawaiian students, 3.4% of Other Asian students, 3.8% of Other Pacific Islander students, 9% of students of 2 or more ethnicities, and 7.6% of students of Other ethnicities reported that their parents do not think it is wrong for them to drink alcohol regularly ( $\chi^2=161.3$ ,  $df=7$ ,  $p<.001$ ).

Slightly more than 3% of Japanese students, 3.3% of Caucasian students, 2.1% of Filipino students, 3.8% of Native Hawaiian students, 2.1% of Other Asian students, 2.9% of Other Pacific Islander students, 2.7% of students of 2 or more ethnicities, and 5.2% of students of Other ethnicities reported that their parents do not think it is wrong for them to smoke cigarettes ( $\chi^2=64.0$ ,  $df=7$ ,  $p<.001$ ).

Slightly more than 2% of Japanese students, 5.9% of Caucasian students, 1.4% of Filipino students, 5.8% of Native Hawaiian students, 1.6% of Other Asian students, 2.8% of Other Pacific Islander students, 4.2% of students of 2 or more ethnicities, and 5.1% of students of Other ethnicities reported that their parents do not think it is wrong for them to smoke marijuana ( $\chi^2=273.3$ ,  $df=7$ ,  $p<.001$ ).

Nearly 3% of Japanese students, 3.4% of Caucasian students, 3.2% of Filipino students, 4.4% of Native Hawaiian students, 2.5% of Other Asian students, 3.2% of Other Pacific Islander students, 2.7% of students of 2 or more ethnicities, and 4.5% of students of Other ethnicities reported that their parents do not think it is wrong for them to steal anything worth more than \$5 ( $\chi^2=29.4$ ,  $df=7$ ,  $p<.001$ ).

Nearly 3% of Japanese students, 5.2% of Caucasian students, 3.2% of Filipino students, 3.5% of Native Hawaiian students, 2.6% of Other Asian students, 3.7% of Other Pacific Islander students, 4.1% of students of 2 or more ethnicities, and 6.9% of students of Other ethnicities reported that their parents do not think it is wrong for them to draw graffiti ( $\chi^2=88.7$ ,  $df=7$ ,  $p<.001$ ).

Nearly 9% of Japanese students, 11% of Caucasian students, 6.4% of Filipino students, 13.7% of Native Hawaiian students, 3.7% of Other Asian students, 10.8% of Other Pacific Islander students, 8.5% of students of 2 or more ethnicities, and 14.7% of students of Other ethnicities reported that their parents do not think it is wrong for them to pick a fight with someone ( $\chi^2=307.1$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.5. Correlations Between Parental Attitudes Favorable Towards Substance Use and Antisocial Behavior and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factors Favorable Parental Attitudes	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Drink Alcohol	.36	.35	.24	.27	.25	.20
Smoke Cigarettes	.29	.32	.35	.29	.29	.27
Smoke Marijuana	.34	.36	.27	.43	.36	.29
Steal Anything	.21	.21	.17	.20	.21	.21
Draw Graffiti	.23	.25	.19	.24	.24	.22
Pick a Fight	.26	.25	.18	.22	.22	.18

For the most part, favorable parental attitudes towards substance use and antisocial behaviors were mildly correlated ( $r=.20$  to  $.36$ ) with monthly substance use, drinking or getting high at school and selling illegal drugs. A moderate correlation ( $r=.43$ ) was found with favorable parental attitudes toward smoking marijuana and monthly marijuana use.

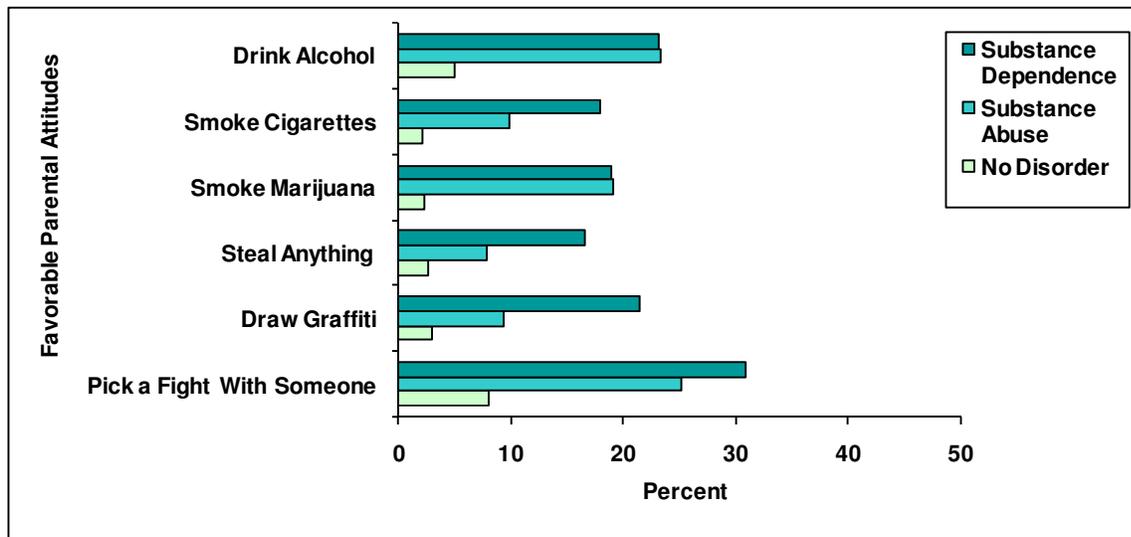


Figure 4c.20. Parental Attitudes Favorable Towards Substance Use and Antisocial Behavior by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate that their parents' had favorable attitudes towards substance use and antisocial behavior. Favorable parental attitudes towards substance use were similar for youth with substance abuse and dependence but significantly more than youth without substance abuse or dependence for drinking alcohol (23.1% dependence, 23.3% abuse vs. 5.0% none,  $\chi^2=931.4$ ,  $df=2$ ,  $p<.001$ ); and smoking marijuana (18.9% dependence, 19.1% abuse vs. 2.3% none,  $\chi^2=1357.2$ ,  $df=2$ ,  $p<.001$ ). Significantly more youth with substance dependence than youth with substance abuse indicated that their parents' had favorable attitudes towards smoking cigarettes and antisocial behaviors. Furthermore, significantly more youth with substance abuse or dependence, when compared to youth without, reported that their parents' had favorable attitudes towards smoking cigarettes (18% dependence vs. 9.9% abuse vs. 2.2% none,  $\chi^2=890.8$ ,  $df=2$ ,  $p<.001$ ); and antisocial behaviors including stealing anything greater than \$5 (16.6% dependence vs. 7.9% abuse vs. 2.7% none,  $\chi^2=583.2$ ,  $df=2$ ,  $p<.001$ ); drawing graffiti (21.4% dependence vs. 9.4% abuse vs. 2.9% none,  $\chi^2=901.8$ ,  $df=2$ ,  $p<.001$ ); and picking a fight (30.9% dependence vs. 25.1% abuse vs. 8.0% none,  $\chi^2=796.6$ ,  $df=2$ ,  $p<.001$ ).

## FAMILY ATTACHMENT

---

Family attachment assessed whether students felt connected to and loved by their family through the following questions: *I feel very close to my mother; I share my thoughts and feelings with my mother; I feel very close to my father; and I share my thoughts and feelings with my father.* Response choices for the 4-item, 4-point scale were: (1) *NO! Definitely not true for you*; (2) *no, mostly not true for you*; (3) *yes, mostly true for you*; and (4) *YES! Definitely true for you*. Respondents that indicated *yes, mostly true for you* or *YES! Definitely true for you* were categorized as positive family attachment.

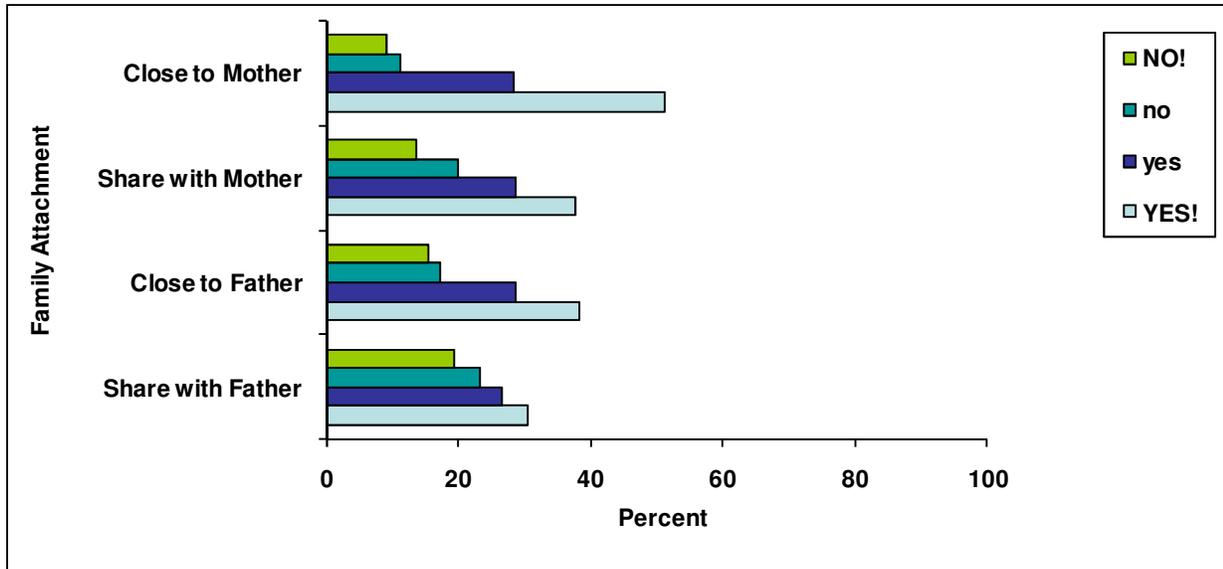


Figure 4c.21. Family Attachment, 2007 (Weighted Data)

In general, students felt closer to their mothers (79.8%) than their fathers (67.2%). They were also more likely to share their thoughts and feelings with their mothers (66.3%) than their fathers (57.1%).

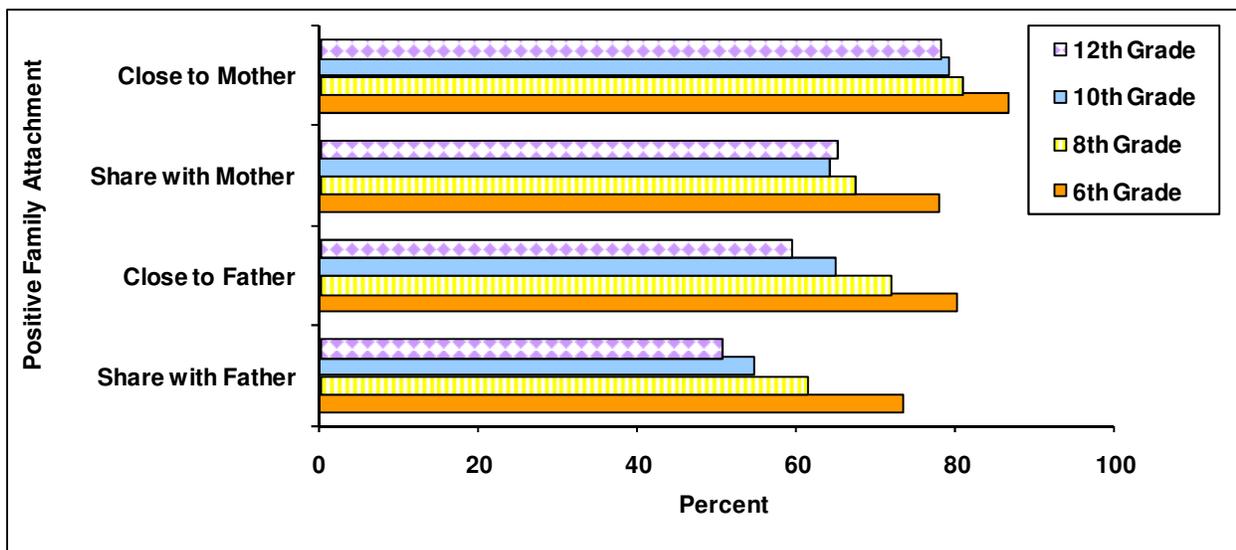


Figure 4c.22. Positive Family Attachment by Grade Level, 2007 (Weighted Data)

Overall, more youth reported positive family attachment at younger ages with 6th graders reporting the highest levels. Grade level differences were greater for fathers than mothers. Nearly 87% of

6<sup>th</sup> graders, 80.7% of 8<sup>th</sup> graders, 79.2% of 10<sup>th</sup> graders, and 78% of 12<sup>th</sup> graders indicated that they felt close to their mothers ( $\chi^2=229.3$ ,  $df=3$ ,  $p<.001$ ). Approximately 78% of 6<sup>th</sup> graders, 67.3% of 8<sup>th</sup> graders, 64.3% of 10<sup>th</sup> graders, and 65% of 12<sup>th</sup> graders indicated that they could share their thoughts and feelings with their mothers ( $\chi^2=454.8$ ,  $df=3$ ,  $p<.001$ ). Eighty percent of 6<sup>th</sup> graders, 71.9% of 8<sup>th</sup> graders, 64.9% of 10<sup>th</sup> graders, and 59.3% of 12<sup>th</sup> graders indicated that they felt close to their fathers ( $\chi^2=829.0$ ,  $df=3$ ,  $p<.001$ ). Approximately 73.4% of 6<sup>th</sup> graders, 61.2% of 8<sup>th</sup> graders, 54.6% of 10<sup>th</sup> graders, and 50.5% of 12<sup>th</sup> graders indicated that they could share their thoughts and feelings with their fathers ( $\chi^2=948.1$ ,  $df=3$ ,  $p<.001$ ).

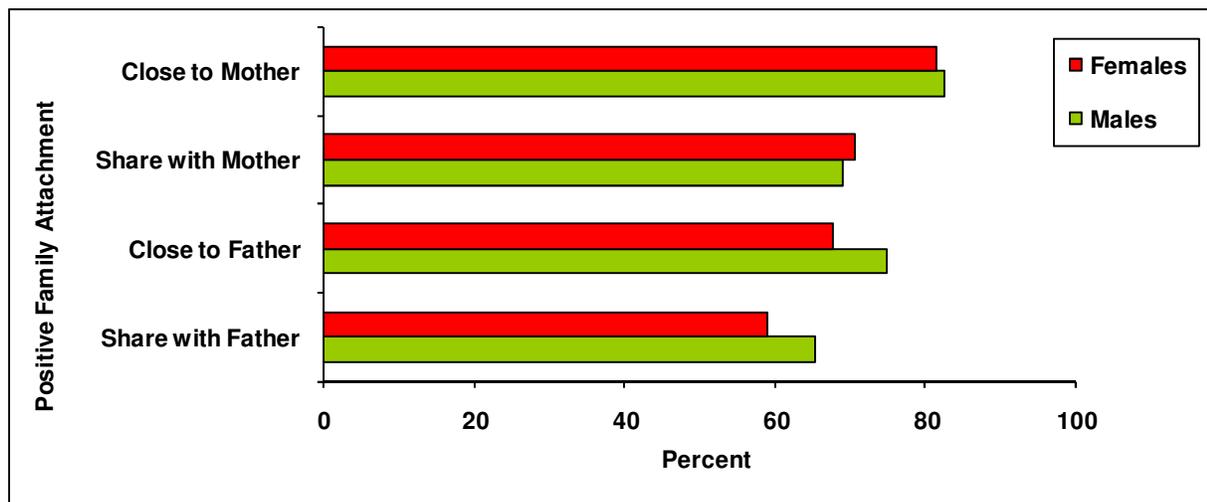


Figure 4c.23. Positive Family Attachment by Gender, 2007 (Weighted Data)

Slightly more males reported feeling close to their mother than females (82.6% vs. 81.5%,  $\chi^2=5.8$ ,  $df=1$ ,  $p=.016$ ). More males also reported feeling close to their fathers (74.9% vs. 67.7%,  $\chi^2=160.6$ ,  $df=1$ ,  $p<.001$ ). Slightly more female student shared their thoughts and feelings with their mothers (70.7% vs. 68.9%,  $\chi^2=9.7$ ,  $df=1$ ,  $p=.002$ ) while more males shared their thoughts and feelings with their fathers (65.4% vs. 59.0%,  $\chi^2=112.4$ ,  $df=1$ ,  $p<.001$ ).

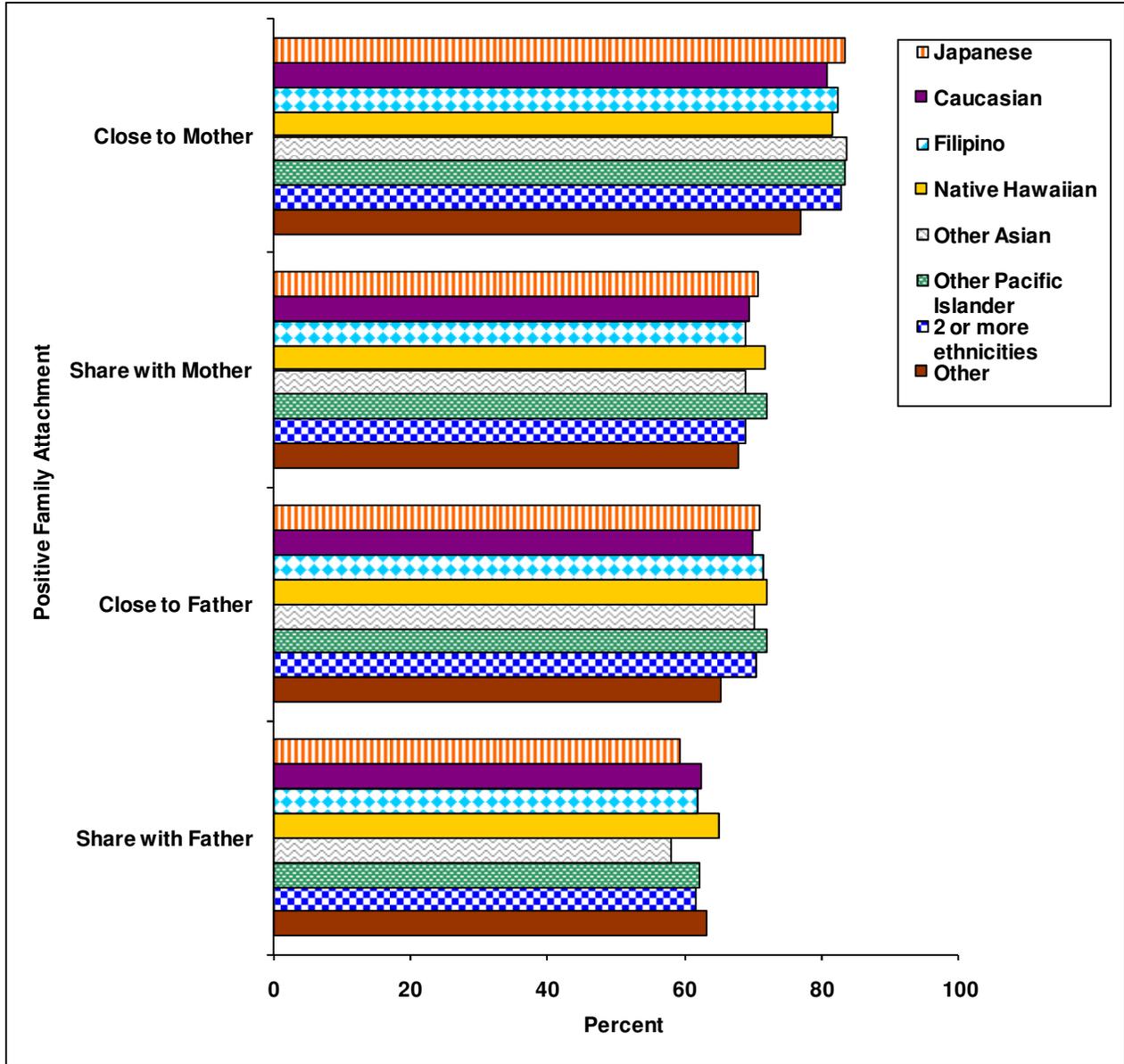


Figure 4c.24. Positive Family Attachment by Ethnicity, 2007 (Weighted Data)

Asian and Pacific Islander students reported greater family attachment than other ethnic groups while students of Other ethnicities generally reported the lowest levels of family attachment. Nearly 83.5% of Japanese students, 80.9% of Caucasian students, 82.3% of Filipino students, 81.6% of Native Hawaiian students, 83.7% of Other Asian students, 83.3% of Other Pacific Islander students, 82.8% of students of 2 or more ethnicities, and 76.8% of students of Other ethnicities reported that they are close to their mothers ( $\chi^2=48.9$ ,  $df=7$ ,  $p<.001$ ). Nearly 71% of Japanese students, 69.3% of Caucasian students, 69% of Filipino

students, 71.8% of Native Hawaiian students, 69% of Other Asian students, 72% of Other Pacific Islander students, 69% of students of 2 or more ethnicities, and 67.8% of students of Other ethnicities reported that they share their thoughts and feelings with their mothers ( $\chi^2=22.6$ ,  $df=7$ ,  $p=.002$ ). Slightly more than 71% of Japanese students, 69.9% of Caucasian students, 71.5% of Filipino students, 72% of Native Hawaiian students, 70.1% of Other Asian students, 72.1% of Other Pacific Islander students, 70.4% of students of 2 or more ethnicities, and 65.3% of students of Other ethnicities reported that they are close to their fathers ( $\chi^2=35.1$ ,  $df=7$ ,  $p<.001$ ). Nearly 59.5% of Japanese students, 62.5% of Caucasian students, 61.9% of Filipino students, 65.1% of Native Hawaiian students, 58.1% of Other Asian students, 62.3% of Other Pacific Islander students, 61.8% of students of 2 or more ethnicities, and 63.2% of students of Other ethnicities reported that they share their thoughts and feelings with their fathers ( $\chi^2=43.7$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.6. Correlations Between Family Attachment and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factors Family Attachment	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Close to Mother	-.13	-.13	-.12	-.11	-.12	-.10
Share with Mother	-.09	-.09	-.08	-.08	-.09	-.08
Close to Father	-.11	-.10	-.09	-.09	-.10	-.07
Share with Father	-.07	-.06	-.06	-.06	-.07	-.05

Overall, family attachment was not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

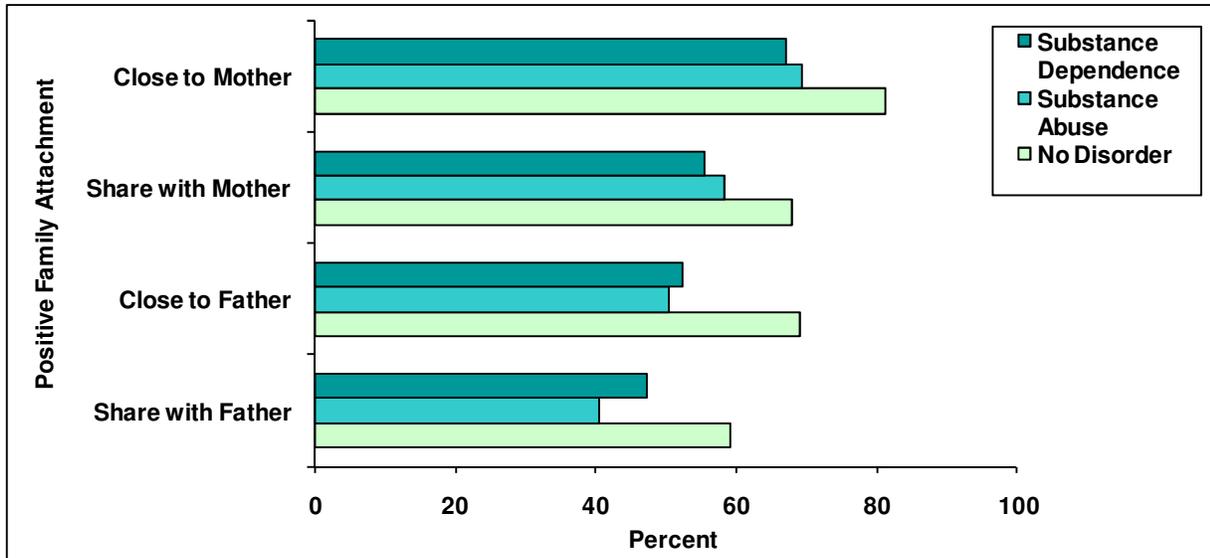


Figure 4c.25. Positive Family Attachment by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly less likely to indicate positive family attachment. Youth with substance abuse and dependence had similar proportions of positive family attachment but significantly less than youth without substance abuse or dependence for close to mother (67.2% dependence, 69.4% abuse vs. 81.1% none,  $\chi^2=176.2$ ,  $df=2$ ,  $p<.001$ ); share thoughts and feelings with mother (55.5% dependence, 58.2% abuse vs. 67.8% none,  $\chi^2=93.9$ ,  $df=2$ ,  $p<.001$ ); close to father (52.3% dependence, 50.4% abuse vs. 69.1% none,  $\chi^2=247.8$ ,  $df=2$ ,  $p<.001$ ); and share thoughts and feelings with father (47.2% dependence, 40.4% abuse vs. 59.3% none,  $\chi^2=176.6$ ,  $df=2$ ,  $p<.001$ ).

#### FAMILY OPPORTUNITIES FOR POSITIVE INVOLVEMENT

The family opportunities for positive involvement protective factor was measured using a 3-item, 4-point scale that asked students to respond to the following items: *My parents give me a lot of chances to do fun things with them*; *My parents ask what I think when making decisions that affect me*; and *If I had a personal problem, I could ask my mom or dad for help*. Response choices were: (1) *NO! Definitely not true for you*; (2) *no, mostly not true for you*; (3) *yes, mostly true for you*; and (4) *YES! Definitely true for you*.

Respondents that indicated *yes, mostly true for you* or *YES! Definitely true for you* were categorized as having positive family attachment.

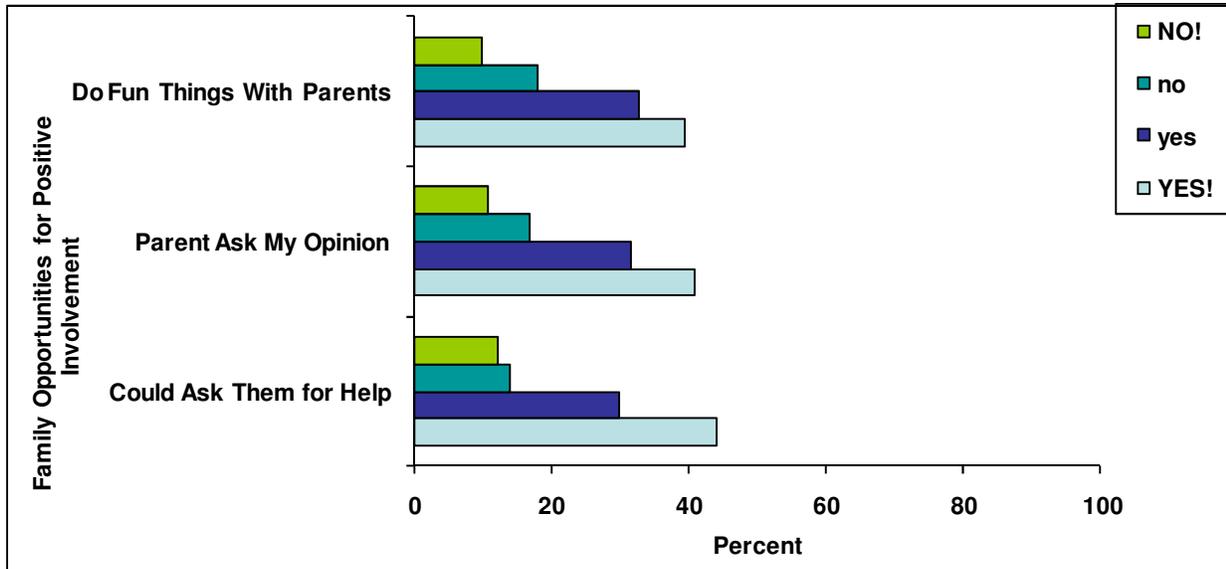


Figure 4c.26. Family Opportunities for Positive Involvement, 2007 (Weighted Data)

Overall, approximately three out of every four students indicated that they had family opportunities for positive involvement including having chances to do fun things with their parents (72.2%), parents asking them what they think when decisions are made that affect them (72.4%), and being able to ask their mom or dad for help if they had a personal problem (73.8%).

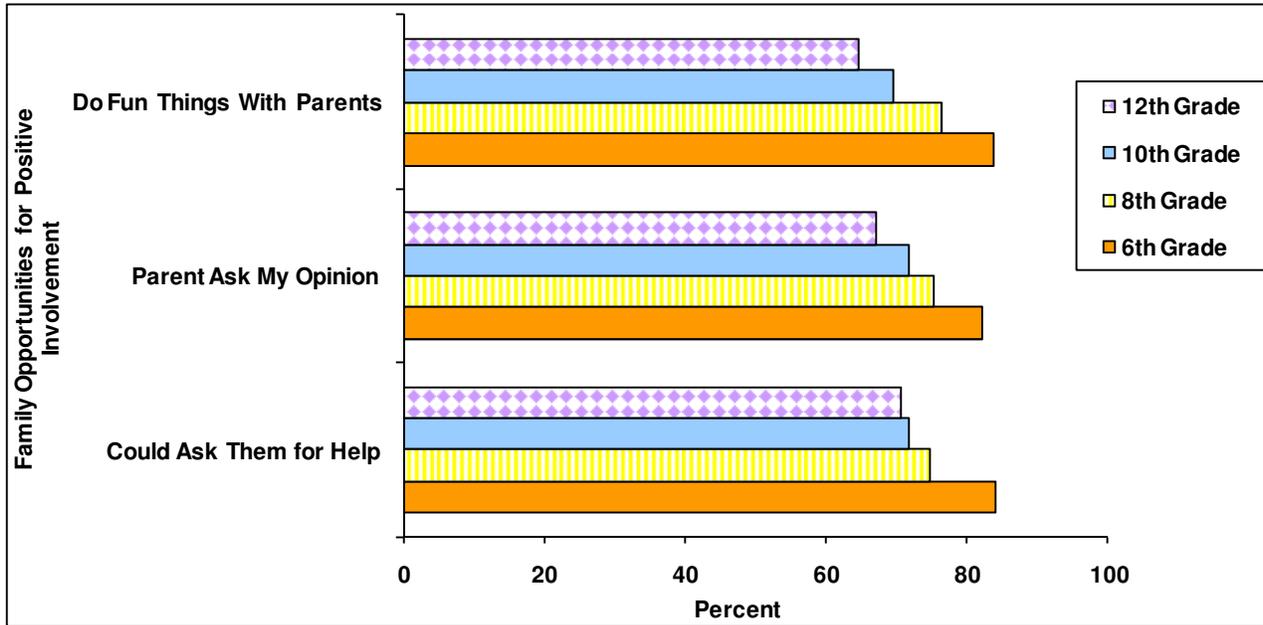


Figure 4c.27. Family Opportunities for Positive Involvement by Grade Level, 2007 (Weighted Data)

Overall, more youth reported having family opportunities for positive involvement as grade level decreased with 6th graders reporting the highest levels. Approximately 84% of 6<sup>th</sup> graders, 76.5% of 8<sup>th</sup> graders, 69.5% of 10<sup>th</sup> graders, and 64.7% of 12<sup>th</sup> graders indicated that their parents give them a lot of chances to do fun things with them ( $\chi^2=789.4$ ,  $df=3$ ,  $p<.001$ ). Just over 82% of 6<sup>th</sup> graders, 75.4% of 8<sup>th</sup> graders, 71.7% of 10<sup>th</sup> graders, and 67.2% of 12<sup>th</sup> graders indicated that their parents ask them what they think when making decisions that affect them ( $\chi^2=471.2$ ,  $df=3$ ,  $p<.001$ ). Eighty-four percent of 6<sup>th</sup> graders, 74.9% of 8<sup>th</sup> graders, 71.9% of 10<sup>th</sup> graders, and 70.8% of 12<sup>th</sup> graders indicated that they could ask their mom or dad for help if they had a personal problem ( $\chi^2=485.0$ ,  $df=3$ ,  $p<.001$ ).

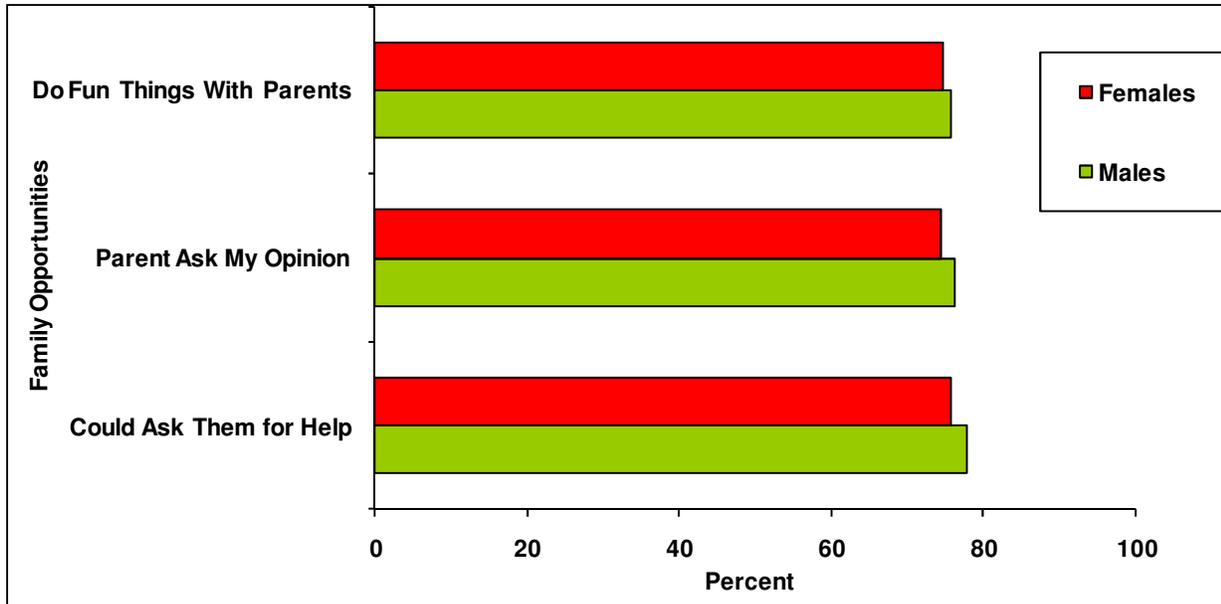


Figure 4c.28. Family Opportunities for Positive Involvement by Gender, 2007 (Weighted Data)

Slightly more males reported that their parents ask their opinion when making decisions that affect them than females (76.4% vs. 74.6%,  $\chi^2=12.4$ ,  $df=1$ ,  $p<.001$ ). Slightly more males also indicated that they could ask a parent for help if they had a personal problem (77.9% vs. 75.8%,  $\chi^2=17.2$ ,  $df=1$ ,  $p<.001$ ). There was no difference between males and females in reporting that their parents give them a lot of chances to do fun things with them.

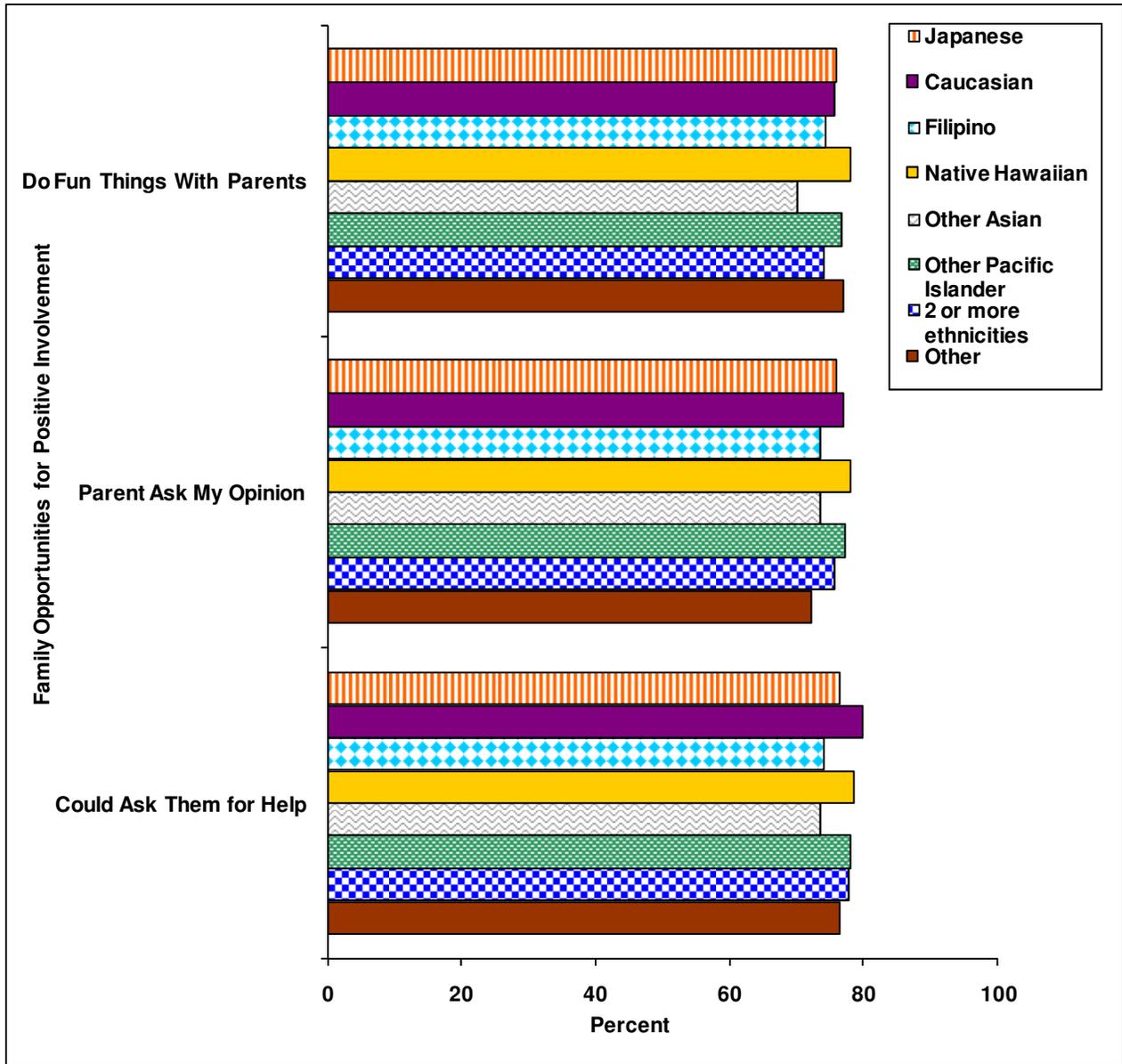


Figure 4c.29. Family Opportunities for Positive Involvement by Ethnicity, 2007 (Weighted Data)

Native Hawaiian and Caucasian students reported more family opportunities for positive involvement than other ethnic groups. Nearly 76% of Japanese students, 75.7% of Caucasian students, 74.3% of Filipino students, 78% of Native Hawaiian students, 70.1% of Other Asian students, 76.7% of Other Pacific Islander students, 74.1% of students of 2 or more ethnicities, and 77.1% of students of Other ethnicities reported that their parents give them a lot of chances to do fun things with them ( $\chi^2=61.9$ ,  $df=7$ ,  $p<.001$ ). Nearly 76% of Japanese students, 77% of Caucasian students, 73.6% of Filipino students, 78% of

Native Hawaiian students, 73.5% of Other Asian students, 77.4% of Other Pacific Islander students, 75.7% of students of 2 or more ethnicities, and 72.3% of students of Other ethnicities reported that their parents ask their opinion when making decisions that affect them ( $\chi^2=55.3$ ,  $df=7$ ,  $p<.001$ ). A little more than 76.5% of Japanese students, 80% of Caucasian students, 74% of Filipino students, 78.7% of Native Hawaiian students, 73.5% of Other Asian students, 78.2% of Other Pacific Islander students, 77.8% of students of 2 or more ethnicities, and 76.5% of students of Other ethnicities reported that their parents ask their opinion when making decisions that affect them ( $\chi^2=84.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.7. Correlations Between Family Opportunities for Positive Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factors Family Opportunities for Positive Involvement	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Do Fun Things With Parents	-.12	-.11	-.11	-.11	-.11	-.08
Parent Ask My Opinion	-.11	-.10	-.09	-.11	-.11	-.08
Could Ask Them for Help	-.11	-.10	-.10	-.10	-.11	-.08

Overall, family opportunities for positive involvement was not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

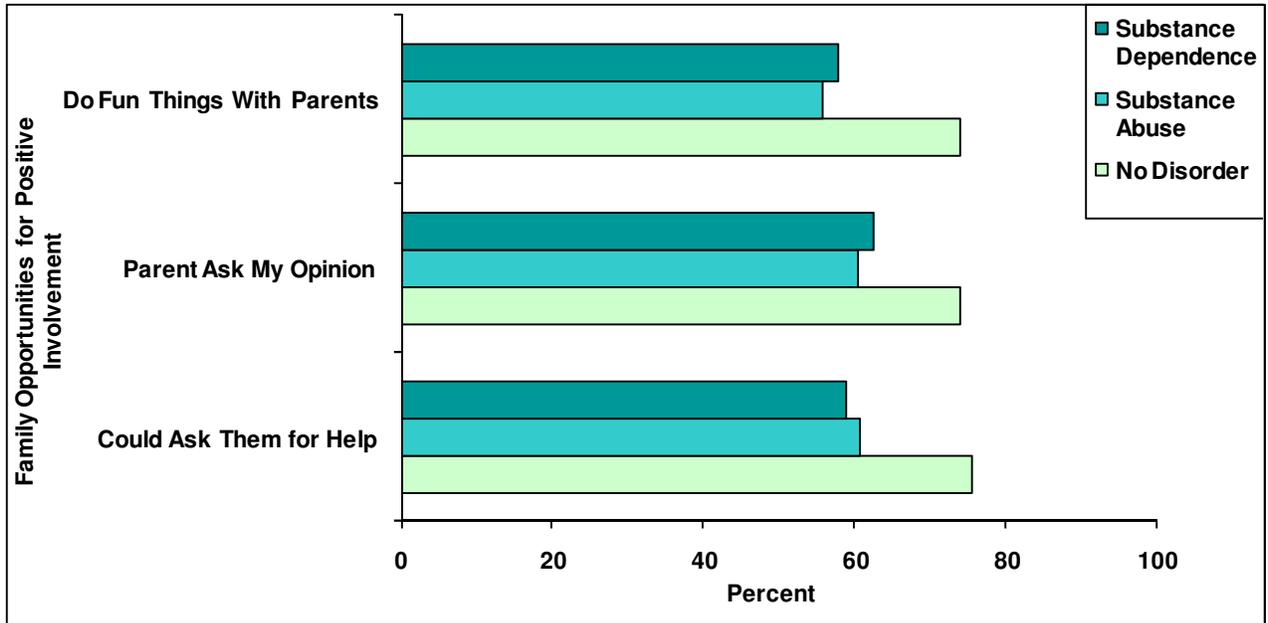


Figure 4c.30. Family Opportunities for Positive Involvement by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly less likely to indicate that they had family opportunities for positive involvement. Youth with substance abuse and dependence had similar proportions of family involvement but significantly less than youth without substance abuse or dependence for doing fun things with their parents (57.8% dependence, 55.9% abuse vs. 73.9% none,  $\chi^2=251.0$ ,  $df=2$ ,  $p<.001$ ); parents asking their opinion when making decisions that affect them (62.6% dependence, 60.5% abuse vs. 73.9% none,  $\chi^2=131.9$ ,  $df=2$ ,  $p<.001$ ); and feeling that they could ask their mom or dad for help if they had a personal problem (58.8% dependence, 60.8% abuse vs. 75.5% none,  $\chi^2=222.6$ ,  $df=2$ ,  $p<.001$ ).

#### FAMILY REWARDS FOR POSITIVE INVOLVEMENT

The family rewards for positive involvement protective factor was measured using a 4-item, 4-point scale that asked students about their positive experiences with parental figures. The two items in the scale, *I enjoy spending time with my mother* and *I enjoy spending time with my father*, used the response choices: (1) *NO! Definitely not true for you*; (2) *no, mostly not true for you*; (3) *yes, mostly true for you*; and (4) *YES!*

*Definitely true for you.* For these items, respondents that indicated *yes, mostly true for you* or *YES! Definitely true for you* were categorized as having family rewards.

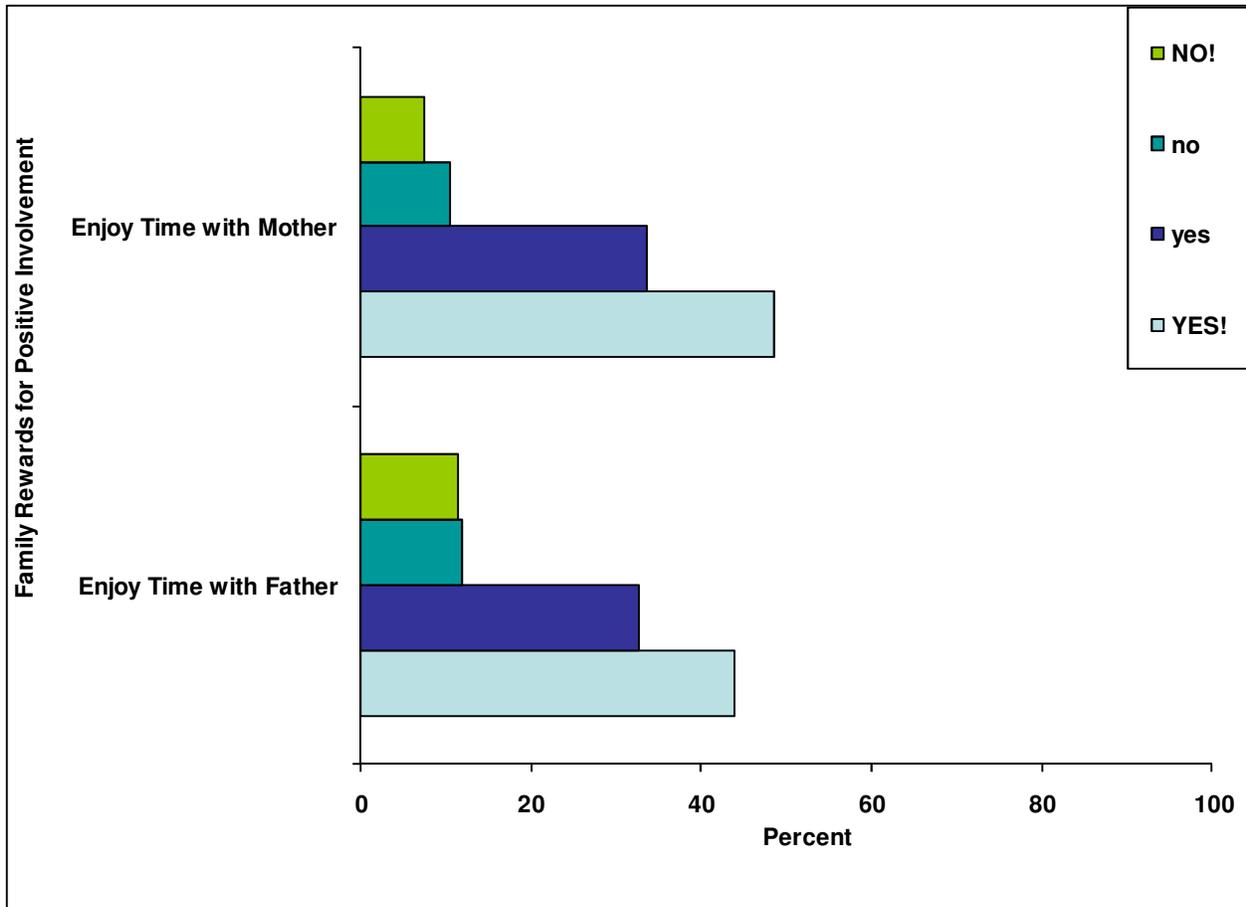


Figure 4c.31. Family Rewards for Positive Involvement, 2007 (Weighted Data)

The vast majority of students enjoy spending time with their parents with 82.1% of students reporting they enjoyed spending time with their mothers and 76.6% of students reporting they enjoyed spending time with their fathers.

The other two items in the scale (*How often do your parents tell you that you are doing a good job?* and *How often do your parents tell you they're proud of you for something you've done?*) used the response choices: (1) *Never or almost never*, (2) *Sometimes*, (3) *Often*, and (4) *All the time*. For these questions, respondents that indicated *Often* or *All the time* were categorized as having family rewards.

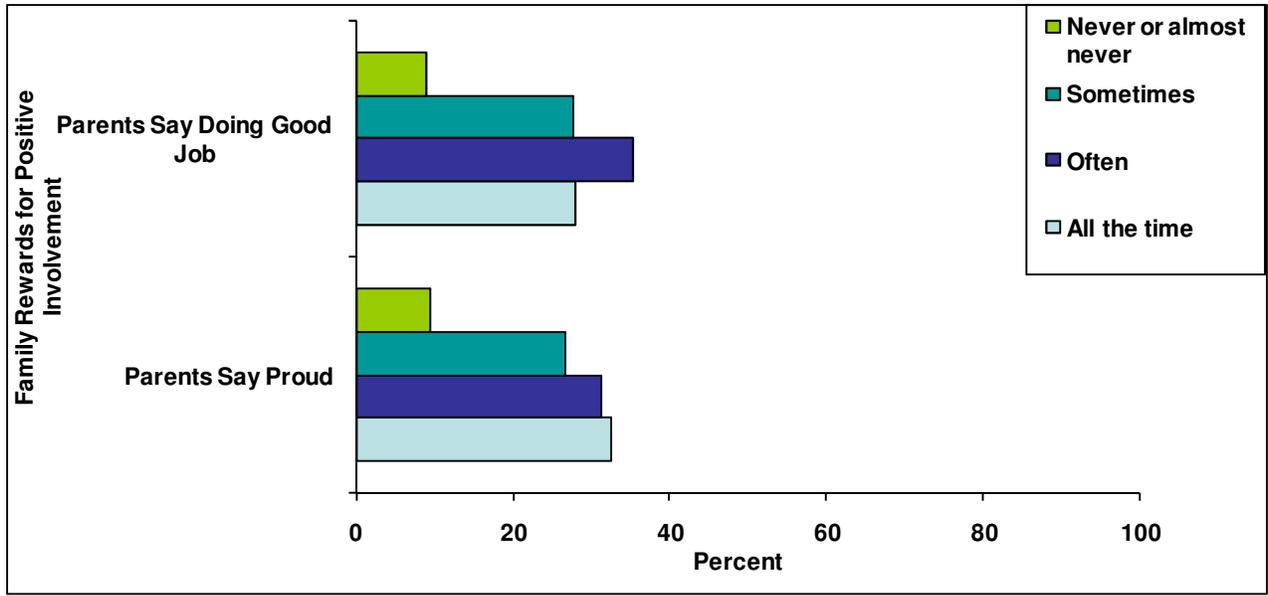


Figure 4c.32. Family Rewards for Positive Involvement (continued), 2007 (Weighted Data)

Nearly ten percent of students reported that their parents never told them that they were proud of them for something they've done and 8.9% reported that their parents never told them that they were doing a good job.

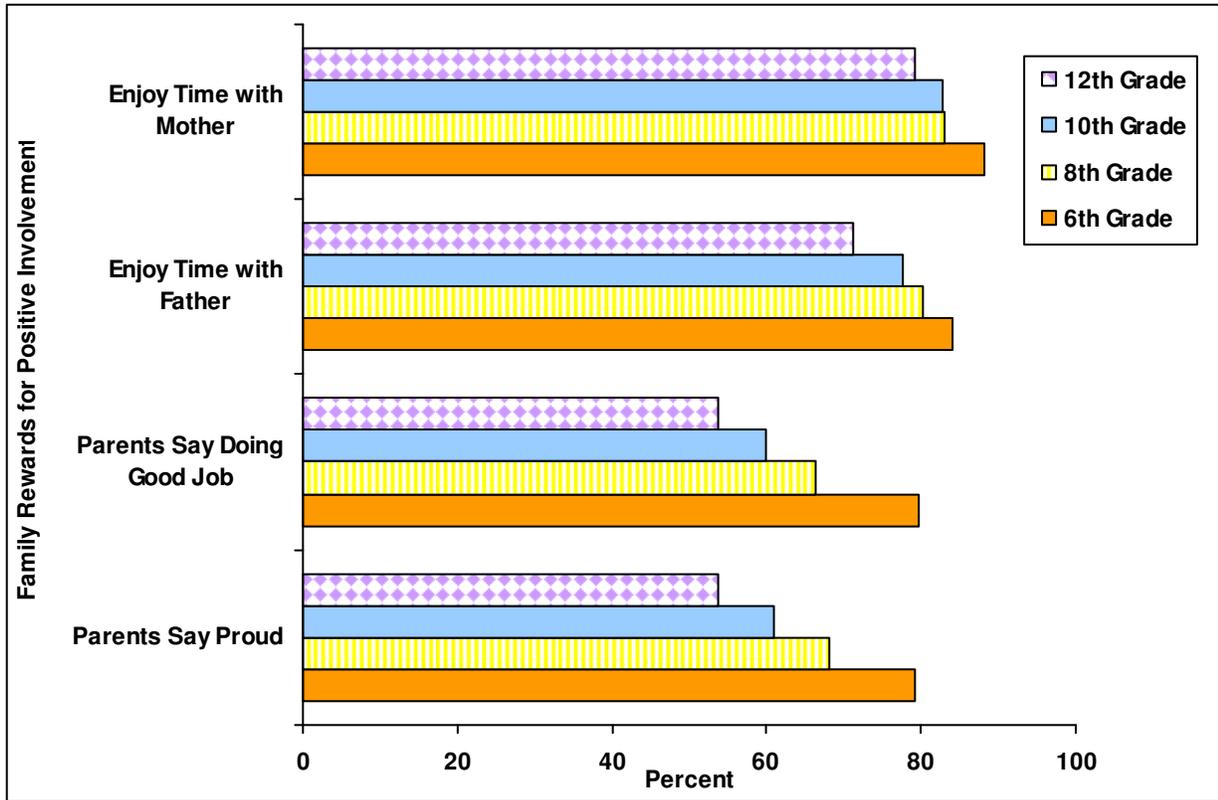


Figure 4c.33. Family Rewards for Positive Involvement by Grade Level, 2007 (Weighted Data)

Overall, more older students reported having family rewards for positive involvement than younger students with 6th graders reporting the highest levels. Approximately 88% of 6<sup>th</sup> graders, 83% of 8<sup>th</sup> graders, 82.9% of 10<sup>th</sup> graders, and 79.3% of 12<sup>th</sup> graders indicated that enjoyed time with their mothers ( $\chi^2=223.6$ ,  $df=3$ ,  $p<.001$ ). Just over 84% of 6<sup>th</sup> graders, 80.2% of 8<sup>th</sup> graders, 77.6% of 10<sup>th</sup> graders, and 71.1% of 12<sup>th</sup> graders indicated that they enjoyed time with their fathers ( $\chi^2=357.8$ ,  $df=3$ ,  $p<.001$ ). Nearly 80% of 6<sup>th</sup> graders, 66.4% of 8<sup>th</sup> graders, 59.8% of 10<sup>th</sup> graders, and 53.8% of 12<sup>th</sup> graders indicated that their parents often or always tell them that they are doing a good job ( $\chi^2=1223.2$ ,  $df=3$ ,  $p<.001$ ). Approximately 79% of 6<sup>th</sup> graders, 68.1% of 8<sup>th</sup> graders, 60.8% of 10<sup>th</sup> graders, and 53.6% of 12<sup>th</sup> graders indicated that their parents often or always tell them that they are proud of them for something that they've done ( $\chi^2=1159.4$ ,  $df=3$ ,  $p<.001$ ).

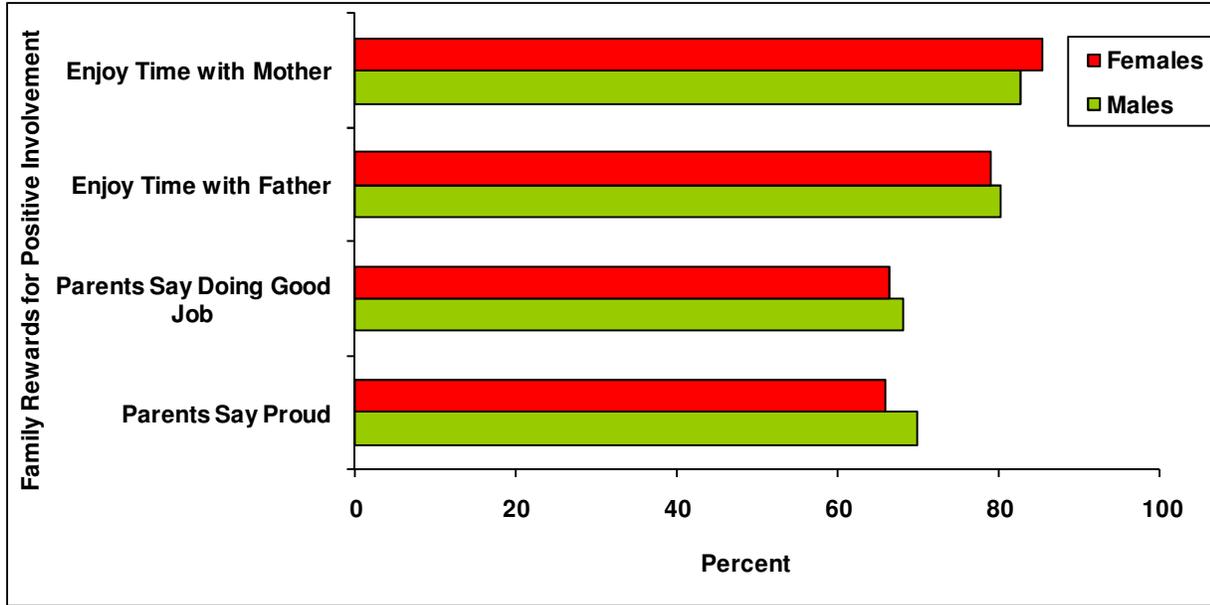


Figure 4c.34. Family Rewards for Positive Involvement by Gender, 2007 (Weighted Data)

Slightly more females reported that they enjoyed spending time with their mothers than males (85.5% vs. 82.6%,  $\chi^2=42.5$ ,  $df=1$ ,  $p<.001$ ). Slightly more males also indicated that they enjoyed spending time with their fathers (80.1% vs. 78.9%,  $\chi^2=6.5$ ,  $df=1$ ,  $p=.011$ ); their parents often or always told them that they were doing a good job (68.2% vs. 66.5%,  $\chi^2=8.0$ ,  $df=1$ ,  $p=.005$ ); and their parents often or always tell them that they are proud of them for something that they've done (69.9% vs. 66.0%,  $\chi^2=46.6$ ,  $df=1$ ,  $p<.001$ ).

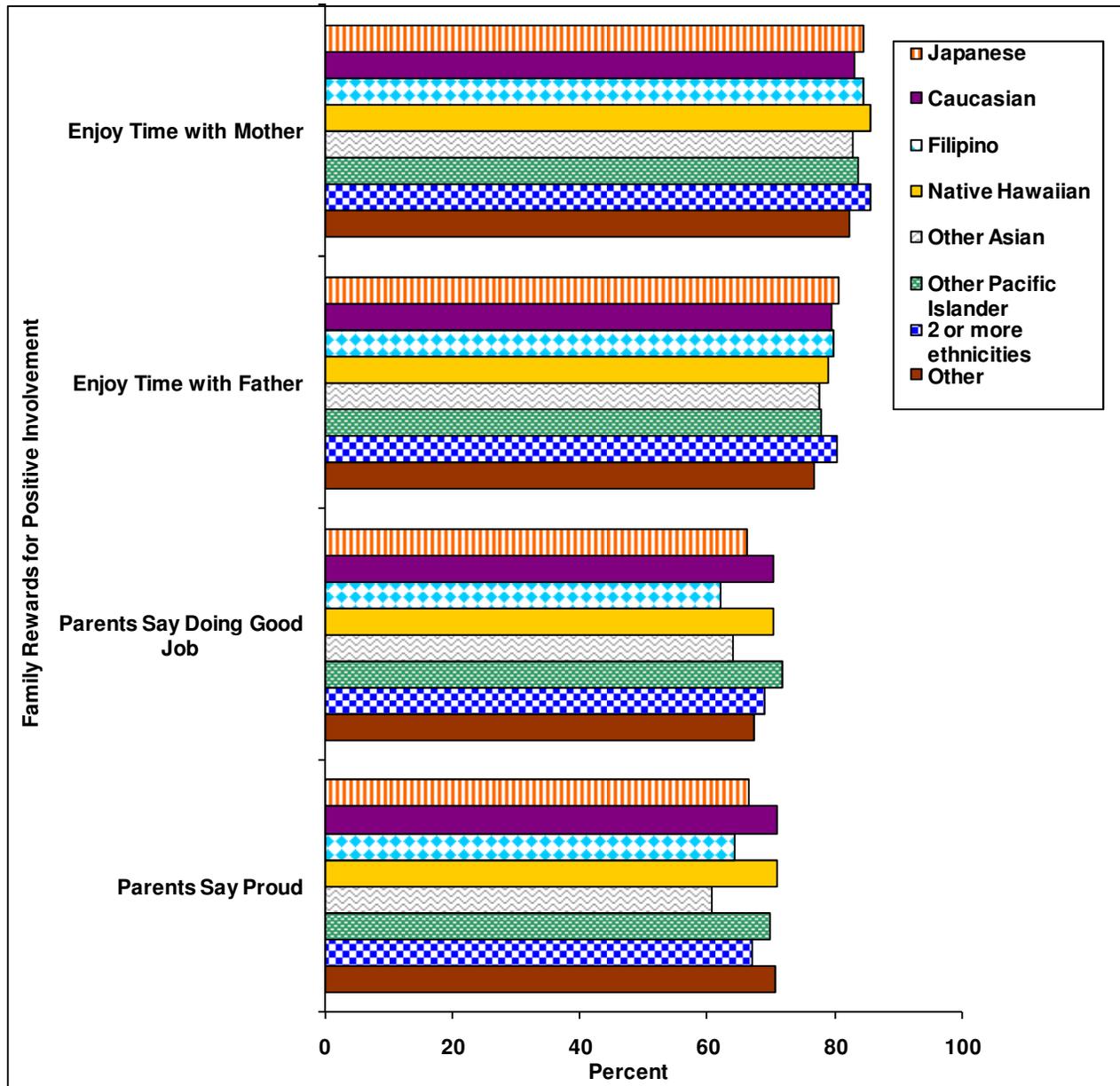


Figure 4c.35. Family Rewards for Positive Involvement by Ethnicity, 2007 (Weighted Data)

There was not any one ethnic group that showed more family rewards for positive involvement than other ethnic groups. Eighty-four and a half percent of Japanese students, 83.3% of Caucasian students, 84.5% of Filipino students, 85.6% of Native Hawaiian students, 83% of Other Asian students, 83.7% of Other Pacific Islander students, 85.6% of students of 2 or more ethnicities, and 82.3% of students of Other ethnicities reported that they enjoy spending time with their mothers ( $\chi^2=18.7$ ,  $df=7$ ,  $p=.009$ ). Nearly 81%

of Japanese students, 79.5% of Caucasian students, 79.8% of Filipino students, 79.1% of Native Hawaiian students, 77.7% of Other Asian students, 77.9% of Other Pacific Islander students, 80.5% of students of 2 or more ethnicities, and 76.8% of students of Other ethnicities reported they enjoy spending time with their fathers ( $X^2=20.3$ ,  $df=7$ ,  $p=.005$ ). A little more than 66% of Japanese students, 70.4% of Caucasian students, 62.2% of Filipino students, 70.3% of Native Hawaiian students, 64.1% of Other Asian students, 71.7% of Other Pacific Islander students, 69.1% of students of 2 or more ethnicities, and 67.3% of students of Other ethnicities reported that their parents tell them they are doing a good job ( $X^2=159.1$ ,  $df=7$ ,  $p<.001$ ). A little more than 66.5% of Japanese students, 71.1% of Caucasian students, 64.3% of Filipino students, 70.9% of Native Hawaiian students, 60.8% of Other Asian students, 69.9% of Other Pacific Islander students, 67.1% of students of 2 or more ethnicities, and 70.8% of students of Other ethnicities reported that their parents tell them they're proud of them for something they've done ( $X^2=147.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4c.8. Correlations Between Family Rewards for Positive Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factors Family Rewards for Positive Involvement	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Enjoy Time with Mother	-.13	-.12	-.10	-.11	-.12	-.10
Enjoy Time with Father	-.10	-.09	-.10	-.10	-.10	-.08
Parents Say Doing Good Job	-.12	-.11	-.12	-.10	-.12	-.07
Parents Say Proud	-.14	-.12	-.13	-.11	-.13	-.08

Overall, family rewards for positive involvement was not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

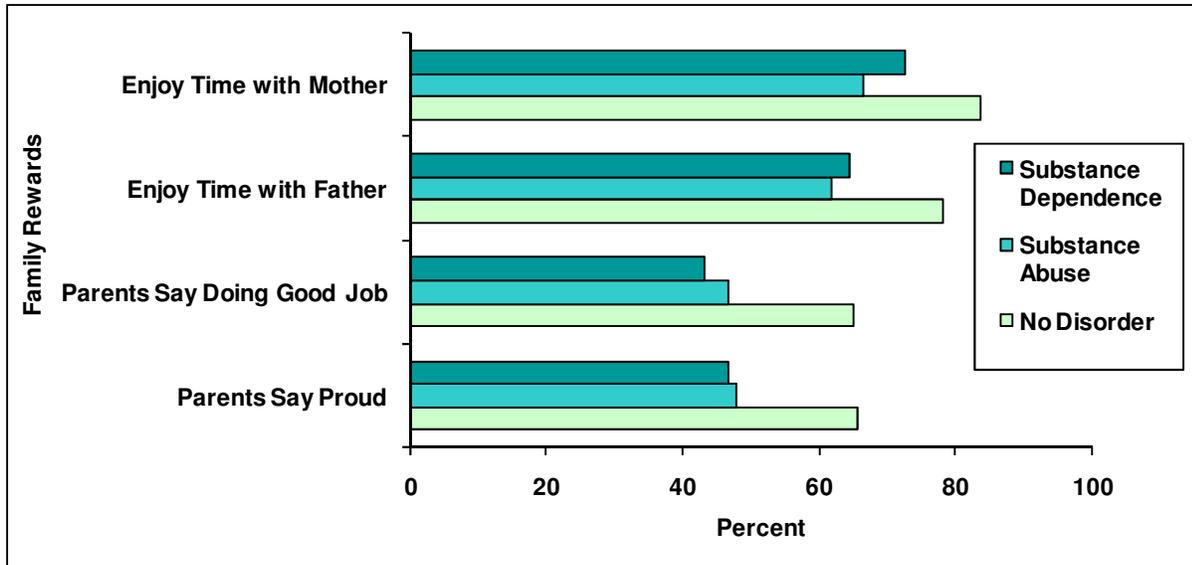


Figure 4c.36. Family Rewards for Positive Involvement by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly less likely to indicate that they received family rewards for positive involvement. Youth with substance abuse and dependence had similar proportions of family reward but significantly less than youth without substance abuse or dependence for enjoying time with mother (72.6% dependence, 66.5% abuse vs. 83.6% none,  $\chi^2=247.2$ ,  $df=2$ ,  $p<.001$ ); enjoying time with father (64.5% dependence, 62.0% abuse vs. 78.3% none,  $\chi^2=220.3$ ,  $df=2$ ,  $p<.001$ ); parents telling them they'd done a good job (43.2% dependence, 46.6% abuse vs. 65.2% none,  $\chi^2=306.8$ ,  $df=2$ ,  $p<.001$ ); and parents telling them they're proud of them for something they've done (46.6% dependence, 47.9% abuse vs. 65.7% none,  $\chi^2=253.5$ ,  $df=2$ ,  $p<.001$ ).

## CONCLUSION

---

Findings for the family risk and protective factors were similar to the 2003 Hawai'i Student ATOD survey. Overall, risk factors within the family domain such as exposure to family substance use, poor family supervision, lack of parental sanctions, and parental attitudes favorable to substance use, were more highly correlated to substance use than protective factors such as family attachment or family opportunities and rewards. Risk factors were similar to one another, with poor family supervision being a weakly correlated with substance use. Risk factors tended to be higher among males and increased with grade level, with some variation by ethnicity.

Given the importance of family risk and protective factors, existing programs should consider incorporating or integrating a family component to prevention and treatment intervention. It is hypothesized that programs that minimize risks by limiting youths' exposure to substances and that establish clear communication about rules for substance use within families should help to reduce youth substance use. Also because protective factors are most apparent at younger ages, prevention and intervention efforts may need to explore multiple and sustained approaches for ongoing programs that account for developmental transitions as well as gender and cultural differences in order to be most effective.

## SCHOOL DOMAIN

### INTRODUCTION

---

There are many factors that can influence an adolescent's likelihood to engage in substance use. Factors related to school play an important role in influencing adolescents' use of substances. Academic performance is a risk factor often measured by students' grades in school. Poor academic performance can act as a risk factor for adolescent substance use. There is evidence that suggests a cycle in which low performance in school raises the risk for alcohol consumption which can then further decrease school performance (Mason & Windle, 2001). Additionally, low academic achievement or performance has been found to be related to the risk of alcohol abuse and dependence. Being identified at an early age (i.e. grade one) by teachers as being underachieving in school has been named as a predictor of alcoholism. It has been suggested that a general tendency towards deviance and problem behaviors could be the reason for the link between alcohol use disorders and low educational achievement (Crum, Ensminger, Ro, & McCord, 1998). Low academic achievement in early adolescence has also been found to be linked to high cigarette use at the time low grades were reported as well as greater cigarette and marijuana use over time (Bryant, Schulenberg, O'Malley, Bachman, & Johnston, 2003).

Academic performance has also been shown to act as a protective factor for adolescent substance use. Achieving high grades early in adolescence (e.g., age 14) has been associated with a decreased likelihood of using more cigarettes and marijuana over time (Bryant et al., 2003). In addition, high grades have been associated with a decrease in alcohol consumption (Mason & Windle, 2001).

Educational aspirations (e.g., plans to continue education beyond high school) have also been considered a factor associated with adolescent substance use. Similar to findings related to academic achievement, there is evidence demonstrating a link between school dropout and the possibility for alcohol

abuse and dependence. Furthermore, dropping out of high school as well as having plans to limit education to high school (e.g., no plans to attend college) were both found to be predictive of alcoholism. Additionally, an overall inclination toward deviance and problem behaviors may account for school dropout as well as accounting for the link between alcohol use disorders and academic achievement (Crum et al., 1998).

College planning can be considered a protective factor because it has been found that adolescents who reported plans to attend college were not as likely to report alcohol and cigarette use at the time they were asked about college plans (Bryant et al., 2003).

Factors related to school commitment can fall into the risk category. There is literature that has indicated that a low level of commitment to school was significantly associated with increased risk of cigarette and marijuana use. Also contributing to adolescents' use of cigarettes and marijuana as well as alcohol was low school attachment (Beyers, Toumbourou, Catalano, Arthur, & Hawkins, 2004).

Conversely, commitment and strong attachment or commitment to education are often reported as important protective factors related to adolescent substance use. It has been shown that early establishment and continuation of strong educational bonds decrease risk and increase protection against alcohol abuse and dependence later in life (Guo, Hawkins, Hill, & Abbott, 2001). It has also been reported that family bonding has a reasonably significant, positive connection with commitment to education and adolescents who demonstrate more commitment to education tend to use alcohol less frequently. Additionally, it was found that when these adolescents used alcohol, consumption was normally in smaller amounts (Bahr, Marcos, & Maughan, 1995). Similarly, attachment to family as well as school has been shown to be associated with a decrease in the incidence of not only cigarette, alcohol, and marijuana use but delinquency and violent behavior as well (Dornbusch, Erickson, Laird, & Wong, 2001). In addition, the literature noted that adolescents who reported greater levels of school effort and school interest as well as school bonding were less likely to report alcohol and cigarette use at that time (Bryant et al., 2003).

Based on the literature, it is clear that the school domain plays a major role in the risk and protective factor framework of adolescent substance use. It has been suggested that improving bonds to school should be a consistent goal from childhood through adolescence (Guo et al., 2001). The 2007-2008 Hawai'i Student ATOD Study will address risk and protective factors related to school and how they are associated with adolescent substance use.

The school risk and protective factors related to adolescent substance use that were used in the 2007-2008 Hawai'i Student ATOD Survey were academic performance, educational aspirations, school commitment, school opportunities for positive involvement, and school rewards for positive involvement. The survey questions that corresponded to each factor are provided in Table 4d.1.

Table 4d.1: School Risk and Protective Factors and the Corresponding 2007-2008 Hawai'i Student ATOD Survey Questions and Responses (Adapted from Pearson, 2003).

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Low School Commitment</b>	Defined as the student's inability to see the role of a student as a viable one. Factors such as disliking school and perceiving the course work as irrelevant are positively related to drug use.	How important do you think the things you are learning in school are going to be for you later in life?	Very important = 5 Quite important = 4 Fairly important = 3 Slightly important = 2 Not at all important = 1
		How interesting are most of your classes to you?	Very interesting = 5 Quite interesting = 4 Fairly interesting = 3 Slightly dull = 2 Very dull = 1
		Now, thinking back over the past year in school, how often did you feel that the school work you were assigned was meaningful and important?	Never = 0 Seldom = 1 Sometimes = 2 Often = 3 Almost Always = 4
		Now, thinking back over the past year in school, how often did you try to do your best work in school?	
		Now thinking back over the past year in school, how often did you hate being in school?	
		Now thinking back over the past year in school, how often did you enjoy being in school?	
<b>Poor Academic Performance</b>	Defined as poor performance in school. Beginning in the late elementary grades (grades 4-6), academic failure increases the risk of drug abuse and delinquency.	Putting them all together, what were your grades like last year?	Mostly A's = 5 Mostly B's = 4 Mostly C's = 3 Mostly D's = 2 Mostly F's = 1
		My school grades are better than the grades of most of the students in my class.	NO! = 0 no = 1 yes = 2 YES! = 3

<b>Protective Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Educational Aspirations</b>	Defined as aspirations for continuing on to and graduating from college. National surveys of high school seniors have shown that ATOD use is significantly lower among students who expect to attend and graduate from college than among those who do not.	How likely is it that you will graduate from high school?	Definitely won't = 1 Probably won't = 2 Probably will = 3 Definitely will = 4
		How likely is it that you will go to college?	
		How likely is it that you will graduate from a four-year college?	
		How likely is it that you will go to a technical or vocational school after high school?	
<b>School Opportunities for Positive Involvement</b>	Defined as opportunities to become involved in school activities. When young people are given more opportunities to participate meaningfully in important activities at school, they are less likely to engage in drug use or problem behaviors.	In my school, students have a lot of chances to help decide things like class activities and rules	NO! = 0 no = 1 yes = 2 YES! = 3
		There are a lot of chances for students in my school to talk with a teacher one-on-one	
		There are a lot of chances for students in my school to get involved with sports, clubs, and other school activities outside of class	
		I have a lot of chances to be part of class discussions or activities	
<b>School Rewards for Positive Involvement</b>	Defined as positive feedback by school personnel for student achievement. When young people are recognized and rewarded for their contributions at school, they are less likely to be involved in substance use and other problem behaviors.	My teachers praise me when I work hard in school	NO! = 0 no = 1 yes = 2 YES! = 3
		My teacher(s) notice(s) when I am doing a good job and lets me know about it	

## ACADEMIC PERFORMANCE

The factor of academic performance or achievement was measured by the questions asking what students' grades were like last year and whether the students' grades are better than most of the students in their class. Low academic achievement was defined as *Mostly D's* and *Mostly F's* for students' grades last year, and *NO!* and *no* responses for grades better than most students in their class.

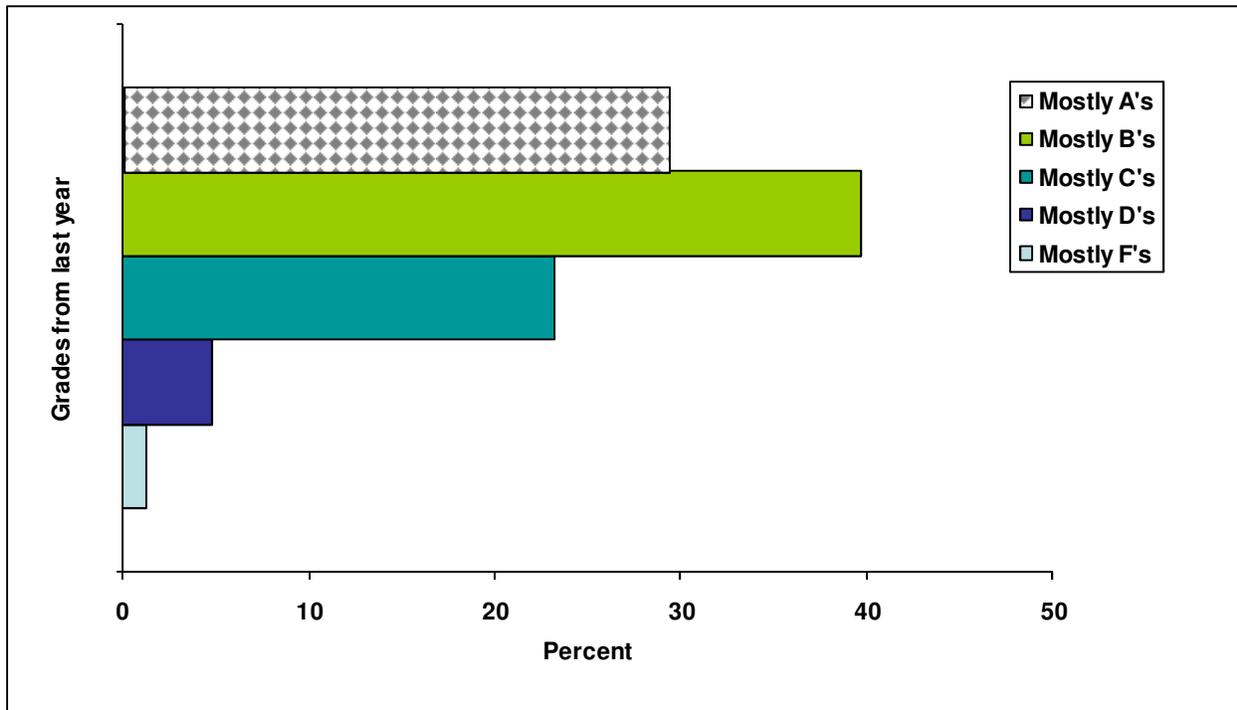


Figure 4d.1. Academic Performance, 2007 (Weighted Data)

More students reported earning good grades, with mostly A's (29.4%) and mostly B's (39.7%) or passing grades with mostly C's (23.2%), compared to poor grades with mostly D's (4.8%) and mostly F's (1.3%).

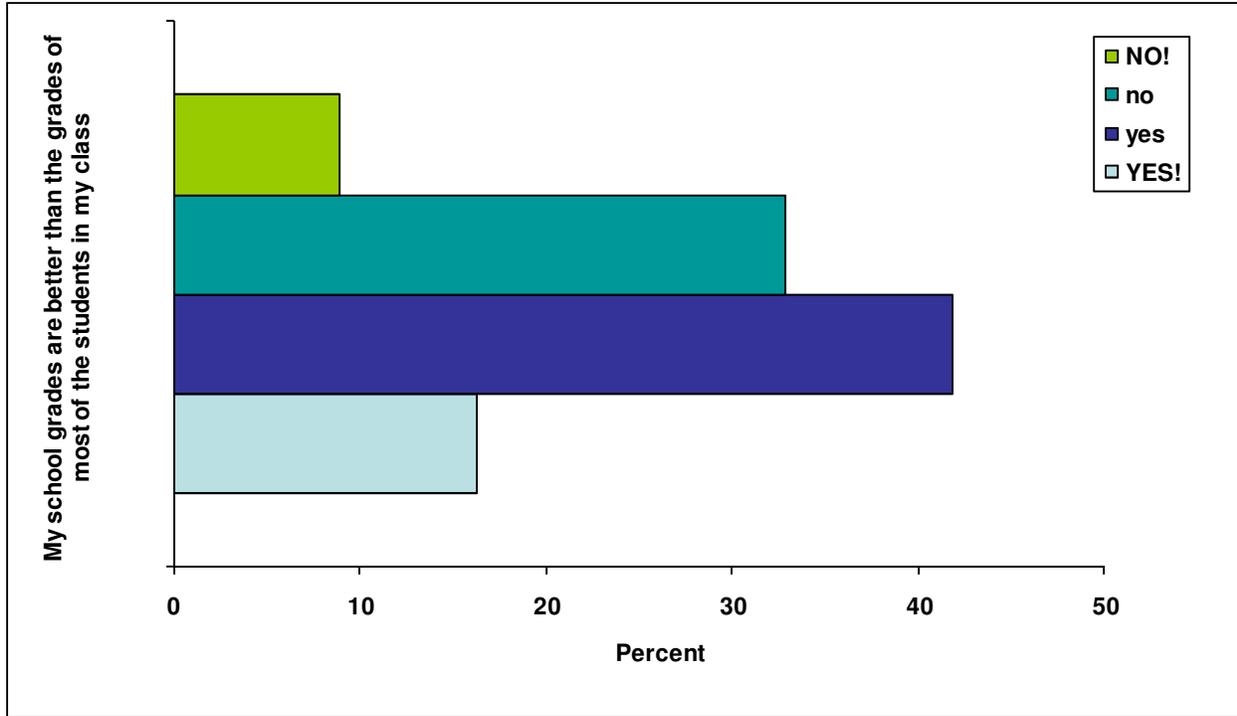


Figure 4d.2. Academic Performance (continued), 2007 (Weighted Data)

More students reported that it was mostly true (*yes*) that their grades were better than other students in their class (41.9%), followed by students who reported it was mostly untrue (*no*) that their grades were better than others in their class (32.9%). Students who reported that their grades were definitely not (*NO!*) better than others in their class were the smallest group (8.9%) and those who said their grades were definitely better (*YES!*) than others in their class were the second smallest group (16.3%).

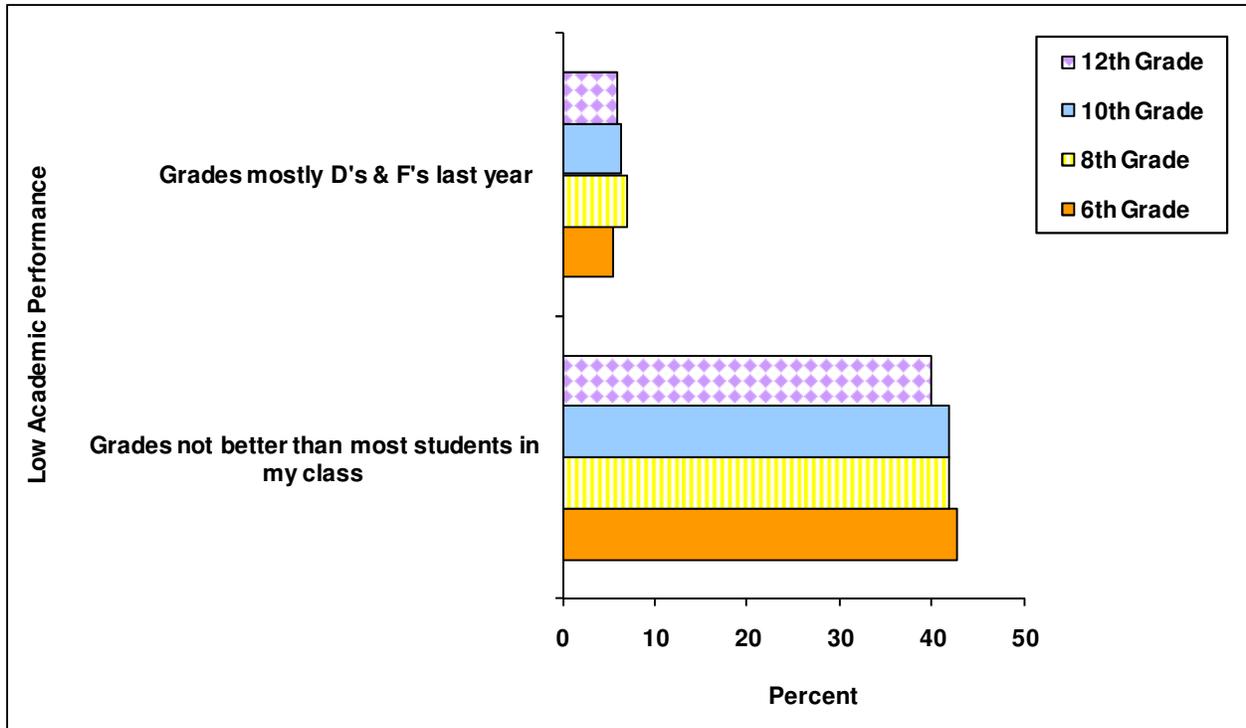


Figure 4d.3. Low Academic Performance by Grade, 2007 (Weighted Data)

More 8<sup>th</sup> graders reported getting mostly D's & F's for last year's grades compared to other grades, with 6<sup>th</sup> graders the least likely to report having low grades the previous year (5.4% of 6<sup>th</sup> graders, 7% of 8<sup>th</sup> graders, 6.3% of 10<sup>th</sup> graders, and 6% of 12<sup>th</sup> graders; ( $\chi^2=17.0$ ,  $df=3$ ,  $p=.001$ ).

Sixth graders were more likely to report low grades relative to their classmates compared to students from other grades, with 12<sup>th</sup> graders the least likely to report low grades relative to their classmates (42.7% of 6<sup>th</sup> graders, 41.8% of 8<sup>th</sup> graders, 41.9% of 10<sup>th</sup> graders, and 39.9% of 12<sup>th</sup> graders;  $\chi^2=11.3$ ,  $df=3$ ,  $p<.05$ ).

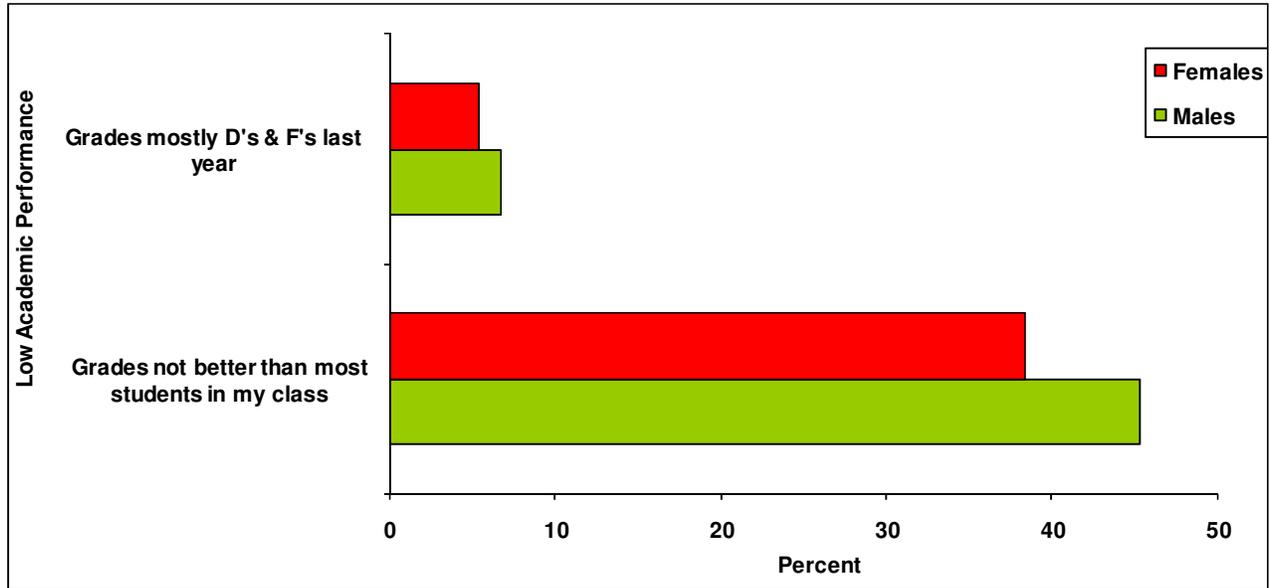


Figure 4d.4. Low Academic Performance by Gender, 2007 (Weighted Data)

Overall, more males than females reported they had low academic achievement for last year's grades (6.7% vs. 5.3%;  $\chi^2=20.9$ ,  $df=3$ ,  $p<.001$ ) and grades relative to their classmates (45.4% vs. 38.4%;  $\chi^2=125.0$ ,  $df=3$ ,  $p<.001$ ).

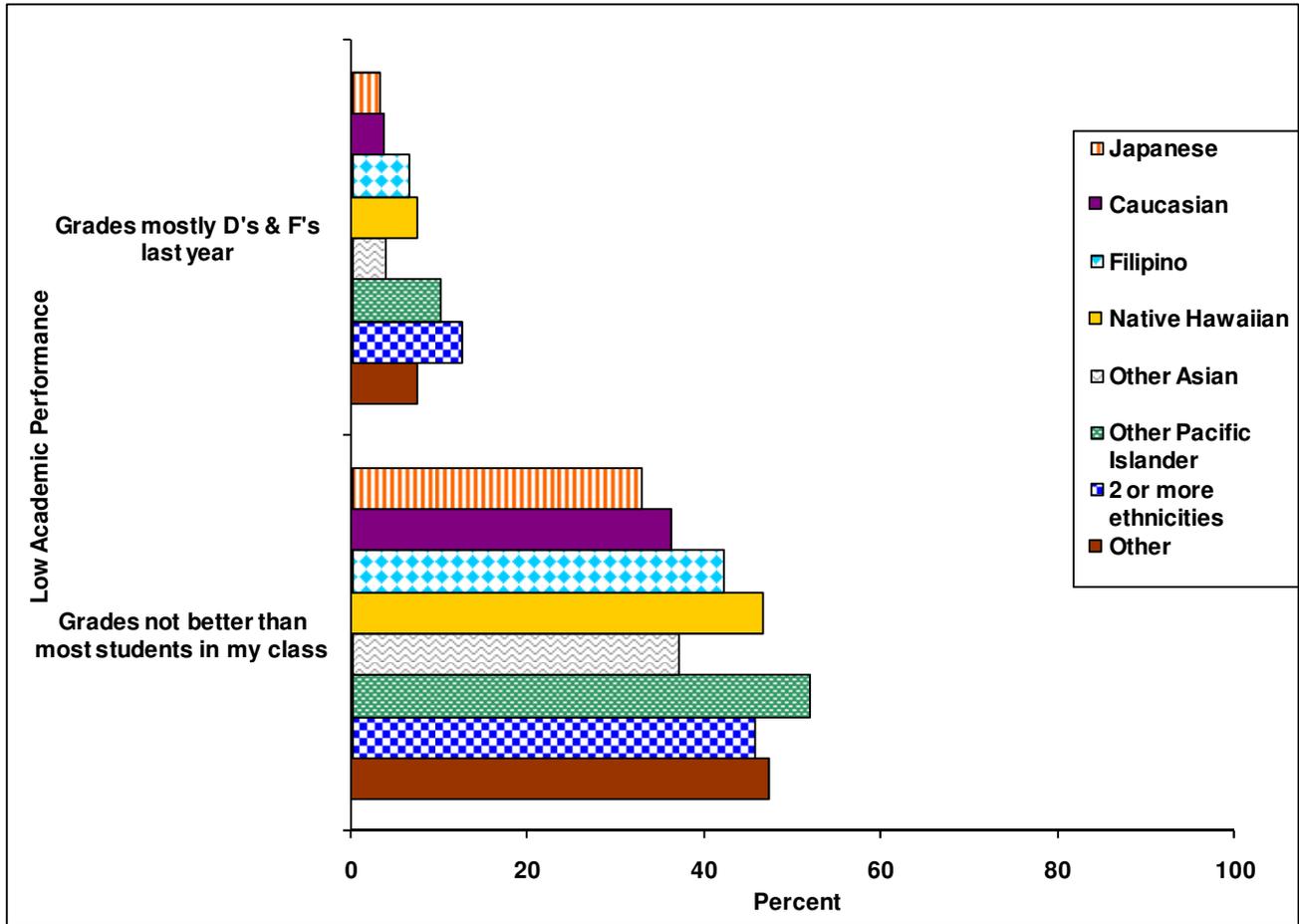


Figure 4d.5. Low Academic Performance by Ethnicity, 2007 (Weighted Data)

Students of Other, 2 or more ethnicities, Native Hawaiian, Other Pacific Islander, and Filipino ethnicities reported higher rates of low academic achievement compared to students of Japanese, Other Asian, and Caucasian ethnic groups. About 3% of Japanese students, 3.8% of Caucasian students, 6.6% of Filipino students, 7.4% of Native Hawaiian students, 3.9% of Other Asian students, 10% of Other Pacific Islander students, 12.4% of students of 2 or more ethnicities, and 7.5% of students of Other ethnicities reported getting mostly D's or F's last year ( $\chi^2=237.5$ ,  $df=7$ ,  $p<.001$ ).

Almost 33% of Japanese students, 36.3% of Caucasian students, 42.1 % of Filipino students, 46.6% of Native Hawaiian students, 37% of Other Asian students, 51.9% of Other Pacific Islander students, 45.6%

of students of 2 or more ethnicities, and 47.3% of students of Other ethnicities reported that their grades were not better than most of the students in their class ( $\chi^2=363.2$ ,  $df=7$ ,  $p<.001$ ).

Table 4d.2. Correlations Between Academic Performance and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Poor Academic Performance	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
What were grades were like last year (low)	.12	.12	.14	.13	.13	.06
School grades better than the grades of most of the students in my class	-.09	-.08	-.11	-.10	-.10	-.06

Overall, academic performance was not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

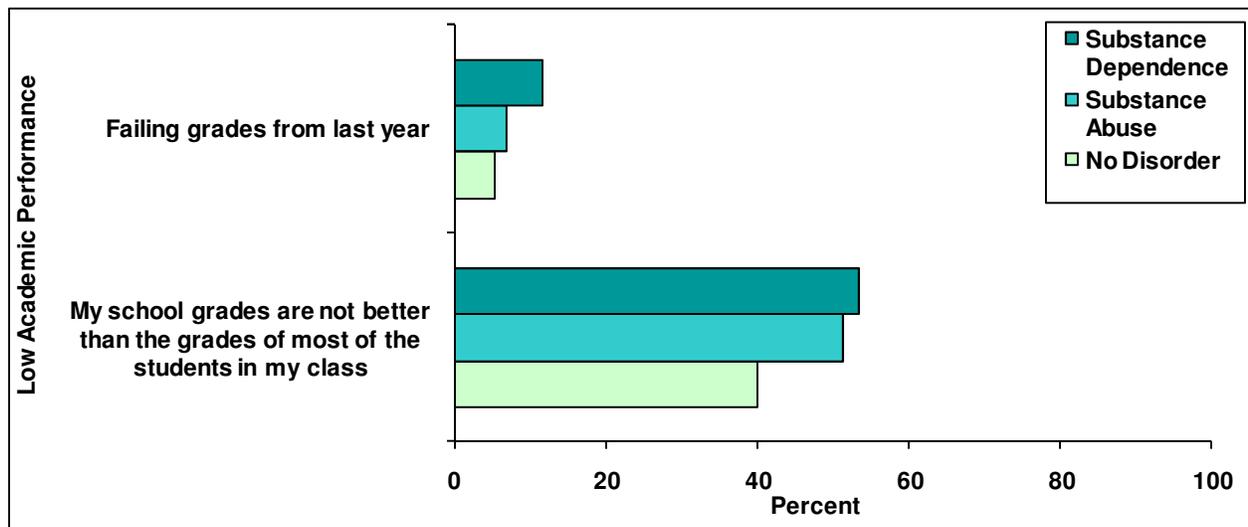


Figure 4d.6. Low Academic Performance by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance dependence and abuse and those without substance abuse or dependence had similar proportions of low academic performance for failing grades from last year (11.6%

dependence, 7% abuse, 5.4% none,  $\chi^2=66.4$ ,  $df=2$ ,  $p<.001$ ) with students who had substance dependence reporting the most failing grades and students with no disorder reporting the least. Students with substance abuse or dependence were significantly more likely to have grades that were not better than most of the students in their class than students with no substance abuse or dependence. However, students with substance abuse and dependence had similar proportions of students with grades not better than most of the students in their class (53.5% dependence, 51.2% abuse vs. 39.9% none,  $\chi^2=110.5$ ,  $df=2$ ,  $p<.001$ ). Students reported this variable more than failing grades regardless of substance abuse or dependence diagnosis.

## EDUCATIONAL ASPIRATIONS

---

Educational aspirations is a factor that was measured by a 4-item, 4-point scale asking students how likely it is they will graduate high school; attend a technical or vocational school after high school; attend college; and graduate from a four-year college. Response choices were: (1) *Definitely won't*; (2) *Probably won't*; (3) *Probably will*; and (4) *Definitely will*. Educational aspirations was defined as responses of *Probably will* and *Definitely will*.

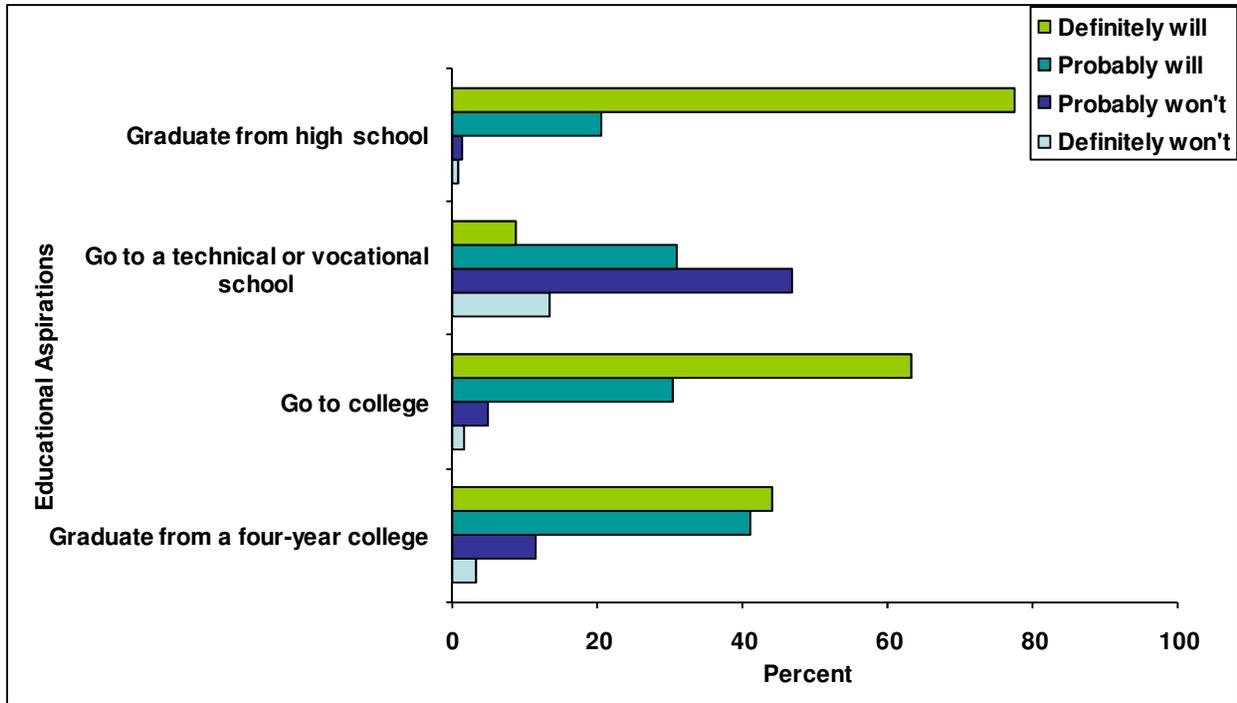


Figure 4d.7. Educational Aspirations, 2007 (Weighted Data)

Slightly more than three-quarters of students indicated they will definitely graduate from high school. Only students that indicated that they definitely plan to attend college approached this level (63.2%). More students reported they probably won't attend a technical school (46.9%) than students who definitely won't (13.4%), probably will (30.9%), and definitely will (8.7%) attend a technical school.

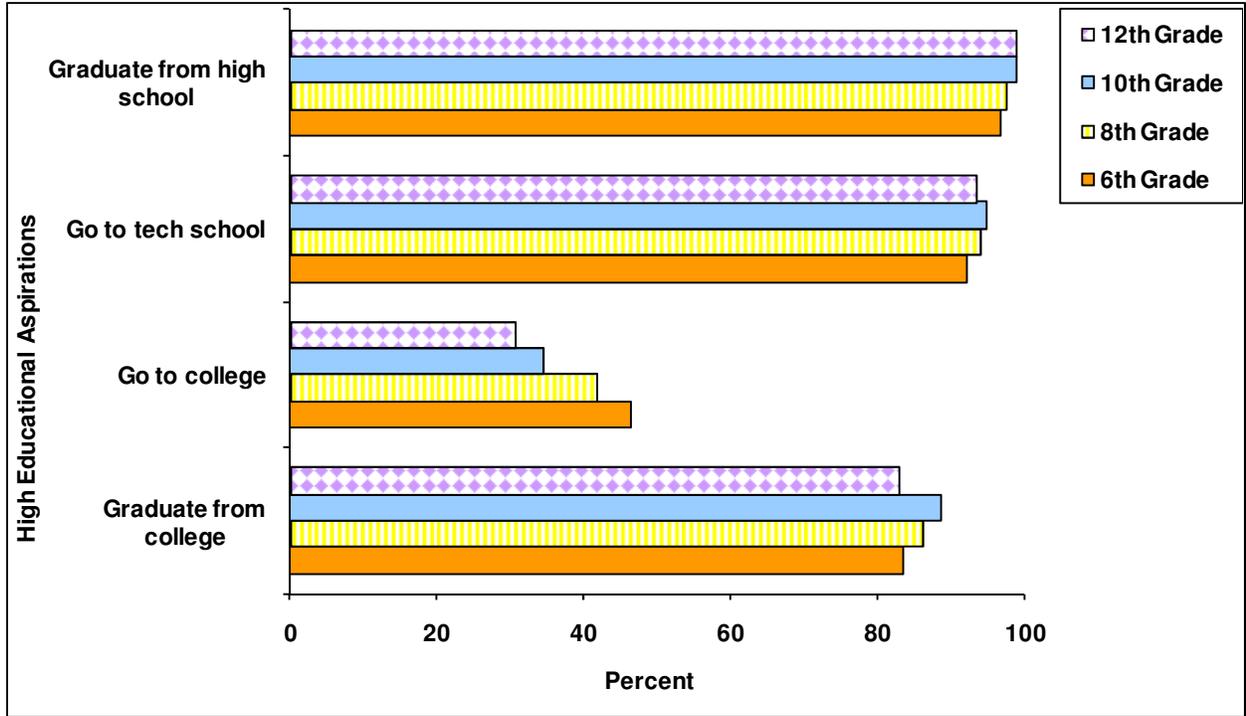


Figure 4d.8. High Educational Aspirations by Grade, 2007 (Weighted Data)

Students in the 10<sup>th</sup> grade were the most likely, and students in the 6<sup>th</sup> grade were the least likely to indicate they had aspirations to graduate from high school (98.9% of 12<sup>th</sup> graders, 99.1% of 10<sup>th</sup> graders, 97.7% of 8<sup>th</sup> graders, and 96.8% of 6<sup>th</sup> graders;  $\chi^2=119.7$ ,  $df=3$ ,  $p<.001$ ), go to college (93.6% of 12<sup>th</sup> graders, 95.1% of 10<sup>th</sup> graders, 94% of 8<sup>th</sup> graders, and 92.3% of 6<sup>th</sup> graders;  $\chi^2=48.6$ ,  $df=3$ ,  $p<.001$ ), and graduate from college (82.9% of 12<sup>th</sup> graders, 88.7% of 10<sup>th</sup> graders, 86.3% of 8<sup>th</sup> graders, and 83.5% of 6<sup>th</sup> graders;  $\chi^2=101.0$ ,  $df=3$ ,  $p<.001$ ).

Students were less likely to indicate that they had plans to go to a technical or vocational school after high school as grade level increased from 6<sup>th</sup> to 12 grade (46.5% of 6<sup>th</sup> graders, 41.7% of 8<sup>th</sup> graders, 34.5% of 10<sup>th</sup> graders, and 30.7% of 12<sup>th</sup> graders;  $\chi^2=409.8$ ,  $df=3$ ,  $p<.001$ ).

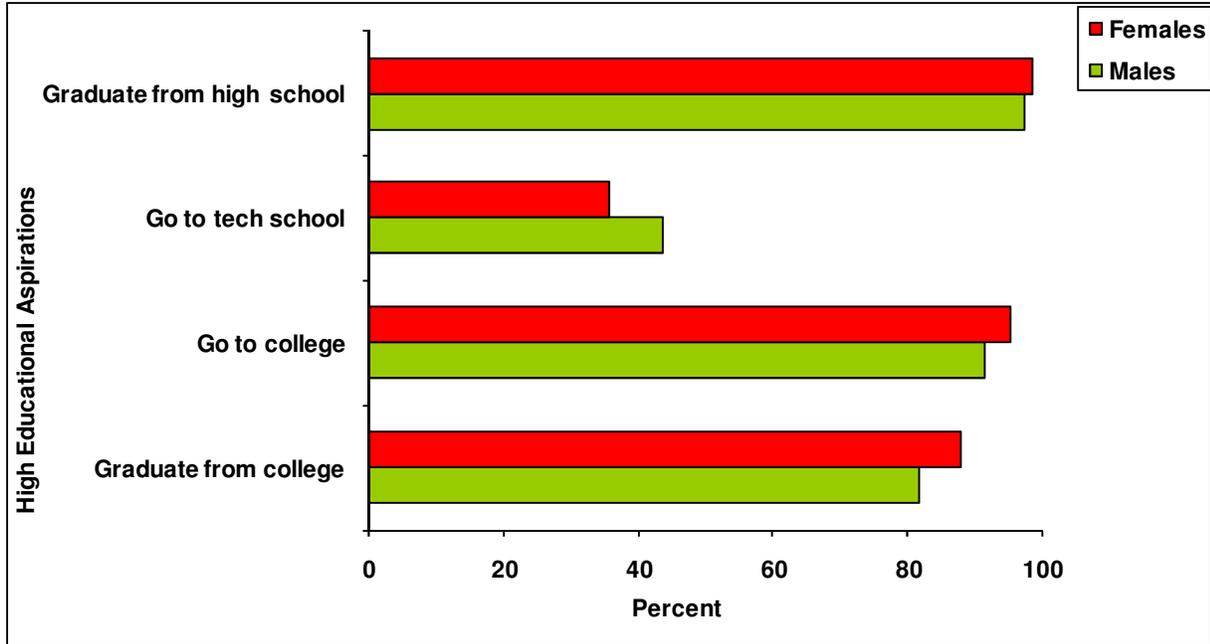


Figure 4d.9. High Educational Aspirations by Gender, 2007 (Weighted Data)

Overall, more females than males had educational aspirations of graduating high school (98.6% vs. 97.3%;  $\chi^2=52.6$ ,  $df=3$ ,  $p<.001$ ), going to college (95.5% vs. 91.6%;  $\chi^2=165.2$ ,  $df=3$ ,  $p<.001$ ), and graduating from college (88.1% vs. 81.8%;  $\chi^2=200.0$ ,  $df=3$ ,  $p<.001$ ). More males than females indicated they were likely to go to a technical or vocational school after high school (43.8% vs. 35.7%;  $\chi^2=165.5$ ,  $df=3$ ,  $p<.001$ ).

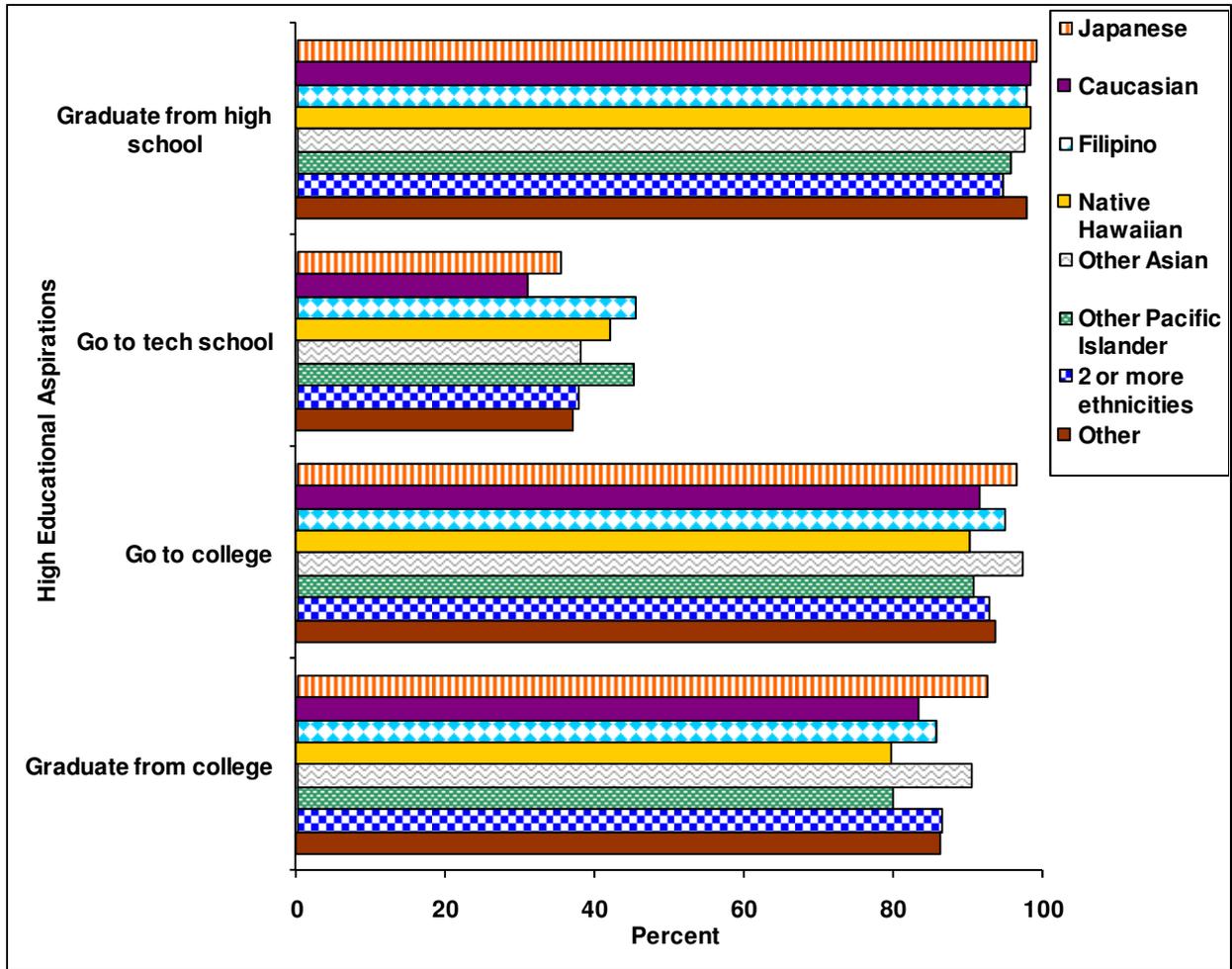


Figure 4d.10. High Educational Aspirations by Ethnicity, 2007 (Weighted Data)

Although a majority of youth indicated they were likely to graduate high school, students of Other Pacific Islander or 2 or more ethnicities had lower rates of these aspirations compared to students of the other ethnic groups (99.2% of Japanese students, 98.5% of Caucasian students, 97.9% of Filipino students, 98.5% of Native Hawaiian students, 97.8% of Other Asian students, 95.9% of Other Pacific Islander students, 94.7% of students of 2 or more ethnicities, and 98% of students of Other ethnicities;  $X^2=127.3$ ,  $df=7$ ,  $p<.001$ ).

Differences by ethnicity in plans to go to college (96.7% of Japanese students, 91.8% of Caucasian students, 95% of Filipino students, 90.5% of Native Hawaiian students, 97.3% of Other Asian students,

90.7% of Other Pacific Islander students, 92.9% of students of 2 or more ethnicities, and 93.9% of students of Other ethnicities;  $\chi^2=258.7$ ,  $df=7$ ,  $p<.001$ ) were similar to plans for graduating college (92.7% of Japanese students, 83.6% of Caucasian students, 85.8% of Filipino students, 79.9% of Native Hawaiian students, 90.5% of Other Asian students, 80% of Other Pacific Islander students, 86.7% of students of 2 or more ethnicities, and 86.4% of students of Other ethnicities;  $\chi^2=364.1$ ,  $df=7$ ,  $p<.001$ ).

Students of Filipino, Other Pacific Islander and Native Hawaiian ethnicities were more likely to indicate plans for going to a technical or vocational school after high school than the other ethnic groups (35.4% of Japanese students, 31% of Caucasian students, 45.5% of Filipino students, 42.1% of Native Hawaiian students, 38% of Other Asian students, 45.2% of Other Pacific Islander students, 37.9% of students of 2 or more ethnicities, and 37.2% of students of Other ethnicities;  $\chi^2=302.6$ ,  $df=7$ ,  $p<.001$ ).

Table 4d.3. Correlations Between Educational Aspirations and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factor: Educational Aspirations	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How likely to graduate from high school	-.02	-.06	-.08	-.06	-.08	-.11
How likely to go to a technical or vocational school after high school	-.05	-.04	-.03	-.06	-.03	-.01
How likely to go to college	-.11	-.11	-.12	-.13	-.14	-.13
How likely to graduate from a four-year college	-.10	-.10	-.11	-.12	-.13	-.10

The following general categories indicate a quick way of interpreting a correlation value: 0.0 to  $\pm 0.2$  Negligible;  $\pm 0.2$  to 0.4 Weak;  $\pm 0.4$  to 0.7 Moderate; and  $\pm 0.7$  and above Strong. Overall, educational aspirations were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm .20$ ).

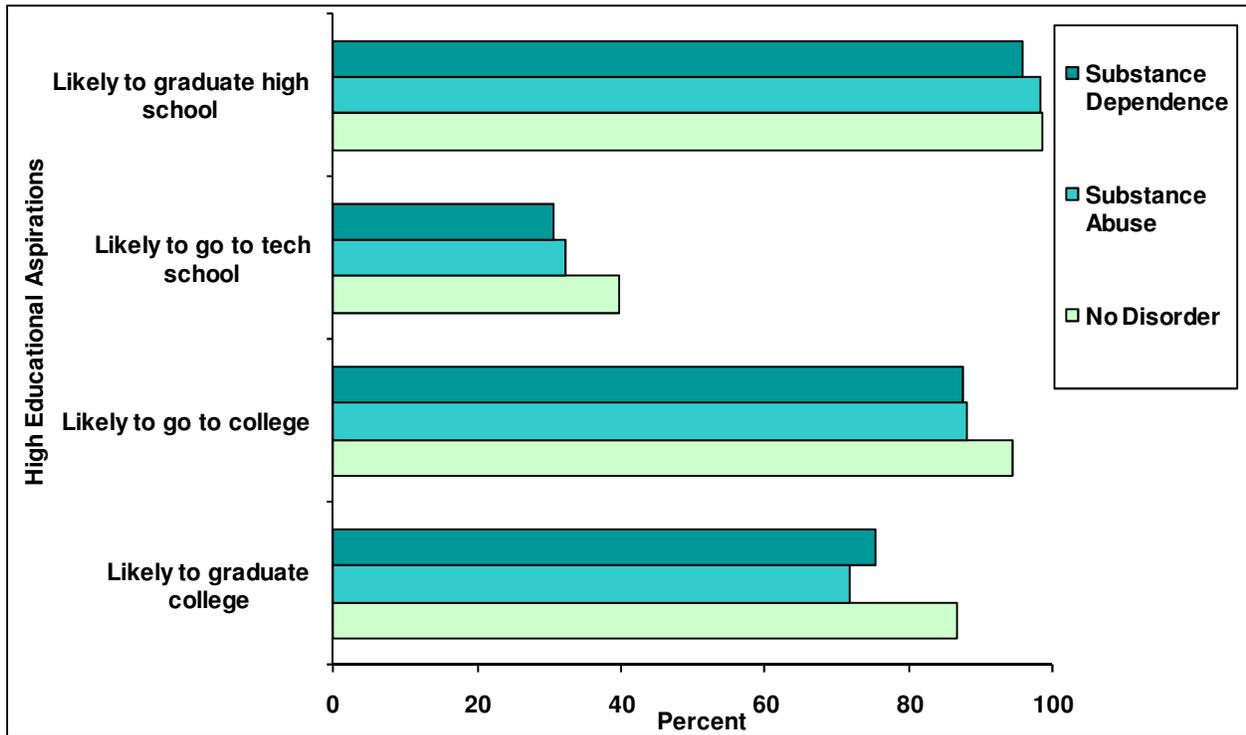


Figure 4d.11. High Educational Aspirations by Student Substance Abuse and Dependence, 2007 (Weighted Data)

More students with no substance abuse or dependence indicated high educational aspirations than students with a substance abuse or dependence diagnosis. However, students with substance dependence and abuse and those without substance abuse or dependence had similar proportions of high educational aspirations for being likely to graduate high school (95.9% dependence, 98.3% abuse, 98.5% none,  $\chi^2=36.7$ ,  $df=2$ ,  $p<.001$ ); likely to go to tech school (30.5% dependence, 32.3% abuse, 39.7% none,  $\chi^2=47.9$ ,  $df=2$ ,  $p<.001$ ); and likely to go to college (87.5% dependence, 88% abuse, 94.5% none,  $\chi^2=134.2$ ,  $df=2$ ,  $p<.001$ ). The proportions of high educational aspirations were similar for students with abuse and dependence and lower for no substance abuse or dependence for likely to graduate college (75.5% dependence, 71.9% abuse, 86.8% none,  $\chi^2=236.9$ ,  $df=2$ ,  $p<.001$ ).

## SCHOOL COMMITMENT

---

School Commitment was based on three scales. The first was a 1-item, 5-point scale assessing how important students think the things they are learning in school are going to be later in life. Response choices were (1) *Very important*, (2) *Quite important*, (3) *Fairly important*, (4) *Slightly important*, and (5) *Not at all important*. Low school commitment was defined using the *Never* and *Sometimes* responses. Low school commitment was defined using the *Not at all important* and *Slightly important* responses.

The second scale included 1 item on a 5-point scale which asked students how interesting their classes were. Response choices were (1) *Very interesting*, (2) *Quite interesting*, (3) *Fairly interesting*, (4) *Slightly dull*, and (5) *Very dull*. Low school commitment was defined using the *Very dull* and *Slightly dull* responses.

The third scale included 4 items on a 5-point scale which asked students how often they felt that the work assigned to them was meaningful and important over the past year, how often they enjoyed being in school over the past year, how often they hated being in school over the past year, and how often they tried to do their best work in school over the past year. Response choices were: (1) *Almost always*; (2) *Often*; (3) *Sometimes*; (4) *Seldom*; (5) *Never*. Low school commitment was defined using the *Never* and *Sometimes* responses.

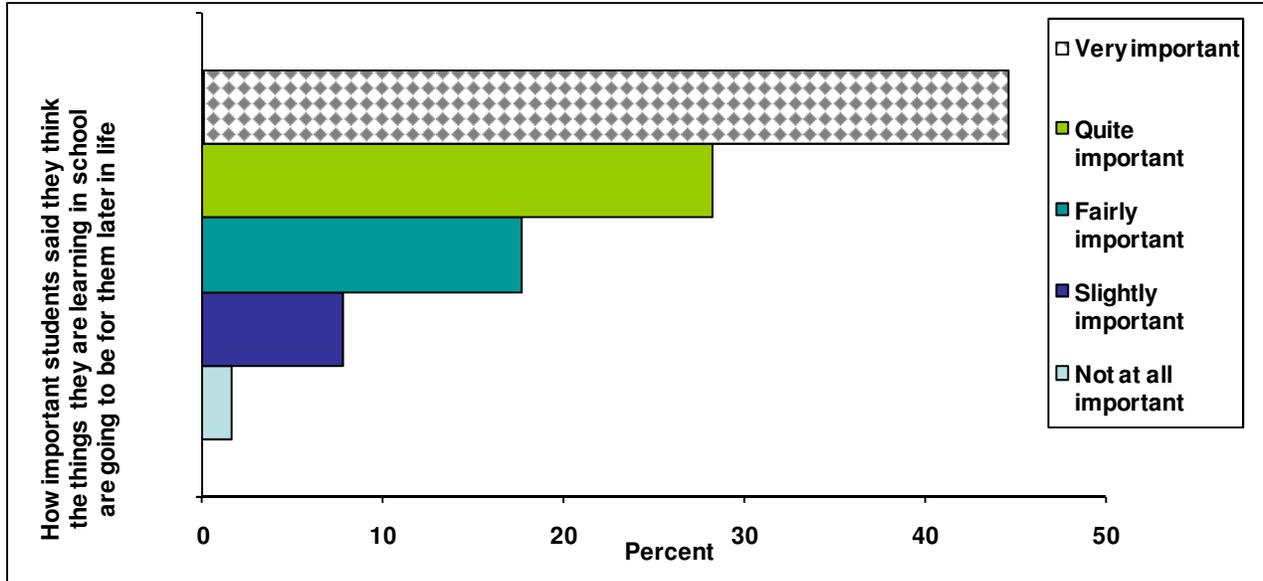


Figure 4d.12. School Commitment, 2007 (Weighted Data)

Students were most likely to indicate that the things they are learning in school will be very important for them later in life (44.6%) followed by quite important (28.3%), fairly important (17.7%), slightly important (7.8%), and not at all important (1.6%).

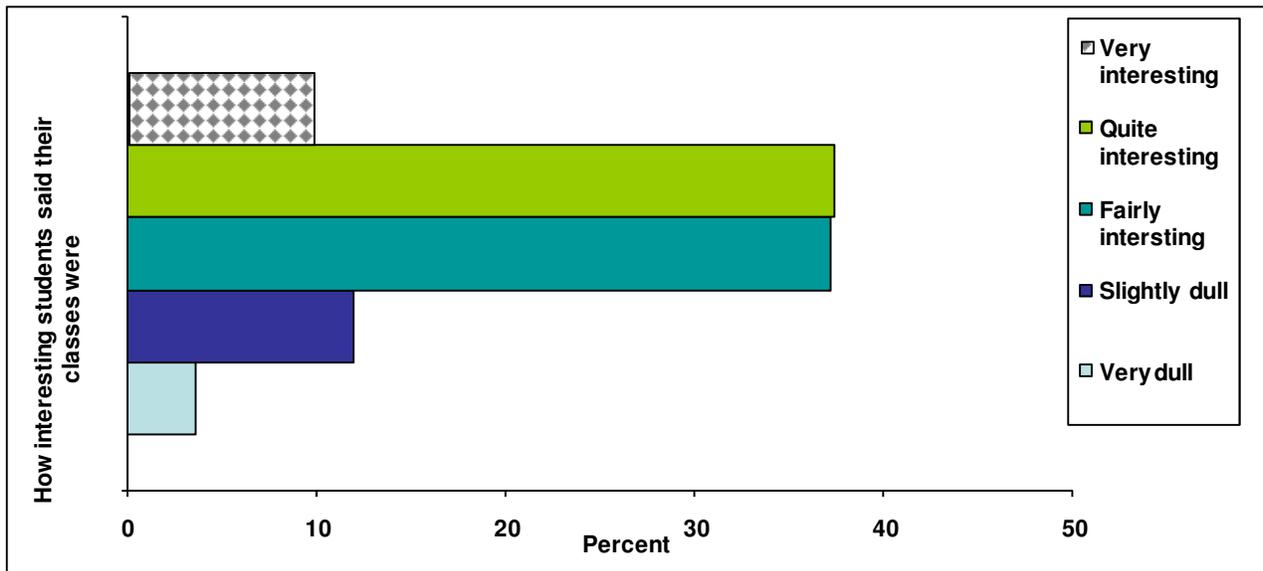


Figure 4d.13. School Commitment (continued), 2007 (Weighted Data)

Only 9.8% of students found their classes to be very interesting. Approximately 4% of students found their classes to be very dull. Most students indicated their classes were quite interesting (37.4%) or fairly interesting (37.2%) while only 11.9% of students found their classes to be slightly dull.

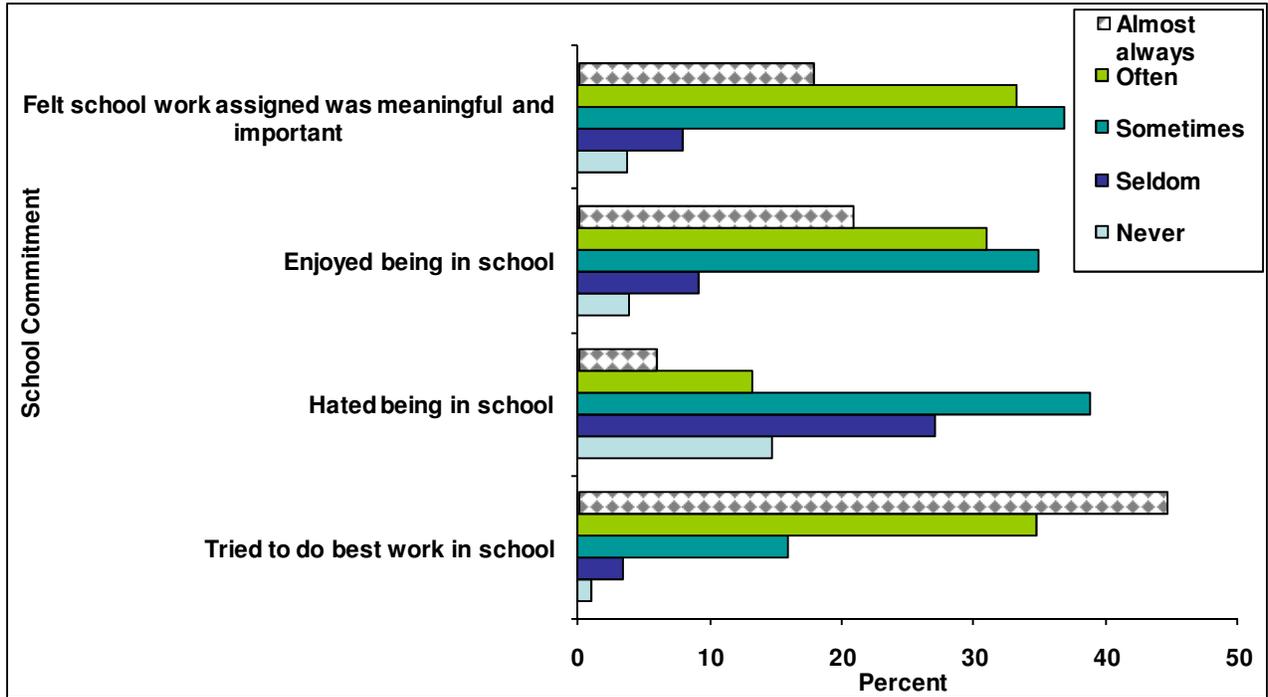


Figure 4d.14. School Commitment (continued), 2007 (Weighted Data)

More students reported they sometimes enjoyed being in school, hated being in school, and felt school work was meaningful and important than students who almost always, often, seldom, or never had these feelings about school. However, more students reported almost always trying to do their best work in school than any other variable.

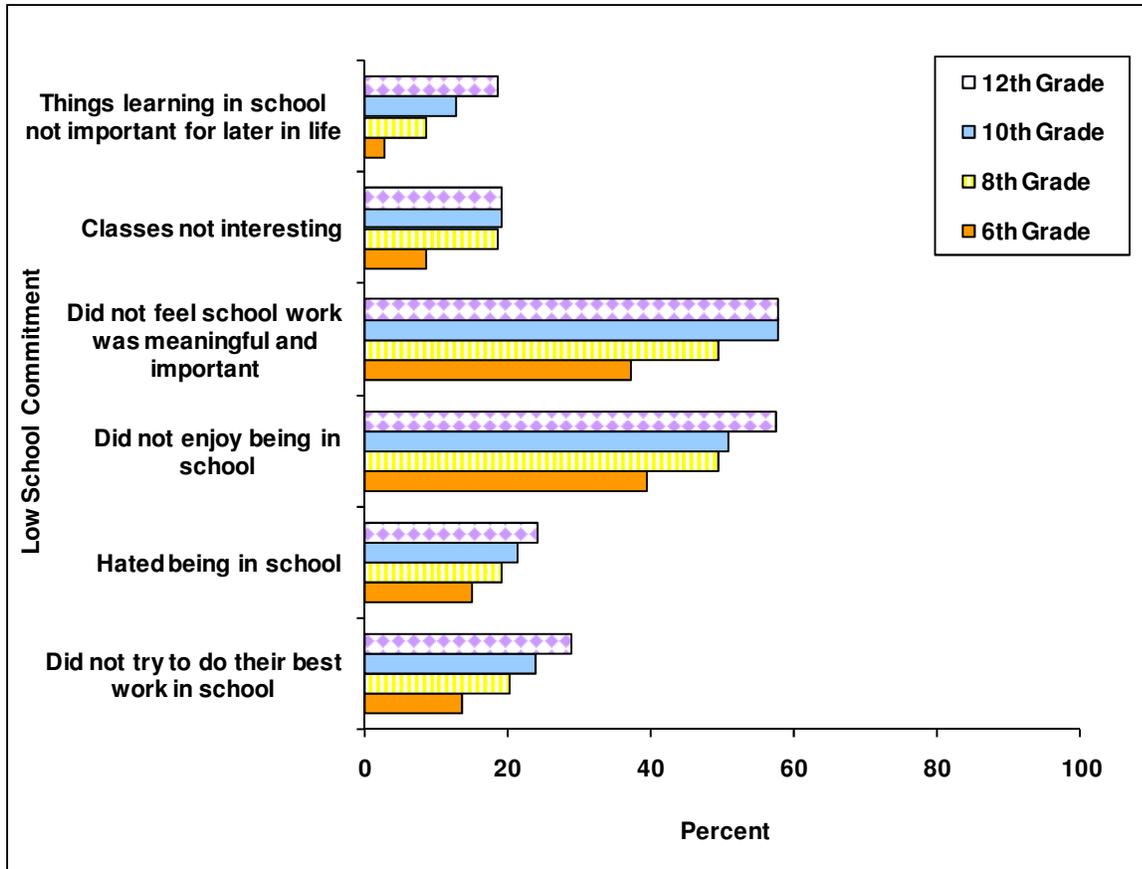


Figure 4d.15. Low School Commitment by Grade, 2007 (Weighted Data)

Overall, rates of low school commitment were highest for 12<sup>th</sup> grade followed by 10<sup>th</sup> grade, 8<sup>th</sup> grade, and 6<sup>th</sup> grade, respectively. Students in the 6<sup>th</sup> grade were the least likely, with 12<sup>th</sup> graders the most likely, to have low school commitment. Almost 19% of 12<sup>th</sup> graders, 12.7% of 10<sup>th</sup> graders, 8.8% of 8<sup>th</sup> graders, and 2.7% of 6<sup>th</sup> graders thought that the things they were learning in school would not be important later in life ( $\chi^2=1091.6$ ,  $df=3$ ,  $p<.001$ ). Approximately 19.2% of 12<sup>th</sup> graders, 19.3% of 10<sup>th</sup> graders, 18.7% of 8<sup>th</sup> graders, and 8.7% of 6<sup>th</sup> graders thought their classes were not interesting ( $\chi^2=493.7$ ,  $df=3$ ,  $p<.001$ ).

Differences by grade level in feeling that school work was not meaningful or important (57.9% of 12<sup>th</sup> graders, 57.8% of 10<sup>th</sup> graders, 49.6% of 8<sup>th</sup> graders, and 37.2% of 6<sup>th</sup> graders;  $\chi^2=845.8$ ,  $df=3$ ,  $p<.001$ )

were similar to rates of students not enjoying school (57.6% of 12<sup>th</sup> graders, 51% of 10<sup>th</sup> graders, 49.5% of 8<sup>th</sup> graders, and 39.6% of 6<sup>th</sup> graders;  $\chi^2=475.9$ ,  $df=3$ ,  $p<.001$ ).

About 15% of 6<sup>th</sup> graders, 19.2% of 8<sup>th</sup> graders, 21.5% of 10<sup>th</sup> graders, and 24.3% of 12<sup>th</sup> graders ( $\chi^2=203.1$ ,  $df=3$ ,  $p<.001$ ) hated being in school, similar to rates of students reporting that they did not try to do their best work in school (13.7% of 6<sup>th</sup> graders, 20.3% of 8<sup>th</sup> graders, 24% of 10<sup>th</sup> graders, and 28.9% of 12<sup>th</sup> graders;  $\chi^2=521.4$ ,  $df=3$ ,  $p<.001$ ).

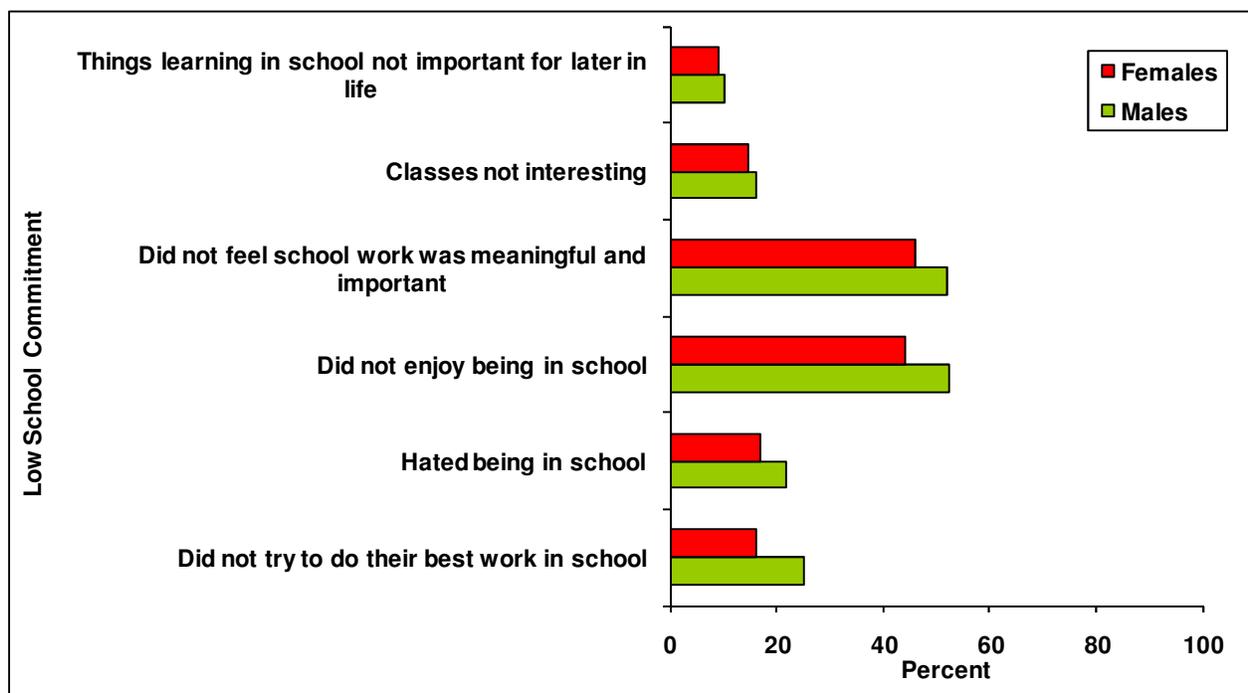


Figure 4d.16. Low School Commitment by Gender, 2007 (Weighted Data)

Overall, more males than females had low school commitment. Ten percent of males compared to 9.1% of females thought that the things they were learning in school would not be important later in life ( $\chi^2=6.9$ ,  $df=3$ ,  $p<.01$ ). About 16% of males compared to 14.5% of females thought their classes were not interesting ( $\chi^2=16.0$ ,  $df=3$ ,  $p<.001$ ).

More males reported that school work was not meaningful or important (51.9% vs. 46%;  $\chi^2=89.5$ ,  $df=3$ ,  $p<.001$ ) and not enjoying school (52.3 % vs. 44.1%;  $\chi^2=170.6$ ,  $df=3$ ,  $p<.001$ ) were similar. More males also reported that they hated being in school (21.7% vs. 17%;  $\chi^2=92.3$ ,  $df=3$ ,  $p<.001$ ) and that they were similar to students reporting that they did not try to do their best work in school (25.2% vs. 16.2%;  $\chi^2=312.7$ ,  $df=3$ ,  $p<.001$ ).

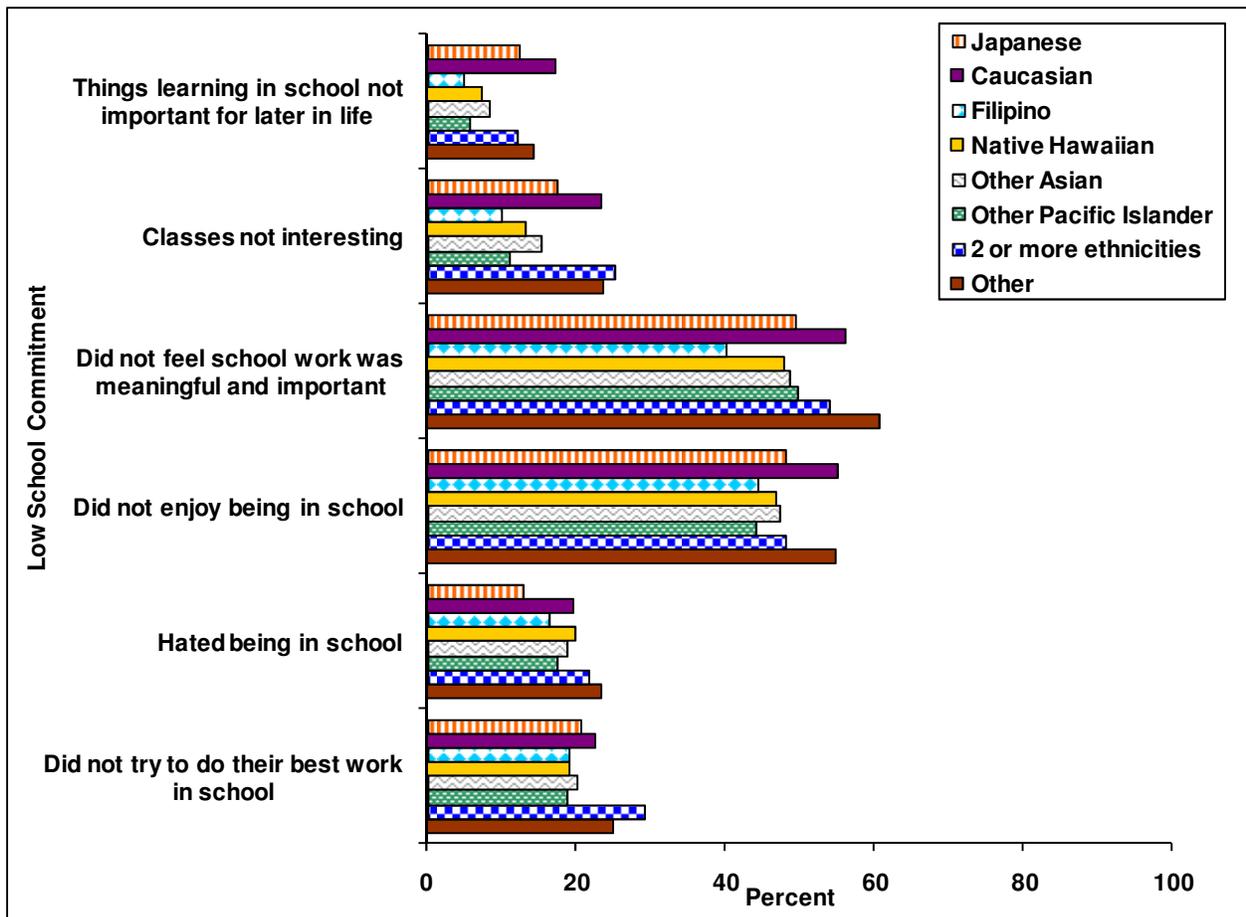


Figure 4d.17. Low School Commitment by Ethnicity, 2007 (Weighted Data)

There were significant differences by ethnicity in low school commitment. Generally, students of Caucasian and Japanese ethnicity were more likely, and students of Filipino and Other Pacific Islander ethnicities less likely, to indicate low school commitment. Students of 2 or more or Other ethnicities were also likely to report that they thought the things learned in school would not be important for later in life

(12.4% of Japanese students, 17.3% of Caucasian students, 5% of Filipino students, 7.4% of Native Hawaiian students, 8.5% of Other Asian students, 5.6% of Other Pacific Islander students, 12.1% of students of 2 or more ethnicities, and 14.3% of students of Other ethnicities;  $\chi^2=639.5$ ,  $df=7$ ,  $p<.001$ ) and that their classes were not interesting (17.4% of Japanese students, 23.3% of Caucasian students, 9.9% of Filipino students, 13.2% of Native Hawaiian students, 15.2% of Other Asian students, 11.1% of Other Pacific Islander students, 25.2% of students of 2 or more ethnicities, and 23.8% of students of Other ethnicities;  $\chi^2=582.8$ ,  $df=7$ ,  $p<.001$ ).

About 49% of Japanese students, 56.3% of Caucasian students, 40.2% of Filipino students, 47.9% of Native Hawaiian students, 48.7% of Other Asian students, 49.7% of Other Pacific Islander students, 53.9% of students of 2 or more ethnicities, and 60.6% of students of Other ethnicities reported that they did not feel that school work was meaningful or important ( $\chi^2=412$ ,  $df=7$ ,  $p<.001$ ). Similarly, 48.1% of Japanese students, 55.2% of Caucasian students, 44.3% of Filipino students, 46.8% of Native Hawaiian students, 47.2% of Other Asian students, 44% of Other Pacific Islander students, 48.2% of students of 2 or more ethnicities, and 54.9% of students of Other ethnicities reported that they did not enjoy school ( $\chi^2=183.7$ ,  $df=7$ ,  $p<.001$ ).

Almost 9% of Japanese students, 22.6% of Caucasian students, 16.4% of Filipino students, 20% of Native Hawaiian students, 18.8% of Other Asian students, 17.5% of Other Pacific Islander students, 21.7% of students of 2 or more ethnicities, and 23.4% of students of Other ethnicities reported they hated being in school ( $\chi^2=98.2$ ,  $df=7$ ,  $p<.001$ ). Students also reported similarly that they did not try to do their best work in school (20.6% of Japanese students, 22.5% of Caucasian students, 19% of Filipino students, 19.1% of Native Hawaiian students, 20.1% of Other Asian students, 18.9% of Other Pacific Islander students, 29.2% of students of 2 or more ethnicities, and 24.9% of students of Other ethnicity; ( $\chi^2=79.5$ ,  $df=7$ ,  $p<.001$ ).

Table 4d.4. Correlations Between School Commitment and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factor: School Commitment	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How important things learning in school are going to be later in life	-.20	-.18	-.14	-.21	-.20	-.15
How interesting are most classes	-.18	-.17	-.13	-.17	-.17	-.13
How often felt school work was meaningful and important	-.17	-.17	-.14	-.18	-.18	-.14
How often tried to do best work in school	-.18	-.16	-.16	-.19	-.20	-.15
How often hated being in school	.14	.13	.13	.14	.13	.09
How often enjoyed being in school	-.14	-.14	-.13	-.16	-.15	-.12

Most measures of school commitment were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ). The more important students thought the things learned in school were going to be later in life was mildly, negatively correlated with monthly alcohol use, marijuana use, and being drunk or high at school. Trying to do best work in school was mildly, negatively correlated with being drunk or high at school.

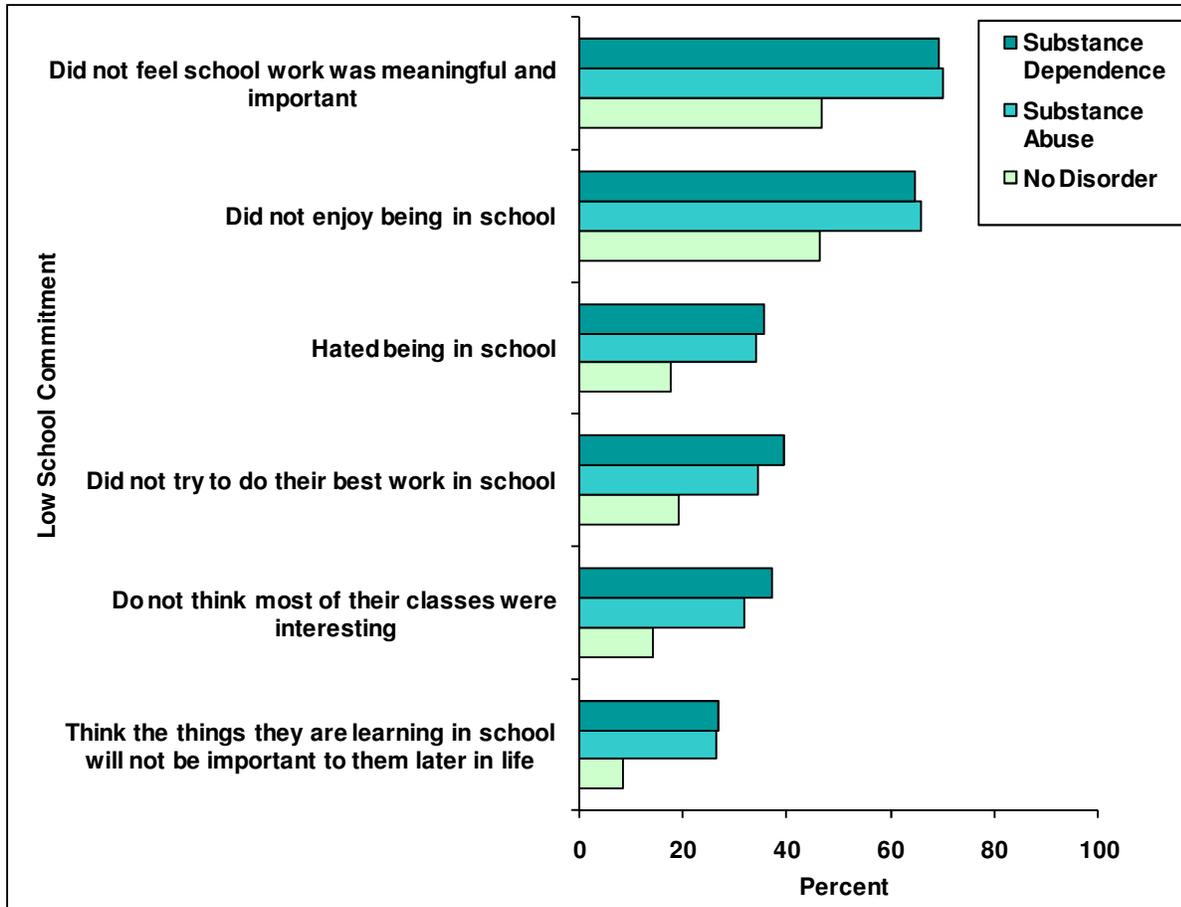


Figure 4d.18. Low School Commitment by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to have low school commitment. Students with substance abuse and dependence had similar proportions of low school commitment but significantly more than students without substance abuse or dependence for not feeling school work was meaningful and important (69.5% dependence, 70.1% abuse vs. 46.8% none,  $X^2=359.1$ ,  $df=2$ ,  $p<.001$ ); not enjoying being in school (64.6% dependence, 65.9% abuse vs. 46.4% none,  $X^2=242.9$ ,  $df=2$ ,  $p<.001$ ); hating being in school (35.7% dependence, 34.1% abuse vs. 17.8% none,  $X^2=319.9$ ,  $df=2$ ,  $p<.001$ ); trying to do their best work in school (39.4% dependence, 34.6% abuse vs. 19.1% none,  $X^2=341.9$ ,  $df=2$ ,  $p<.001$ ); not thinking most of their classes are interesting (37.1% dependence, 31.8% abuse vs. 14.2% none,  $X^2=536.0$ ,  $df=2$ ,  $p<.001$ ); and students thinking things they are learning in school will not be important to them later in life (26.7% dependence, 26.4% abuse vs. 8.4% none,  $X^2=625.1$ ,  $df=2$ ,  $p<.001$ ).

## SCHOOL OPPORTUNITIES FOR POSITIVE INVOLVEMENT

School Opportunities for Positive Involvement was a factor based on a 4-item, 4-point scale asking students whether students have chances to help decide things like class activities and rules in their school; whether there are a lot of chances for students to talk with a teacher one-on-one; whether there are chances for students in school to get involved with sports, clubs, and school activities outside of class; and whether the student has a lot of chances to participate in class discussions or activities. Response choices were: (0) *NO!*; (1) *no*; (2) *yes*; and (3) *YES!*. School opportunities for positive involvement was defined as responses of *YES!* or *yes*.

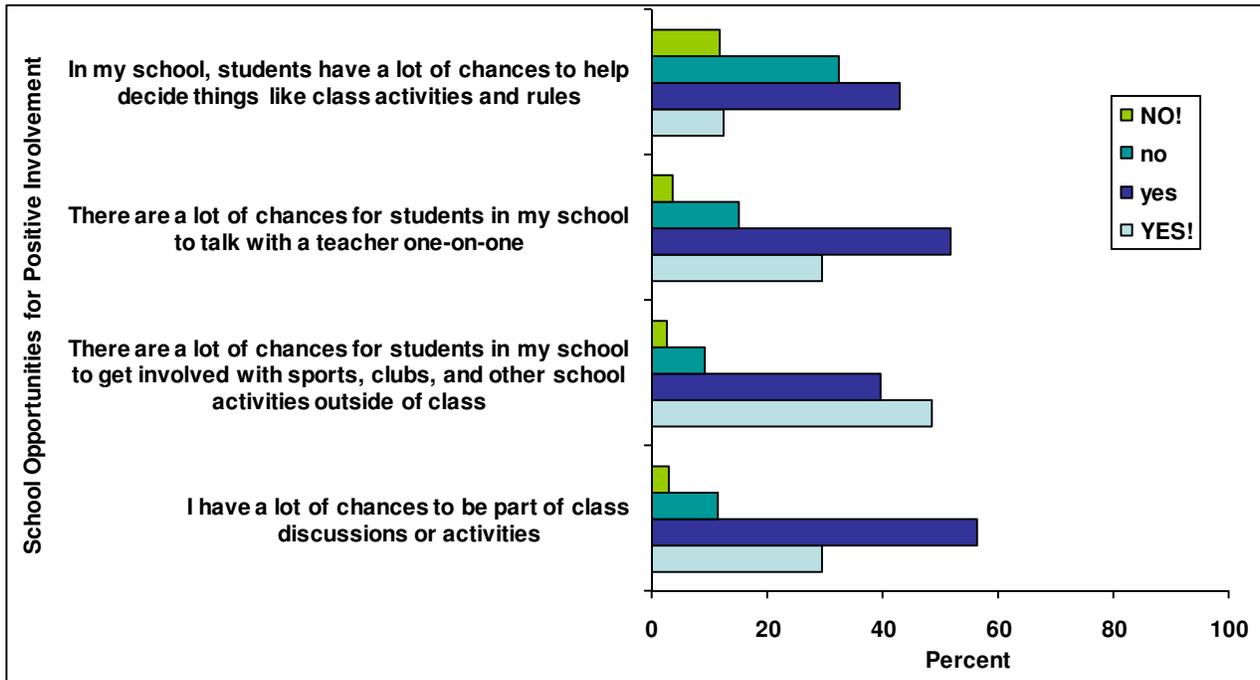


Figure 4d.19. School Opportunities for Positive Involvement, 2007 (Weighted Data)

More students reported opportunities for positive involvement than those who reported lack of opportunities for positive involvement in school. Students were also more likely to have chances to be involved with sports, clubs, or other activities outside of class (88.2%) or to be part of class discussions or

activities (85.7%) than to talk with a teacher one-on-one (81.2%) or have chances to decide things like class activities (55.5%).

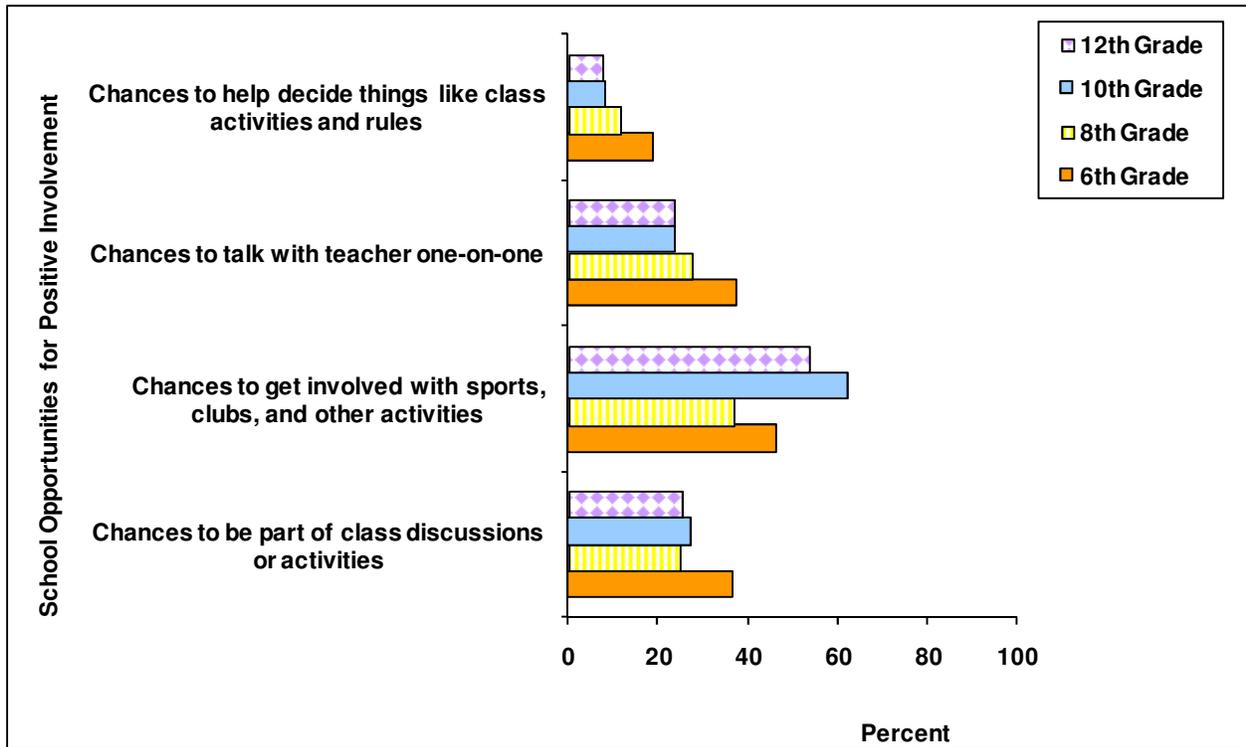


Figure 4d.20. School Opportunities for Positive Involvement by Grade, 2007 (Weighted Data)

Overall, with the exception of opportunities for sports or clubs, 6<sup>th</sup> graders reported the highest rates, and 12<sup>th</sup> graders the lowest rates, of school opportunities for positive involvement. Almost 8% of 12<sup>th</sup> graders, 8.4% of 10<sup>th</sup> graders, 11.7% of 8<sup>th</sup> graders, and 18.7% of 6<sup>th</sup> graders indicated there were chances to help decide things like class activities and rules ( $\chi^2=496.9$ ,  $df=3$ ,  $p<.001$ ). Approximately 23.5% of 12<sup>th</sup> graders, 23.8% of 10<sup>th</sup> graders, 27.9% of 8<sup>th</sup> graders, and 37.5% of 6<sup>th</sup> graders reported there were chances to talk with a teacher one-on-one ( $\chi^2=462.7$ ,  $df=3$ ,  $p<.001$ ). About 25.3% of 12<sup>th</sup> graders, 27.3% of 10<sup>th</sup> graders, 25.1% of 8<sup>th</sup> graders, and 36.6% of 6<sup>th</sup> graders indicated there were chances to be part of class discussions or activities ( $\chi^2=345.5$ ,  $df=3$ ,  $p<.001$ ).

Tenth and 12<sup>th</sup> graders were more likely to report having opportunities to be involved in sports, clubs, or other activities than 6<sup>th</sup> or 8<sup>th</sup> graders (53.7% of 12<sup>th</sup> graders, 62.1% of 10<sup>th</sup> graders, 37.1% of 8<sup>th</sup> graders, and 46.3% of 6<sup>th</sup> graders;  $\chi^2=853.8$ ,  $df=3$ ,  $p<.001$ ).

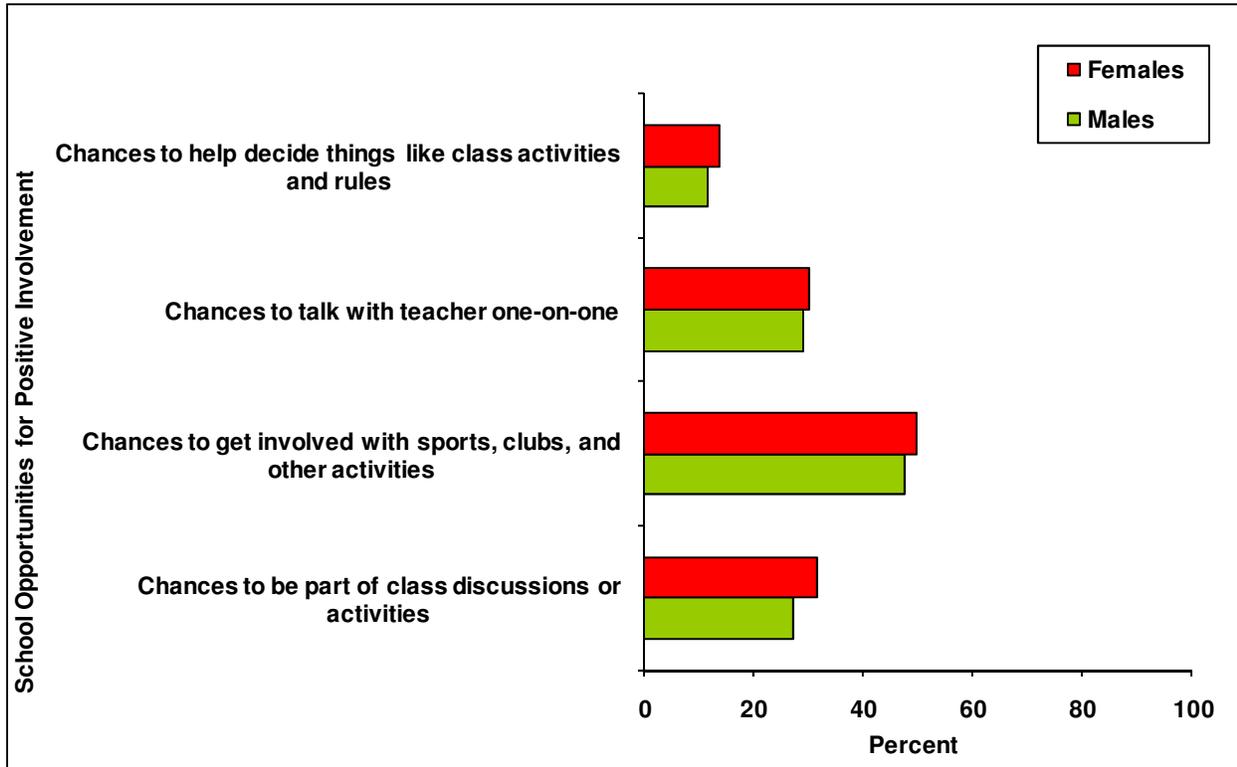


Figure 4d.21. School Opportunities for Positive Involvement by Gender, 2007 (Weighted Data)

Overall, more females than males reported school opportunities for positive involvement. Approximately 11.5% of males compared to 13.6% of females thought that they had chances to help decide things like class activities and rules ( $\chi^2=28.4$ ,  $df=1$ ,  $p<.01$ ). Almost 48% of males compared to 49.9% of females indicated there were opportunities for being involved in sports, clubs, and other activities outside of class ( $\chi^2=12.2$ ,  $df=1$ ,  $p<.001$ ). About 27% of males compared to 31.7% of females reported there were chances to be part of class discussions or activities ( $\chi^2=63.7$ ,  $df=1$ ,  $p<.001$ ). There were no significant differences between male (29.1%) and female (30%) students for opportunities to talk with teachers one-on-one ( $\chi^2=63.7$ ,  $df=1$ ,  $p<.001$ ).

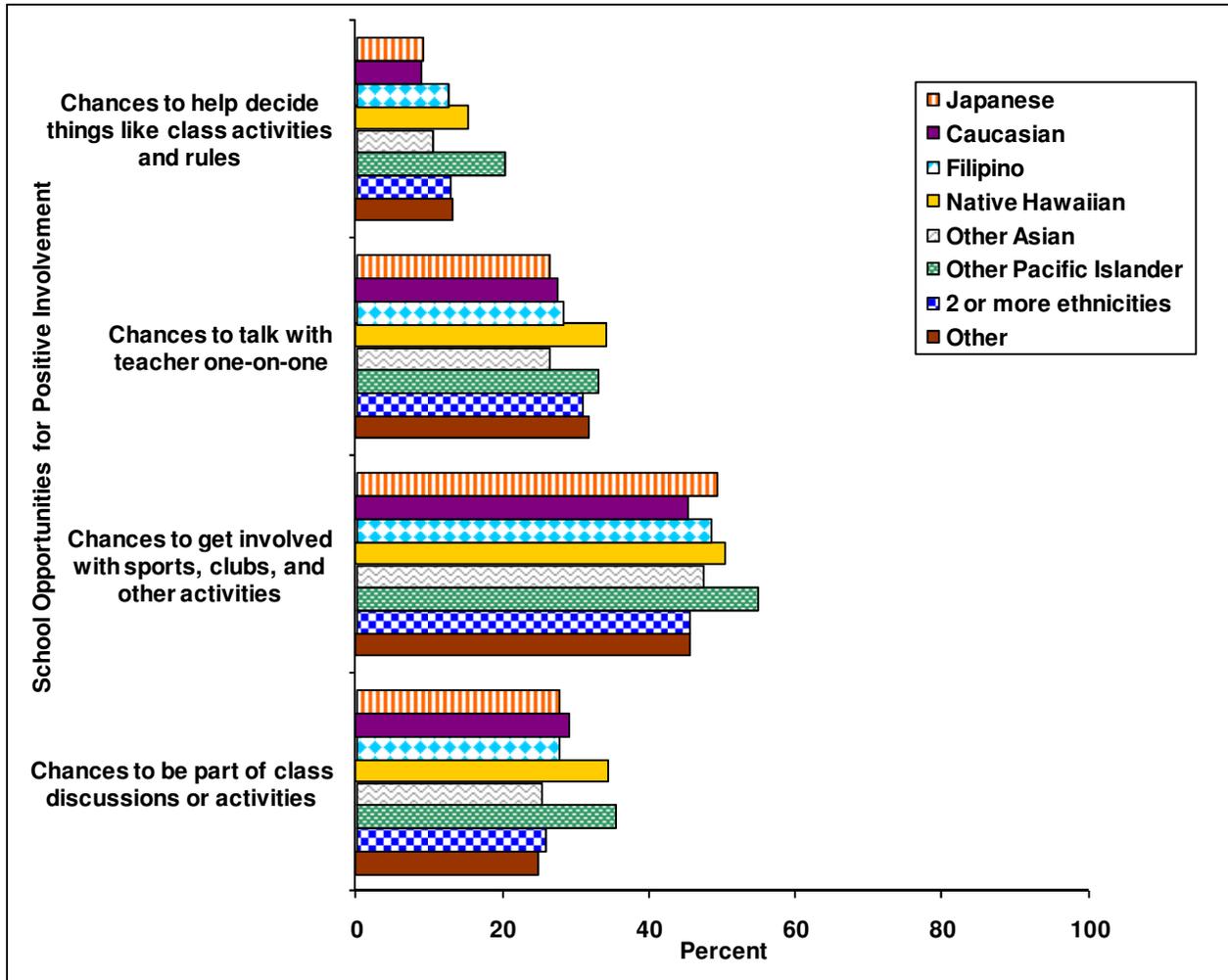


Figure 4d.22. School Opportunities for Positive Involvement by Ethnicity, 2007 (Weighted Data)

Generally, students of Native Hawaiian and Other Pacific Islander ethnicity reported the highest rates of school opportunities for positive involvement compared to other ethnic groups. About 9% of Japanese students, 8.9% of Caucasian students, 12.7% of Filipino students, 15.4% of Native Hawaiian students, 10.4% of Other Asian students, 20.4% of Other Pacific Islander students, 13% of students of 2 or more ethnicities, and 13.3% of students of Other ethnicities reported there were chances to help decide things like class activities and rules ( $\chi^2=272.9$ ,  $df=7$ ,  $p<.001$ ). Twenty-six and a half percent of Japanese students, 27.6% of Caucasian students, 28.2% of Filipino students, 34.1% of Native Hawaiian students, 26.4% of Other Asian students, 33.2% of Other Pacific Islander students, 31% of students of 2 or more

ethnicities, and 31.8% of students of Other ethnicities indicated there were opportunities to talk with teachers one-on-one ( $\chi^2=104.4$ ,  $df=7$ ,  $p<.001$ ).

About 49% of Japanese students, 45.3% of Caucasian students, 48.5% of Filipino students, 50.4% of Native Hawaiian students, 47.5% of Other Asian students, 55% of Other Pacific Islander students, 45.7% of students of 2 or more ethnicities, and 45.7% of students of Other ethnicities reported that there were opportunities to get involved in sports, clubs, or other school activities outside of class ( $\chi^2=77.6$ ,  $df=7$ ,  $p<.001$ ). Almost 28% of Japanese students, 29.2% of Caucasian students, 27.7% of Filipino students, 34.4% of Native Hawaiian students, 25.3% of Other Asian students, 35.4% of Other Pacific Islander students, 26% of students of 2 or more ethnicities, and 24.8% of students of Other ethnicities reported that they had chances to be part of class discussions or activities ( $\chi^2=151.2$ ,  $df=7$ ,  $p<.001$ ).

Table 4d.5. Correlations Between School Opportunities for Positive Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Protective Factor: School Opportunities for Positive Involvement</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Students have a lot of chances to help decide things like class activities and rules	-0.08	-0.06	-0.04	-0.07	-0.07	-0.07
A lot of chances for students to talk with teachers one-on-one	-0.10	-0.11	-0.09	-0.11	-0.10	-0.11
A lot of chances for students to get involved with sports, clubs, and other school activities outside of class	-0.04	-0.05	-0.07	-0.06	-0.06	-0.08
A lot of chances to be part of class discussions or activities	-0.09	-0.09	-0.09	-0.09	-0.11	-0.12

Overall, school opportunities for positive involvement were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

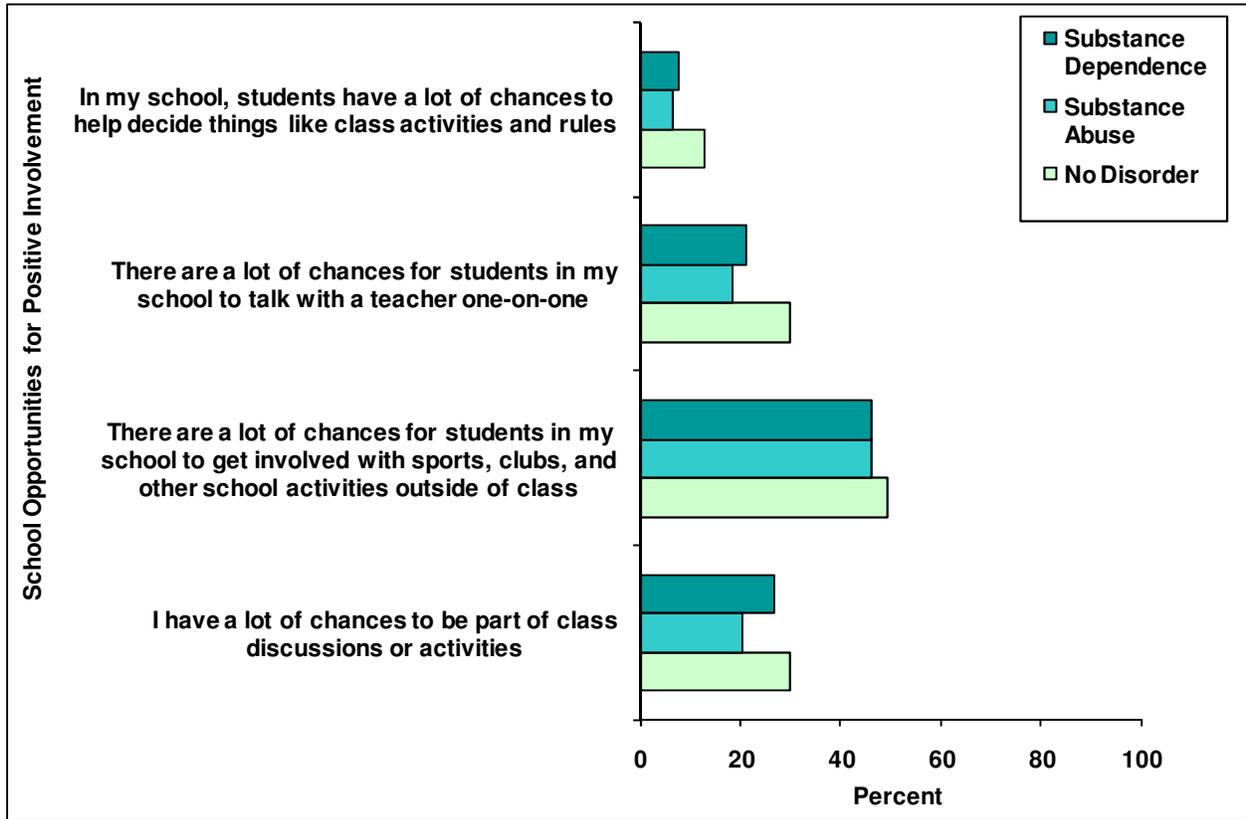


Figure 4d.23. School Opportunities for Positive Involvement by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance dependence and abuse had lower proportions than those without substance abuse or dependence of school opportunities for positive involvement for students having chances to help decide things like class activities and rules (7.7% dependence, 6.5% abuse, 12.7% none,  $\chi^2=49.3$ ,  $df=2$ ,  $p<.001$ ); students having a lot of chances to talk with a teacher one-on-one (21.3% dependence, 18.5% abuse, 30.1% none,  $\chi^2=86.7$ ,  $df=2$ ,  $p<.001$ ); and a lot of chances to be part of class discussions or activities (26.8% dependence, 20.4% abuse, 30.1% none,  $\chi^2=43.4$ ,  $df=2$ ,  $p<.001$ ). They had similar proportions for having a lot of chances for students to get involved with sports, clubs, and other school activities outside of class (46.3% dependence, 46.2% abuse, 49.2% none,  $\chi^2=6.0$ ,  $df=2$ ,  $p=.051$ ).

## SCHOOL REWARDS FOR POSITIVE INVOLVEMENT

The factor of school rewards for positive involvement was measured by questions asking whether teachers praise the student for working hard in school and whether teachers notice when the student is doing a good job and lets them know about it. Responses were: (1) *NO!*; (2) *no*; (3) *yes*; and (4) *YES!*. School rewards for positive involvement were measured by responses of *yes* or *YES!* on the 4-point scale.

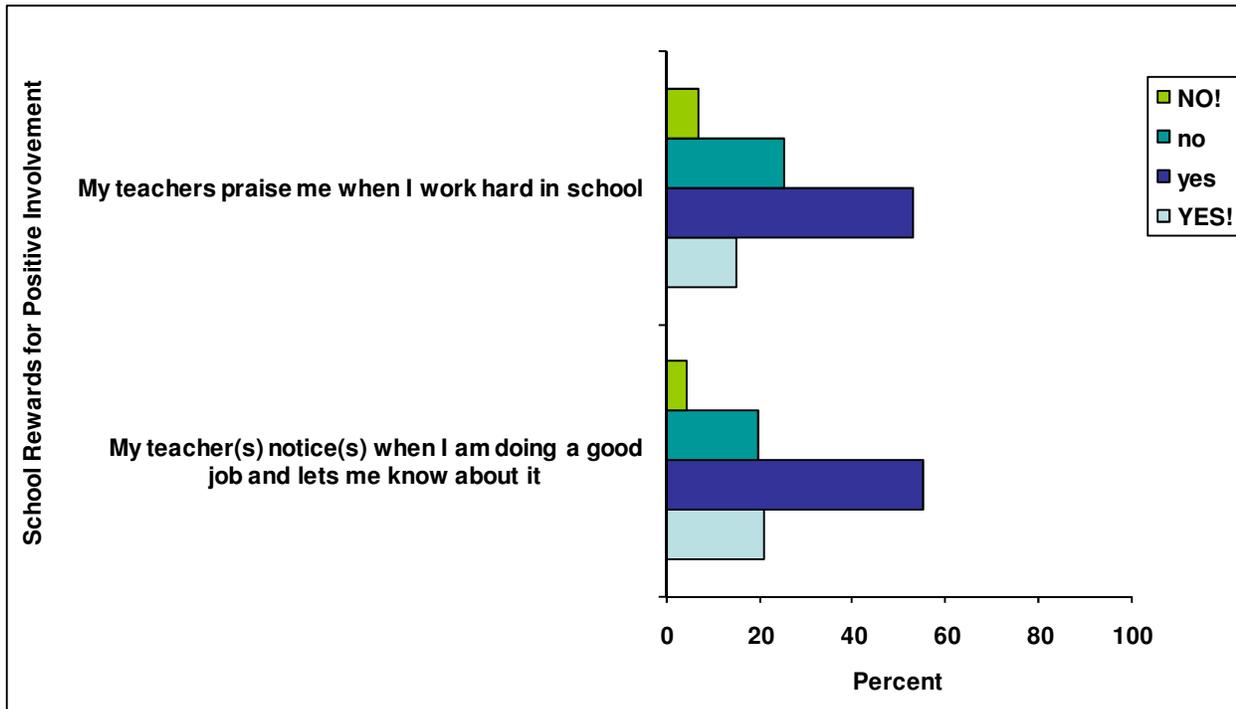


Figure 4d.24. School Rewards for Positive Involvement, 2007 (Weighted Data)

Most students reported that they mostly agree that they receive rewards for positive school involvement with 55% of students reporting that their teachers notice when they are doing a good job and let them know and 53.2% of students reporting that their teachers praise them when they work hard in school.

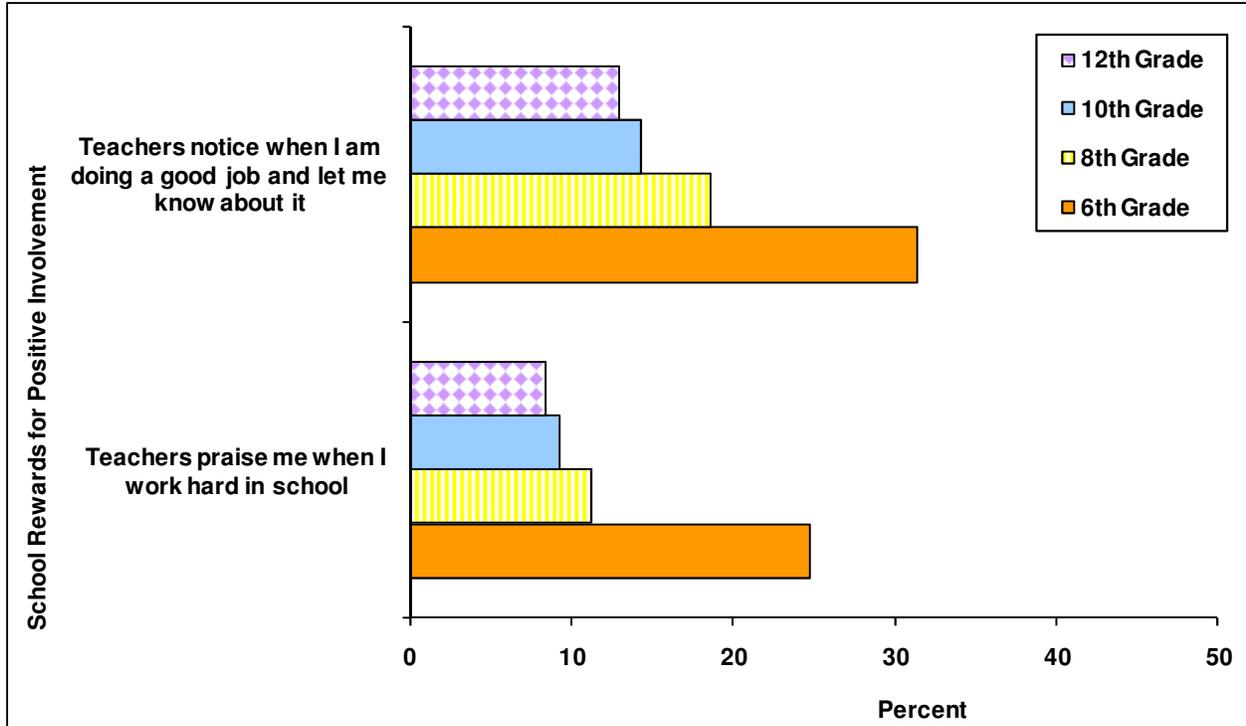


Figure 4d.25. School Rewards for Positive Involvement by Grade, 2007 (Weighted Data)

Overall, school rewards for positive involvement decreased from 6<sup>th</sup> to 12<sup>th</sup> grade. Teachers were more likely to offer praise for hard work to 6<sup>th</sup> graders than other grades (8.4% of 12<sup>th</sup> graders, 9.2% of 10<sup>th</sup> graders, and 11.3% of 8<sup>th</sup> graders, and 24.7% of 6<sup>th</sup> graders;  $\chi^2=1075.8$ ,  $df=3$ ,  $p<.001$ ). Thirteen percent of 12<sup>th</sup> graders, 14.3% of 10<sup>th</sup> graders, 18.7% of 8<sup>th</sup> graders, and 31.4% of 6<sup>th</sup> graders reported that teachers notice when students are doing a good job and let them know about it ( $\chi^2=973.5$ ,  $df=3$ ,  $p<.001$ ).

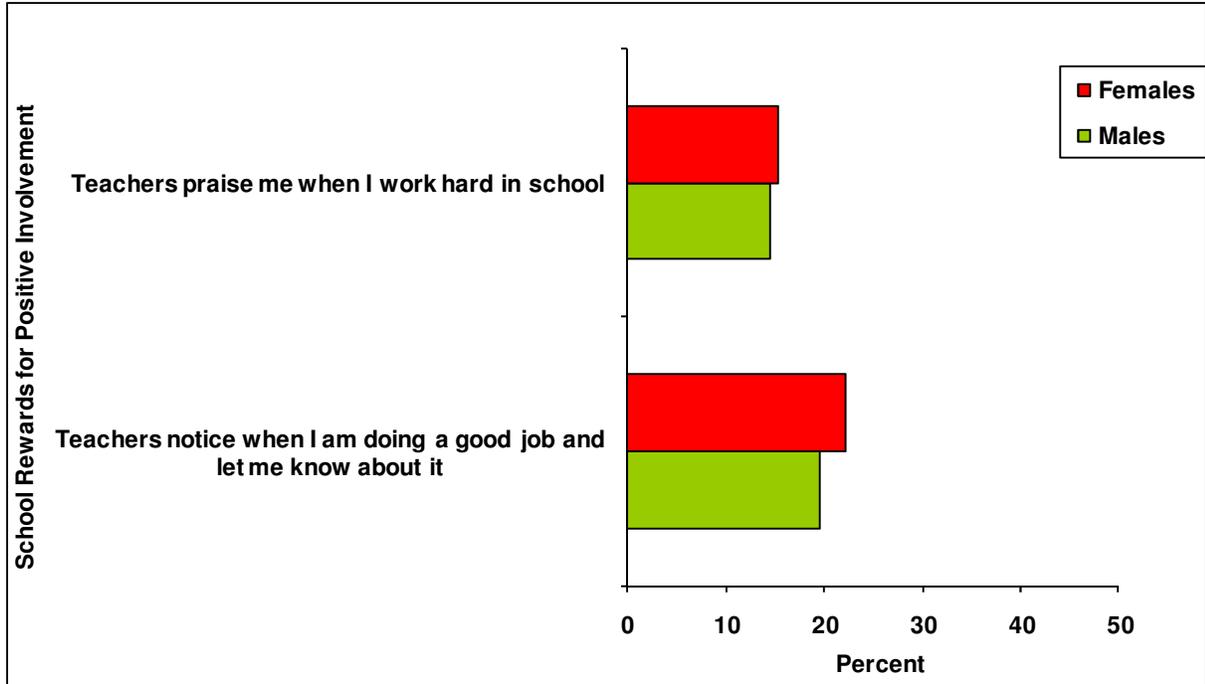


Figure 4d.26. School Rewards for Positive Involvement by Gender, 2007 (Weighted Data)

There were no significant differences by gender for teacher praise of hard work (14.4% of males vs. 15.3% of females;  $\chi^2=3.5$   $df=1$ ,  $p=.061$ ), however, more females compared to males indicated that teachers notice and let them know when they are doing a good job (22.1% vs. 19.6%;  $\chi^2=24.9$   $df=1$ ,  $p<.001$ ).

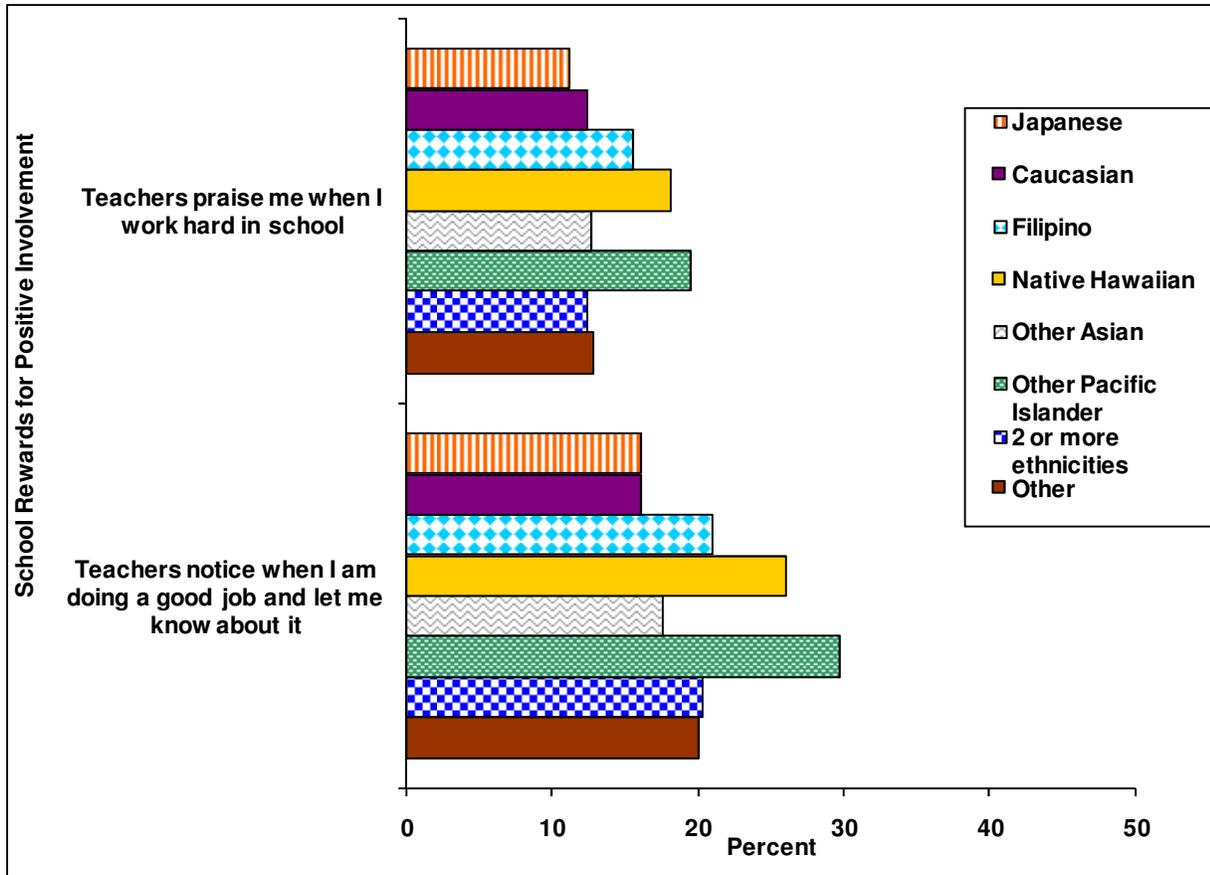


Figure 4d.27. School Rewards for Positive Involvement by Ethnicity, 2007 (Weighted Data)

Generally, students of Other Pacific Islander, Native Hawaiian, and Filipino ethnicity reported the highest rates of school rewards for positive involvement compared to other ethnic groups. About 11.3% of Japanese students, 12.4% of Caucasian students, 15.6% of Filipino students, 18.2% of Native Hawaiian students, 12.8% of Other Asian students, 19.6% of Other Pacific Islander students, 12.4% of students of 2 or more ethnicities, and 12.8% of students of Other ethnicities indicated that teachers praise them for their hard work ( $\chi^2=160.5$ ,  $df=7$ ,  $p<.001$ ). About 16% of Japanese students, 16.1% of Caucasian students, 21% of Filipino students, 26.1% of Native Hawaiian students, 17.7% of Other Asian students, 29.8% of Other Pacific Islander students, 20.4% of students of 2 or more ethnicities, and 20.1% of students of Other ethnicities indicated that teachers notice when they are doing a good job and let them know about it ( $\chi^2=320.5$ ,  $df=7$ ,  $p<.001$ ).

Table 4d.6. Correlations Between School Rewards for Positive Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factor: School Rewards for Positive Involvement	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Teachers praise me when I work hard in school	-.12	-.11	-.10	-.10	-.12	-.12
Teacher(s) notice(s) when I am doing a good job and lets me know about it	-.10	-.10	-.09	-.11	-.10	-.10

Overall, school rewards for positive involvement were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

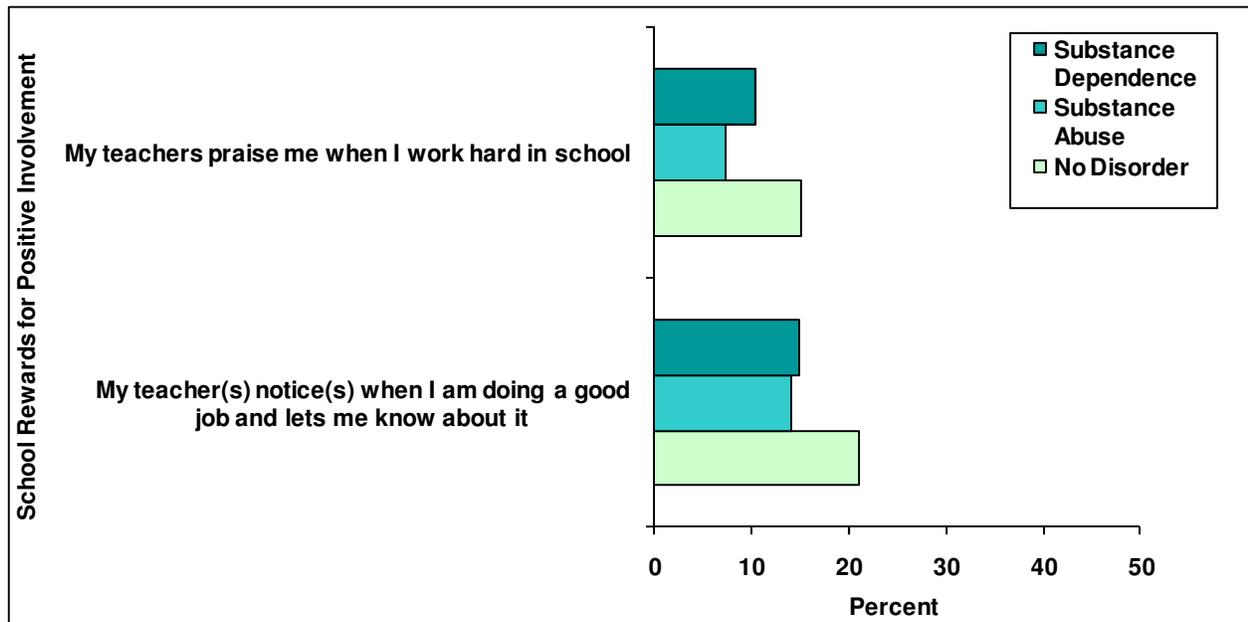


Figure 4d.28. School Rewards for Positive Involvement by Student Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance dependence and abuse had lower proportions than those without substance abuse or dependence of school rewards for positive involvement for receiving teacher praise for

working hard in school (10.5% dependence, 7.3% abuse, 15.1% none,  $X^2=55.5$ ,  $df=2$ ,  $p<.001$ ) and teacher notices when students are doing a good job and lets them know (15% dependence, 14.2% abuse, 21% none,  $X^2=42.6$ ,  $df=2$ ,  $p<.001$ ).

## CONCLUSION

---

The results for school risk and protective factors from the 2007-2008 statewide Hawai'i Student ATOD Study were, for the most part, consistent with previous literature related to risk and protective factors. School factors seem to have a moderate influence in the risk and protective factor relationship to substance use. While none of the factors individually predict substance use, a combination of these factors may contribute to putting adolescents at risk, especially if they do not feel that their school work is meaningful or important or if they are enjoying school, which often occurs for youth as they move from elementary to middle school.

Aspirations for higher education may act as a general mild protective buffer for a majority of youth. Protective factors that may be important in relationship to other risk factors and substance use are opportunities and rewards for positive involvement at school. Although students generally perceive less opportunities to make decisions that affect their classroom, other opportunities for interacting with teachers and classmates within and outside the classroom are available. Most opportunities for sports, clubs, and other activities outside of the class are available for middle to high school students. These differences in the types of opportunities should be used to help shape programs that are more geared towards the classroom for younger students (6<sup>th</sup> grade) and encourage participation in other school opportunities from middle to high school.

Unfortunately, the protective effect of rewards for positive involvement as seen in teacher notice and praise of students for their work, is sharply diminished from elementary to middle and high school. It is important to also consider that low reporting of both opportunities and rewards of positive school

involvement by students that have a substance abuse or dependence may not only be predictor factors but also a consequence of their diagnosis. Efforts by teachers in middle and high schools to encourage student involvement in positive school activities outside of the classroom and providing positive reinforcement and classroom environment on a consistent basis are approaches that not only help in substance use prevention but overall positive youth development.

Because the majority of adolescents are school-aged and encounter some form of school system, approaches for substance use prevention and intervention programs are often school-based. This delivery system for targeted efforts may provide opportunities for cost-effective prevention and intervention if programs are based on the current science, outcome-oriented, and evaluated for effectiveness.

## COMMUNITY DOMAIN

### INTRODUCTION

---

The conditions and characteristics of a neighborhood or community in which an adolescent lives have been shown to influence adolescent substance use. While research on the influence of community factors on adolescent substance use remains limited (Hull et al., 2008; Lambert et al., 2004), such information is useful in developing community-level substance use prevention programs (Fagan et al., 2007; Hull et al., 2008).

Substance use research has grown from a focus on individuals to recognizing the value of studying substance use in the context of the communities in which individuals reside. This focus on studying substance use in a community context allows for a better understanding of the effects substance use has on the behavior of adolescents who reside in a particular community (Hays et al., 2003). However, in contrast to family and peer contexts, there has been a relative lack of research on the effects of the neighborhood and community contexts on adolescent substance use (Lambert et al., 2004).

Adolescents have been shown to commit more crimes and have higher rates of substance use when they live in communities or neighborhoods that are heavily populated, have high crime rates, and are in physical decay (Choi, Harachi, & Catalano, 2006). Numerous studies have shown community disorganization is an important factor in adolescent substance use (Arthur et al., 2002; Choi et al., 2006; Hawkins et al., 1992; Hays, Hays, & Mulhall, 2003; Lambert, Brown, Phillips, & Jalongo, 2004; Leventhal & Brooks-Gunn, 2000).

Alcohol and drug consumption rates have also been shown to be related to local laws, policies, and norms (Toumbourou et al., 2007). For example, legal limits on the drinking age and higher taxes on alcohol and tobacco have been shown to minimize alcohol consumption and tobacco use (Arthur et al., 2002;

Hawkins et. al., 1992). For example, increasing the legal drinking age and higher taxes on alcohol result in less overall alcohol consumption and has been linked to a decrease in alcohol-related automobile accidents (Saffer & Grossman, 1987). Furthermore, community attitudes favorable to drug use are related to increased adolescent problem behavior (Leventhal & Brooks-Gunn, 2000; Newcomb & Felix-Ortiz, 1992).

Adolescents' perceptions about the ease with which alcohol, marijuana, and other drugs can be obtained have been shown to be associated with adolescent drug use (Arthur et al., 2002; Fagan et al., 2007; Hawkins et al., 1992). The literature has also reported that increased visibility of drugs may lead adolescents to perceive drugs as less harmful and therefore could lead to an increase in drug use (Saxe et al., 2001).

On the other hand, adolescents who perceive that there are more opportunities for prosocial activities in their neighborhoods have reported that they are more likely to take part in those activities and thereby less likely to be involved in substance use (Arthur et al., 2002; Hawkins et al., 1992). Furthermore, adolescents who are rewarded and recognized for participating in prosocial community activities have been shown to be more likely to take part in those activities and less likely to be involved in substance use (Arthur et al., 2002; Fagan, et al. 2007; Hawkins et al., 1992).

Similar to previous Hawai'i Student ATOD Surveys, six community domain variables were measured in the study: four risk factors (Community Disorganization, Laws and Norms Favorable to Drug Use, Exposure to Community ATOD Use, Perceived Availability of Drugs) and two protective factors (Opportunities for Prosocial Community Involvement, Rewards for Prosocial Community Involvement) (Pearson, 2004). These factors are described in Table 4e.1.

Table 4e.1: Community Risk and Protective Factors and the Corresponding 2007-2008 Hawai'i Student ATOD Survey Questions and Responses (Adapted from Pearson, 2003).

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Community Disorganization</b>	Defined as the prevalence of crime, violence, and delinquency in the neighborhood. Research has shown that neighborhoods with high population density, lack of public surveillance, physical deterioration, and high rates of adult crime also have higher rates of juvenile crime and drug selling.	There is crime and or drug selling in my neighborhood	NO! = 0 no = 1 yes = 2 YES! = 3
		There are fights in my neighborhood	
		There are a lot of empty or abandoned buildings in my neighborhood	
		There is a lot of graffiti in my neighborhood	
<b>Laws &amp; Norms Favorable to Drug Use</b>	Defined as the attitudes and policies a community holds about drug use and crime. Research has shown that legal restrictions on alcohol and tobacco use, such as raising the legal drinking age, restricting smoking in public places, and increasing taxation, have been followed by decreases in consumption. Moreover, national surveys of high school seniors have shown that shifts in normative attitudes toward drug use have preceded changes in prevalence of use.	Adults in my neighborhood would think it was wrong for kids my age to use marijuana	NO! = 0 no = 1 yes = 2 YES! = 3
		Adults in my neighborhood would think it was wrong for kids my age to drink alcohol	
		Adults in my neighborhood would think it was wrong for kids my age to smoke cigarettes	
		If a kid drank alcohol in my neighborhood, he or she would be caught by the police	
		If a kid smoked marijuana in my neighborhood, he or she would be caught by the police	

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Exposure to Community Alcohol, Tobacco, and Other Drug (ATOD) Use</b>	Defined as frequent exposure to alcohol, tobacco, and other drug (ATOD) use by people in one's neighborhood or school. Frequent exposure to ATOD use influences normative beliefs and understanding of how to engage in the behavior and, thus, increases likelihood of ATOD use.	During the last 12 months, how often have you been around other people in your neighborhood or school when they were using cigarettes or other tobacco products?	Not at all = 0 A few times a year = 1 Once or twice a month = 2 At least once a week = 3 Almost every day = 4
		During the last 12 months, how often have you been around other people in your neighborhood or school when they were using alcohol (even a small amount)?	
		During the last 12 months, how often have you been around other people in your neighborhood or school when they were using drugs other than tobacco or alcohol?	

<b>Risk Factors</b>			
<b>Factor</b>	<b>Description</b>	<b>Question</b>	<b>Response Choices and Coding for Analyses</b>
<b>Perceived Availability of Drugs</b>	Defined as the perceived ease in obtaining drugs for adolescents. The availability of cigarettes, alcohol, marijuana, and other illegal drugs has been related to the use of these substances by adolescents.	How difficult do you think it would be for you to get cigarettes?	Probably Impossible = 1 Very Difficult = 2 Fairly Difficult = 3 Fairly Easy = 4 Very Easy = 5
		How difficult do you think it would be for you to get alcohol (beer, wine, or hard liquor)?	
		How difficult do you think it would be for you to get marijuana (hash, pakalolo, pot, weed)?	
		How difficult do you think it would be for you to get cocaine (crack, coke, blow, freebase)?	
		How difficult do you think it would be for you to get methamphetamine (crystal meth, speed, ice, batu, crank)?	
		How difficult do you think it would be for you to get hallucinogens (LSD/PCP, shrooms, acid)?	
		How difficult do you think it would be for you to get ecstasy or other "club drugs" (E, XTC, G, GHB, liquid ecstasy, Rohypnol, roofies, ketamine, special K)?	
		How difficult do you think it would be for you to get prescription drugs (such as Oxycontin or Vicodin) without a doctor telling you to?	

Protective Factors			
Factor	Description	Question	Response Choices and Coding for Analyses
<b>Community Opportunities for Positive Involvement</b>	Defined as opportunities to engage in prosocial activities in the community, such as sports or adult supervised clubs. When opportunities are available in a community for positive participation, children are less likely to engage in substance use and other problem behaviors.	Are organized sports outside of school available in your community for people your age?	No = 0 Yes = 1 I don't know = 999
		Are individual sporting facilities available in your community for people your age?	
		Are Boys and Girls clubs available in your community for people your age?	
		Are 4-H clubs or other organized agricultural, ranch, or farm-type clubs available in your community for people your age?	
		Are music, dance, or other performance arts groups available in your community for people your age?	
<b>Community Rewards for Positive Involvement</b>	Defined as community encouragement for adolescents engaging in positive activities. Rewards for positive participation in activities help children bond to the community, thus lowering their risk for substance use.	My neighbors notice when I am doing a good job and let me know	NO! = 0 no = 1 yes = 2 YES! = 3
		There are people in my neighborhood who encourage me to do my best	
		There are people in my neighborhood who are proud of me when I do something well	

## COMMUNITY DISORGANIZATION

Community disorganization was based on 4-item, 4-point scale that indexed the prevalence of crime, violence and delinquency in the neighborhood where the students lived. Students were asked if crime and/or drug selling, fights, a lot of empty buildings, and graffiti occurred in their neighborhood.

Response choices were: (0) *NO!*; (1) *no*; (2) *yes*; and (3) *YES!* Community disorganization has been shown to be strongly associated with substance use in previous Hawai'i survey efforts. Being at risk for substance use was defined by combining the responses of *yes* and *YES!*.

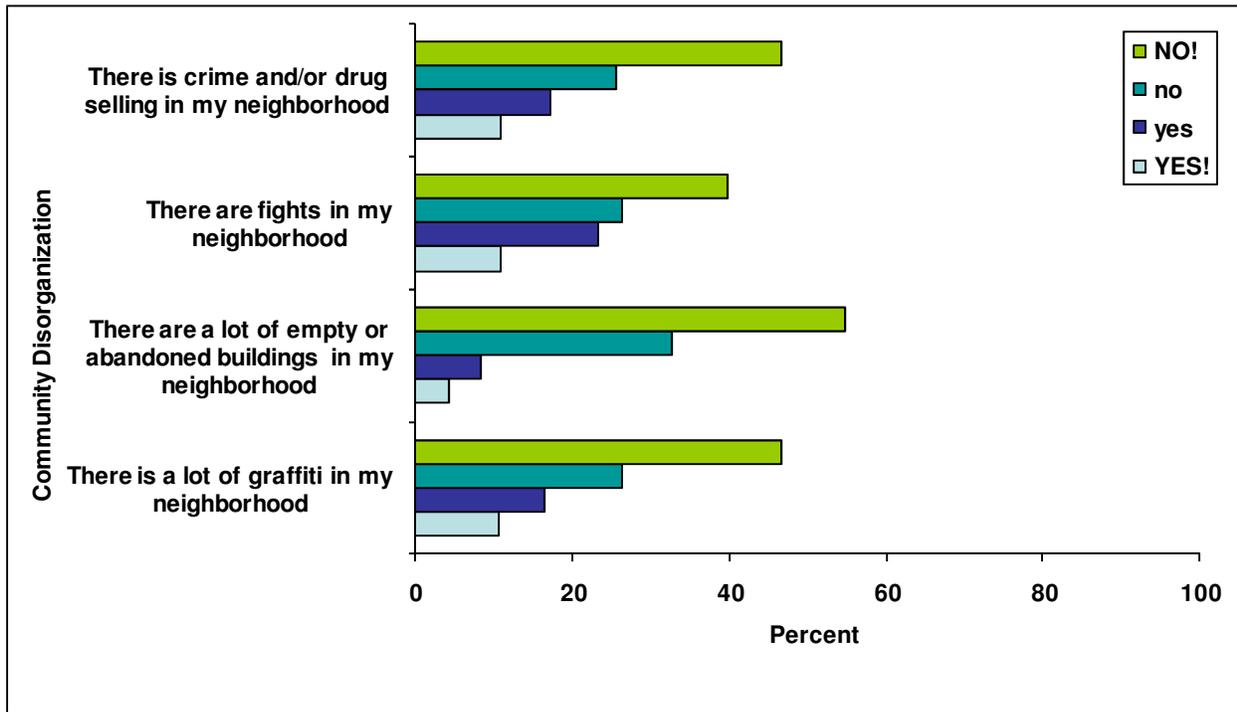


Figure 4e.1. Community Disorganization, 2007 (Weighted Data)

The greatest community disorganization was found for students who reported that there are fights in their neighborhood (34%) while the least community disorganization was found for students who reported there are a lot of empty or abandoned buildings in their neighborhood (12.5%).

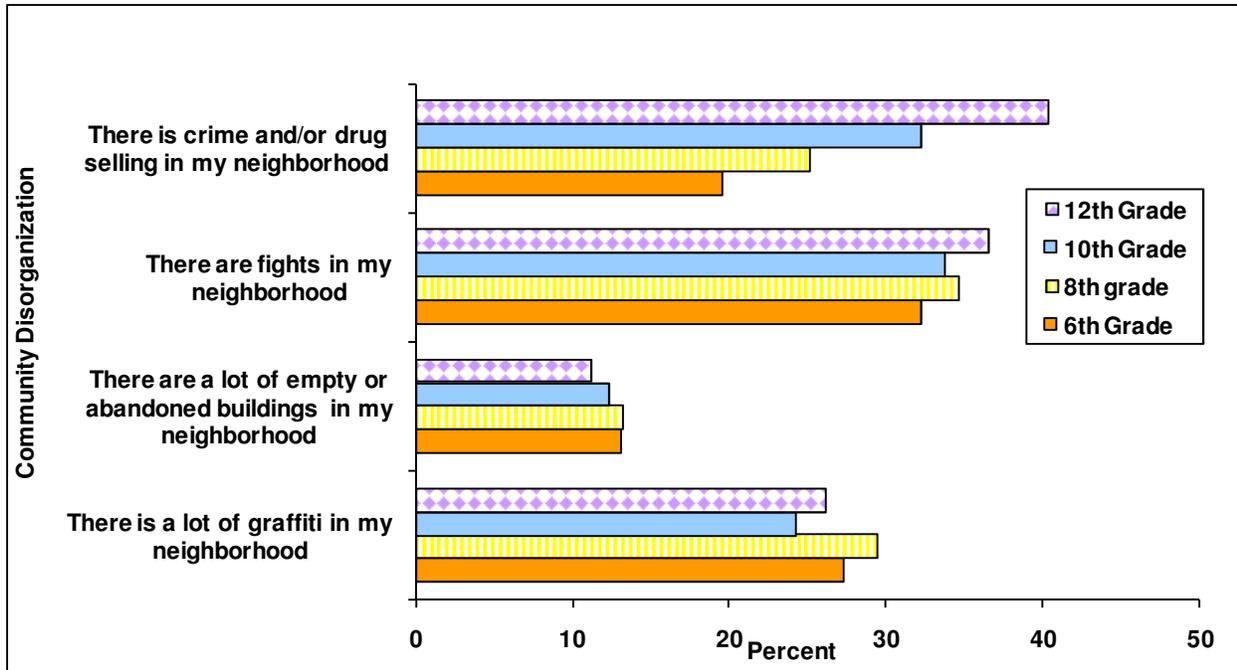


Figure 4e.2. Community Disorganization by Grade, 2007 (Weighted Data)

Rates of community disorganization tended to increase with higher grade levels for crime or drug selling their neighborhood (19.5% of 6<sup>th</sup> graders, 25.2% of 8<sup>th</sup> graders, 32.2% of 10<sup>th</sup> graders, and 40.3% of 12<sup>th</sup> graders;  $\chi^2=756.5$ ,  $df=3$ ,  $p<.001$ ) and for fights in their neighborhood (32.2% of 6<sup>th</sup> graders, 34.6% of 8<sup>th</sup> graders, 33.7% of 10<sup>th</sup> graders, and 36.5% of 12<sup>th</sup> graders;  $\chi^2=27.2$ ,  $df=3$ ,  $p<.001$ ).

Although significantly different by grade, there was no consistent pattern in rates of reported empty or abandoned building in students' neighborhoods (13.1% of 6<sup>th</sup> graders, 13.2% of 8<sup>th</sup> graders, 12.3% of 10<sup>th</sup> graders, and 11.2% of 12<sup>th</sup> graders;  $\chi^2=13.6$ ,  $df=3$ ,  $p<.01$ ) and graffiti in their neighborhood (27.3% of 6<sup>th</sup> graders, 29.4% of 8<sup>th</sup> graders, 24.2% of 10<sup>th</sup> graders, and 26.1% of 12<sup>th</sup> graders;  $\chi^2=43.3$ ,  $df=3$ ,  $p<.001$ ).

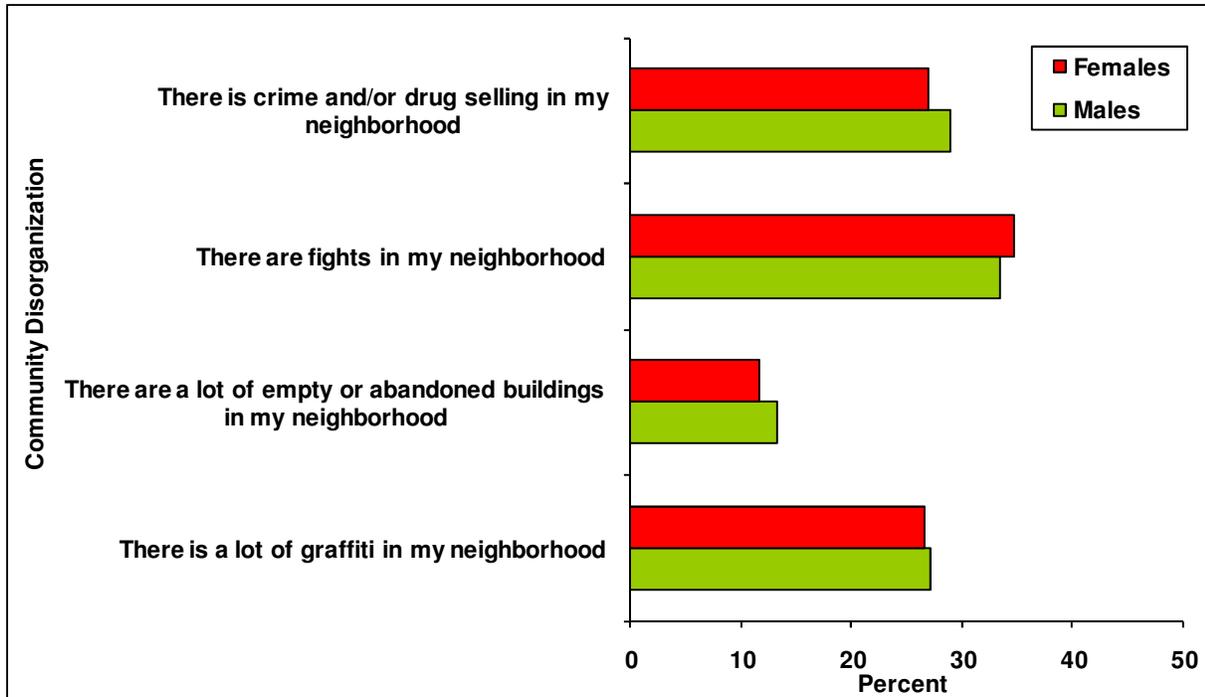


Figure 4e.3. Community Disorganization by Gender, 2007 (Weighted Data)

With the exception of fights in the neighborhood, more males reported community disorganization than females. Twenty-seven percent of females and 28.9% of males indicated there was crime or drug selling in their neighborhood ( $\chi^2=11.0$ ,  $df=1$ ,  $p<.01$ ). Gender differences were also similar for reporting of empty or abandoned buildings (11.6% of females vs. 13.3% of males;  $\chi^2=16.0$ ,  $df=1$ ,  $p<.001$ ). More females (34.8%) reported fights in their neighborhood compared to males (33.4%;  $\chi^2=5.0$ ,  $df=1$ ,  $p<.01$ ). There were no significant gender differences in reporting of graffiti in students' neighborhood (26.6% of females vs. 27.2% of males;  $\chi^2=1.2$ ,  $df=1$ ,  $p=.271$ ).

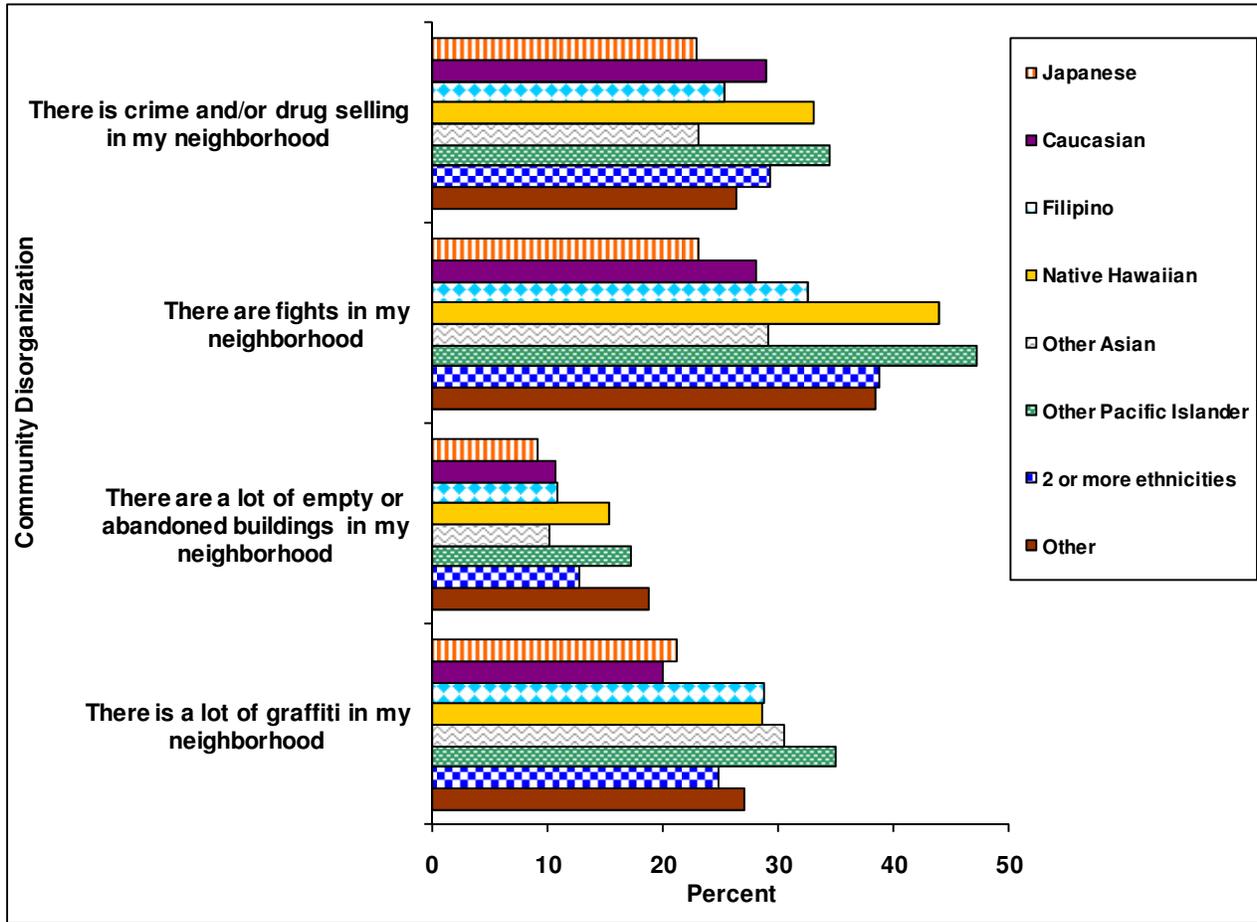


Figure 4e.4. Community Disorganization by Ethnicity, 2007 (Weighted Data)

Significant differences were found by ethnicity for community disorganization. Other Pacific Islander and Native Hawaiian students were most likely to report crime or drug selling (23% of Japanese students, 29% of Caucasian students, 25.4% of Filipino students, 33.2% of Native Hawaiian students, 23.3% of Other Asian students, 34.6% of Other Pacific Islander students, 29.5% of students of 2 or more ethnicities, and 26.5% of students of Other ethnicity;  $X^2=198.2$ ,  $df=7$ ,  $p<.001$ ), fights (23.3% of Japanese students, 28.1% of Caucasian students, 32.8% of Filipino students, 44% of Native Hawaiian students, 29.2% of Other Asian students, 47.4% of Other Pacific Islander students, 39% of students of 2 or more ethnicities, and 38.5% of students of Other ethnicity;  $X^2=654.6$ ,  $df=7$ ,  $p<.001$ ), empty or abandoned buildings (9.2% of Japanese students, 10.7% of Caucasian students, 10.9% of Filipino students, 15.4% of Native Hawaiian

students, 10.3% of Other Asian students, 17.4% of Other Pacific Islander students, 12.9% of students of 2 or more ethnicities, and 18.9% of students of Other ethnicity;  $\chi^2=214.2$ ,  $df=7$ ,  $p<.001$ ), and graffiti in their neighborhood (21.3% of Japanese students, 20.1% of Caucasian students, 29% of Filipino students, 28.6% of Native Hawaiian students, 30.6% of Other Asian students, 35.2% of Other Pacific Islander students, 25% of students of 2 or more ethnicities, and 27.1% of students of Other ethnicity;  $\chi^2=271.3$ ,  $df=7$ ,  $p<.001$ ).

Table 4e.2. Correlations Between Community Disorganization and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Community Disorganization	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Neighborhood crime and/or drug selling	.21	.17	.13	.18	.20	.13
Neighborhood fights	.16	.12	.09	.10	.13	.09
A lot of empty or abandoned buildings in neighborhood	.14	.13	.12	.13	.15	.12
A lot of neighborhood graffiti	.10	.09	.09	.08	.11	.08

The following general categories indicate a quick way of interpreting a correlation value: 0.0 to  $\pm 0.2$  Negligible;  $\pm 0.2$  to 0.4 Weak;  $\pm 0.4$  to 0.7 Moderate; and  $\pm 0.7$  and above Strong. Overall, measures of community disorganization were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm .20$ ). The strongest correlation was between neighborhood crime and/or selling drug selling and monthly alcohol use ( $r=.21$ ).

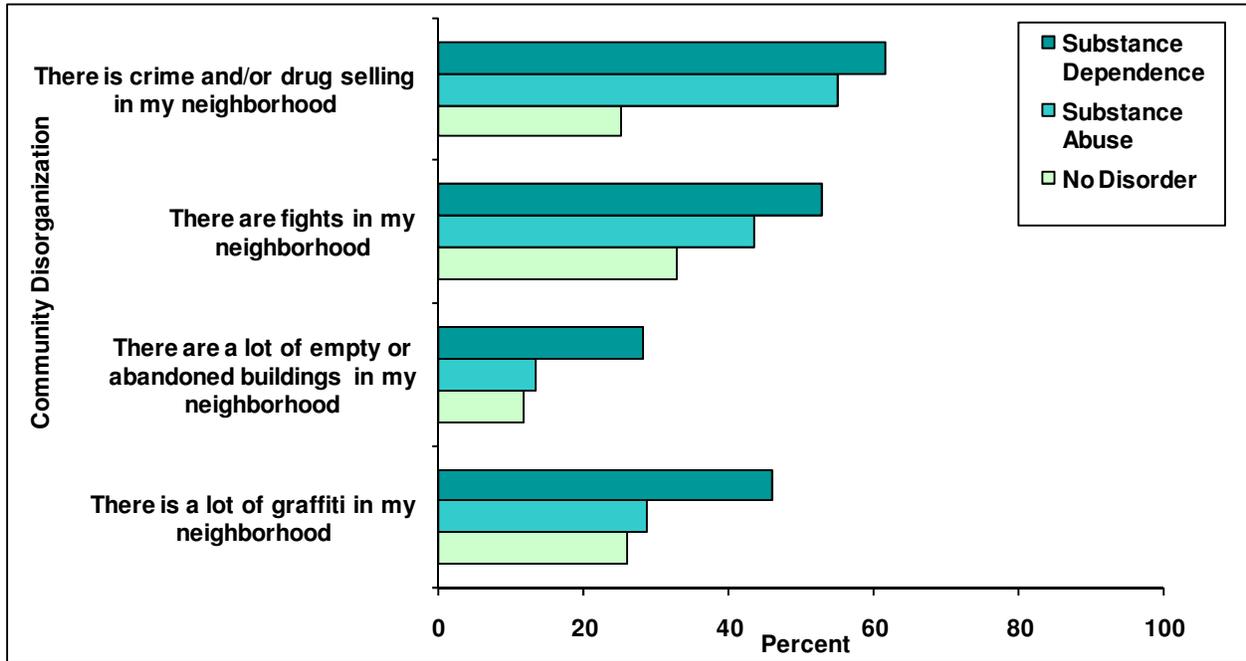


Figure 4e.5. Community Disorganization by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate community disorganization. On every item, significantly more youth with substance dependence, in comparison to youth with substance abuse indicated community disorganization. More students with substance abuse or dependence reported community disorganization than students without substance abuse or dependence for crime and/or drug selling in neighborhoods (61.6% dependence vs. 55.1% abuse vs. 25.3% none,  $\chi^2=922.4$ ,  $df=2$ ,  $p<.001$ ); fights in neighborhoods (52.9% dependence vs. 43.5% abuse vs. 32.9% none,  $\chi^2=197.2$ ,  $df=2$ ,  $p<.001$ ); empty or abandoned buildings in neighborhoods (28.2% dependence vs. 13.5% abuse vs. 11.8% none,  $\chi^2=217.6$ ,  $df=2$ ,  $p<.001$ ); and a lot of graffiti in neighborhoods (46% dependence vs. 28.6% abuse vs. 26% none,  $\chi^2=183.2$ ,  $df=2$ ,  $p<.001$ ). More students with substance abuse and dependence reported neighborhood crime and/or drug selling than any other community disorganization variable.

## LAWS AND NORMS FAVORABLE TO DRUG USE

Laws and norms favorable to drug use was measured by a 4-item, 4-point scale that indexed the degree to which adults in the students neighborhood would think it was wrong for kids of the same age to use marijuana, alcohol, or cigarettes. In addition, students were asked if a kid who drank alcohol or smoked marijuana in their neighborhood would be caught by the police. Response choices were: (0) *NO!*; (1) *no*; (2) *yes*; and (3) *YES!* Laws and norms favorable to drug use has been shown to be strongly associated with substance use in previous Hawai'i survey efforts. Being at risk for substance use was defined by combining the responses of *yes* and *YES*.

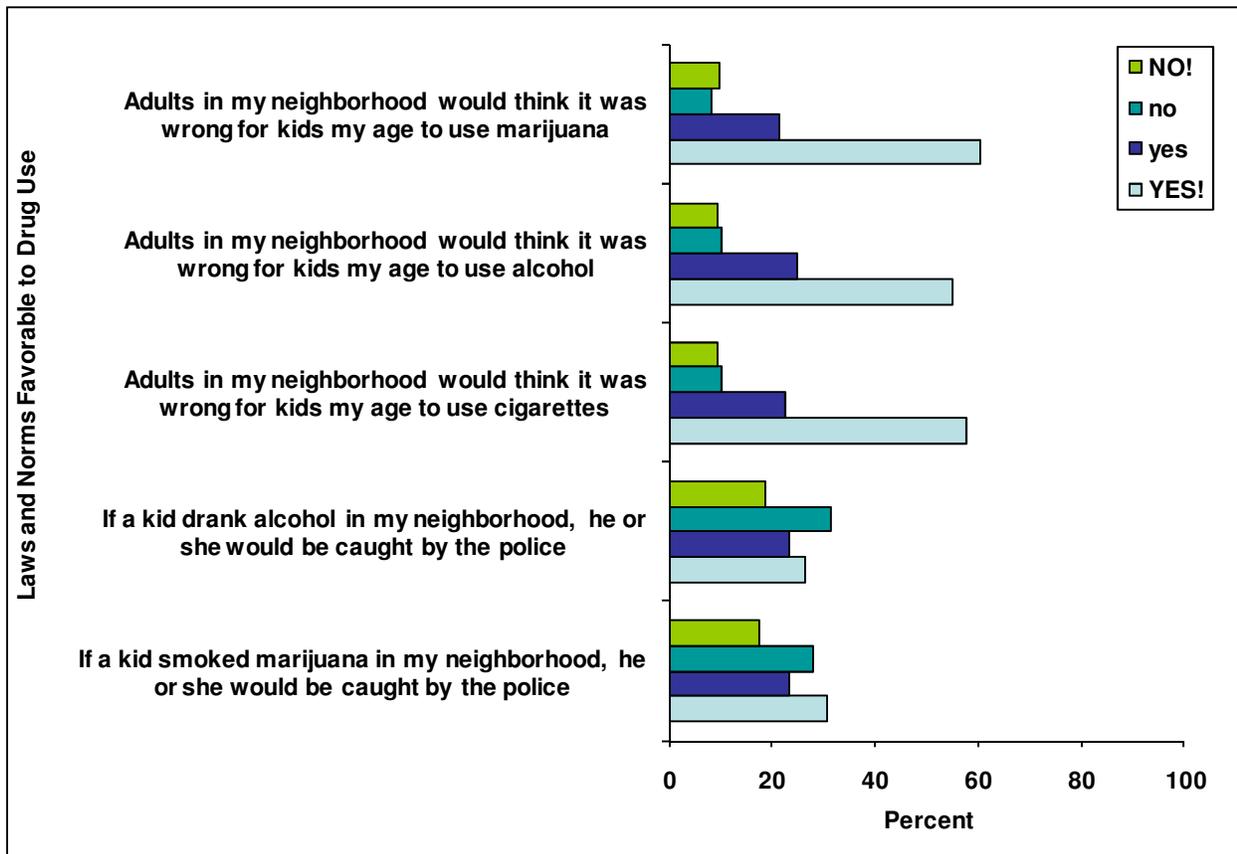


Figure 4e.6. Laws and Norms Favorable to Drug Use, 2007 (Weighted Data)

In general, students thought that adults in their neighborhood would think it was wrong for kids their age to use marijuana (81.6%), alcohol (80.1%), and cigarettes (80.2%). The results of whether a kid would be caught by the police if he/she drank alcohol or smoked marijuana were similar, in that, approximately half of the students thought the kid would be caught by the police and approximately half of the students thought the kid would *not* be caught by the police.

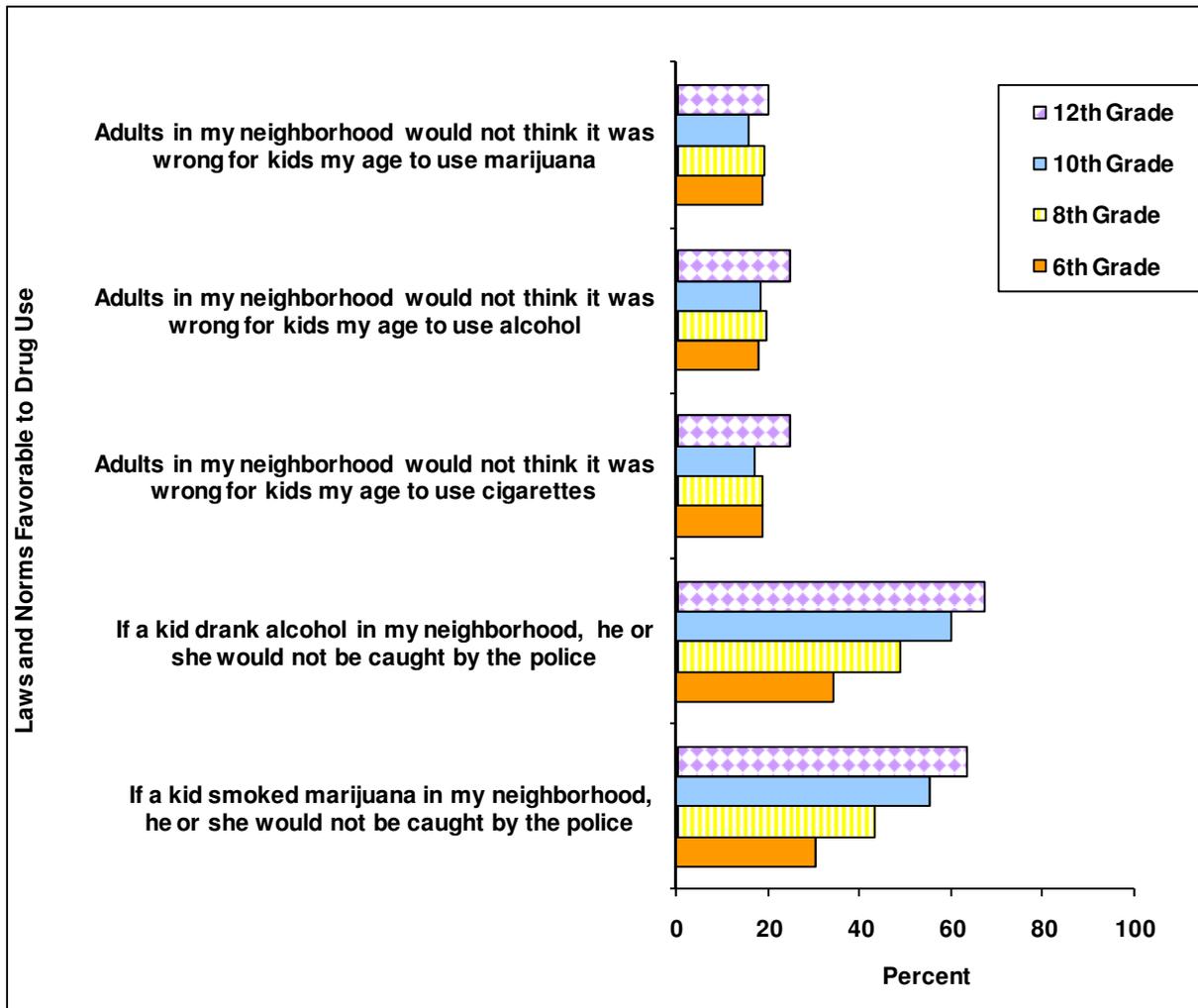


Figure 4e.7. Laws and Norms Favorable to Drug Use by Grade, 2007 (Weighted Data)

Twelfth graders were more likely to perceive norms as favorable to drug use than lower grade levels for thinking adults would not think it was wrong for youth to use marijuana (18.6% of 6<sup>th</sup> graders,

19.1% of 8<sup>th</sup> graders, 15.7% of 10<sup>th</sup> graders, and 20.1% of 12<sup>th</sup> graders;  $\chi^2=37.1$ ,  $df=3$ ,  $p<.001$ ), alcohol (18.1% of 6<sup>th</sup> graders, 19.5% of 8<sup>th</sup> graders, 18.2% of 10<sup>th</sup> graders, and 24.7% of 12<sup>th</sup> graders;  $\chi^2=101.6$ ,  $df=3$ ,  $p<.001$ ), or cigarettes (18.9% of 6<sup>th</sup> graders, 18.6% of 8<sup>th</sup> graders, 16.9% of 10<sup>th</sup> graders, and 24.9% of 12<sup>th</sup> graders;  $\chi^2=121.9$ ,  $df=3$ ,  $p<.001$ ).

Perception of laws favorable to drug use were also more likely to be reported by 12<sup>th</sup> graders, decreasing with lower grade levels for not being caught by police if using alcohol (34.2% of 6<sup>th</sup> graders, 48.7% of 8<sup>th</sup> graders, 60.1% of 10<sup>th</sup> graders, and 67.2% of 12<sup>th</sup> graders;  $\chi^2=1631.4$ ,  $df=3$ ,  $p<.001$ ) or marijuana (30.4% of 6<sup>th</sup> graders, 43.2% of 8<sup>th</sup> graders, 55.2% of 10<sup>th</sup> graders, and 63.4% of 12<sup>th</sup> graders;  $\chi^2=1612.2$ ,  $df=3$ ,  $p<.001$ ).

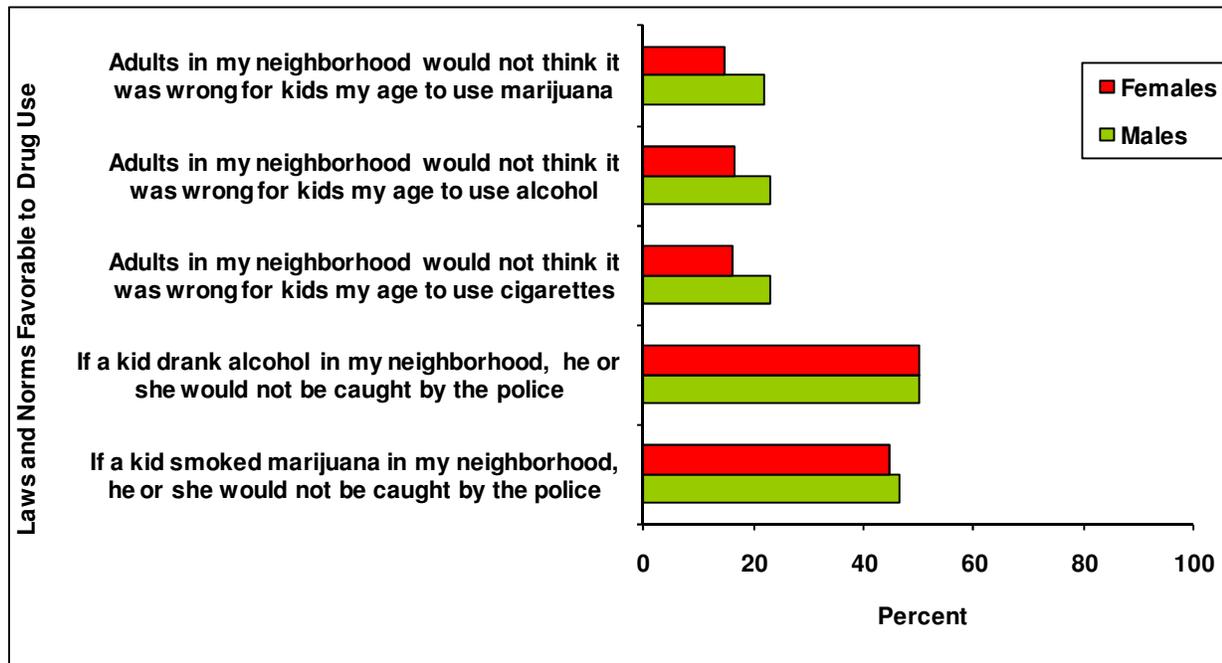


Figure 4e.8. Laws and Norms Favorable to Drug Use by Gender, 2007 (Weighted Data)

Overall, more males than females perceived laws and norms favorable to drug use. More males than females indicated adults would not think it was wrong for youth to use marijuana (14.7% of females vs. 21.9% of males;  $\chi^2=209.2$ ,  $df=1$ ,  $p<.001$ ), alcohol (16.5% of females vs. 23% of males;  $\chi^2=159.7$ ,  $df=1$ ,  $p<.001$ ), or cigarettes (16.2% of females vs. 22.9% of males;  $\chi^2=175.6$ ,  $df=1$ ,  $p<.001$ ).

Gender differences were also similar for perceptions of laws favorable to drug use for marijuana (44.9% of females vs. 46.4% of males;  $\chi^2=5.5$ ,  $df=1$ ,  $p<.05$ ). There were no significant gender differences for youth not being caught by police for using alcohol (50% of females vs. 50.2% of males;  $\chi^2=.18$ ,  $df=1$ ,  $p=.670$ ).

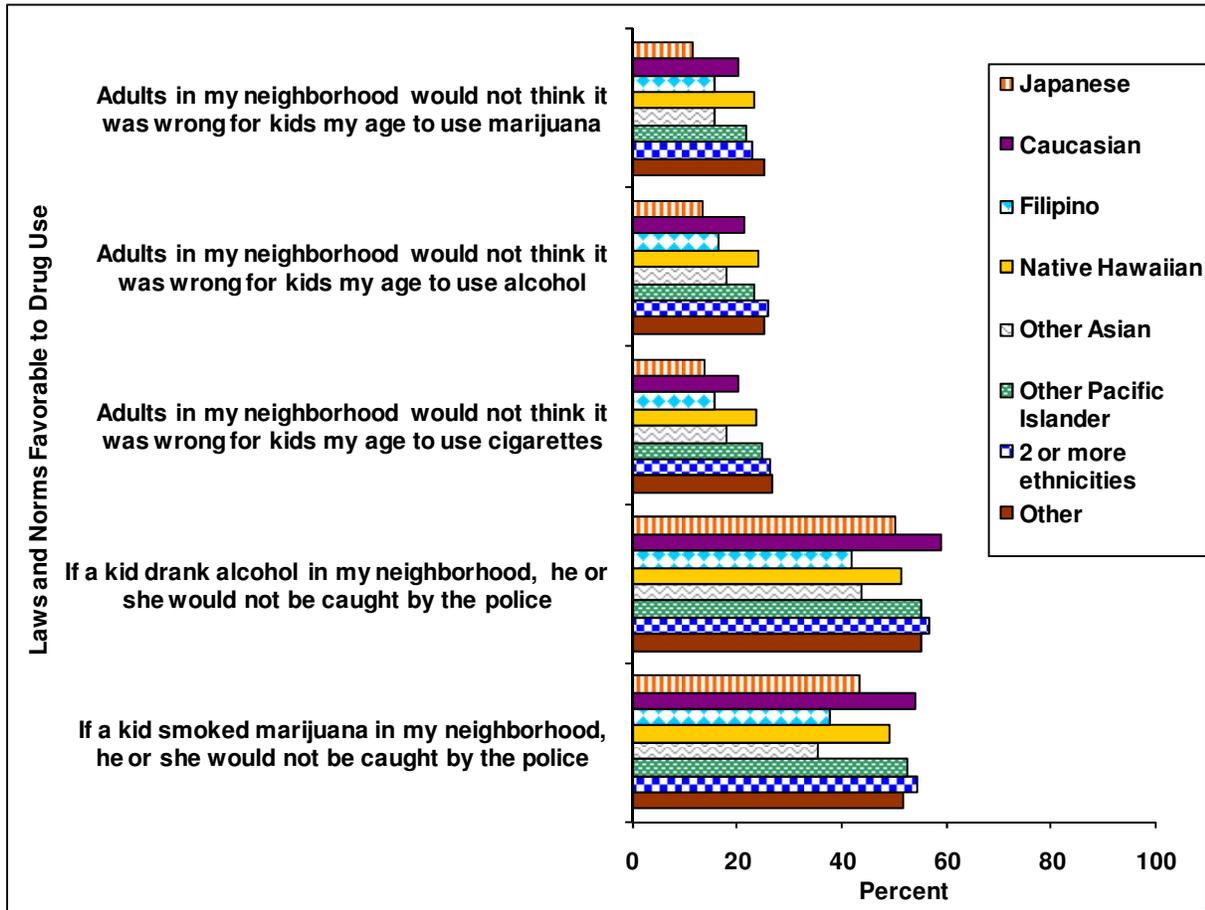


Figure 4e.9. Laws and Norms Favorable to Drug Use by Ethnicity, 2007 (Weighted Data)

Students of Native Hawaiian, Caucasian, and Other Pacific Islander ethnicities were most likely to perceive norms favorable to drug use in their community. About 11% of Japanese students, 20.2% of Caucasian students, 15.6% of Filipino students, 23.3% of Native Hawaiian students, 15.6% of Other Asian students, 22% of Other Pacific Islander students, 22.8% of students of 2 or more ethnicities, and 25.1% of students of Other ethnicity indicated adults in their neighborhood would not think it was wrong for youth to use marijuana ( $\chi^2=301.5$ ,  $df=7$ ,  $p<.001$ ). Patterns of ethnic differences were similar in responses

regarding adults not thinking it was wrong for youth to use alcohol (13.5% of Japanese students, 21.6% of Caucasian students, 16.7% of Filipino students, 24.2% of Native Hawaiian students, 17.9% of Other Asian students, 23.2% of Other Pacific Islander students, 26% of students of 2 or more ethnicities, and 25.3% of students of Other ethnicity;  $\chi^2=247.6$ ,  $df=7$ ,  $p<.001$ ) or cigarette (13.7% of Japanese students, 20.4% of Caucasian students, 15.9% of Filipino students, 23.6% of Native Hawaiian students, 18.2% of Other Asian students, 24.9% of Other Pacific Islander students, 26.3% of students of 2 or more ethnicities, and 26.8% of students of Other ethnicity;  $\chi^2=287.9$ ,  $df=7$ ,  $p<.001$ ).

Filipino and Other Asian students were the least likely to report that they would not be caught by police for using alcohol (50.2% of Japanese students, 59% of Caucasian students, 42.1% of Filipino students, 51.6% of Native Hawaiian students, 43.7% of Other Asian students, 55.4% of Other Pacific Islander students, 56.8% of students of 2 or more ethnicities, and 55.1% of students of Other ethnicity;  $\chi^2=393.0$ ,  $df=7$ ,  $p<.001$ ) or marijuana (43.4% of Japanese students, 54.2% of Caucasian students, 37.9% of Filipino students, 49.2% of Native Hawaiian students, 35.5% of Other Asian students, 52.8% of Other Pacific Islander students, 54.7% of students of 2 or more ethnicities, and 51.9% of students of Other ethnicity;  $\chi^2=486.9$ ,  $df=7$ ,  $p<.001$ ).

Table 4e.2. Correlations Between Laws and Norms Favorable to Drug Use and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Protective Factor: Laws and Norms Unfavorable to Drug Use</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Neighborhood adults would think it was wrong for kids my age to use marijuana	-.14	-.14	-.09	-.16	-.13	-.10
Neighborhood adults would think it was wrong for kids my age to drink alcohol	-.18	-.17	-.10	-.15	-.14	-.11
Neighborhood adults would think it was wrong for kids my age to smoke cigarettes	-.16	-.15	-.12	-.14	-.13	-.11
If a kid drank alcohol in my neighborhood, (s)he would be caught by the police	-.17	-.15	-.09	-.14	-.13	-.07
If a kid smoked marijuana in my neighborhood, (s)he would be caught by the police	-.19	-.18	-.11	-.17	-.15	-.09

Overall, laws and norms unfavorable to drug use were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

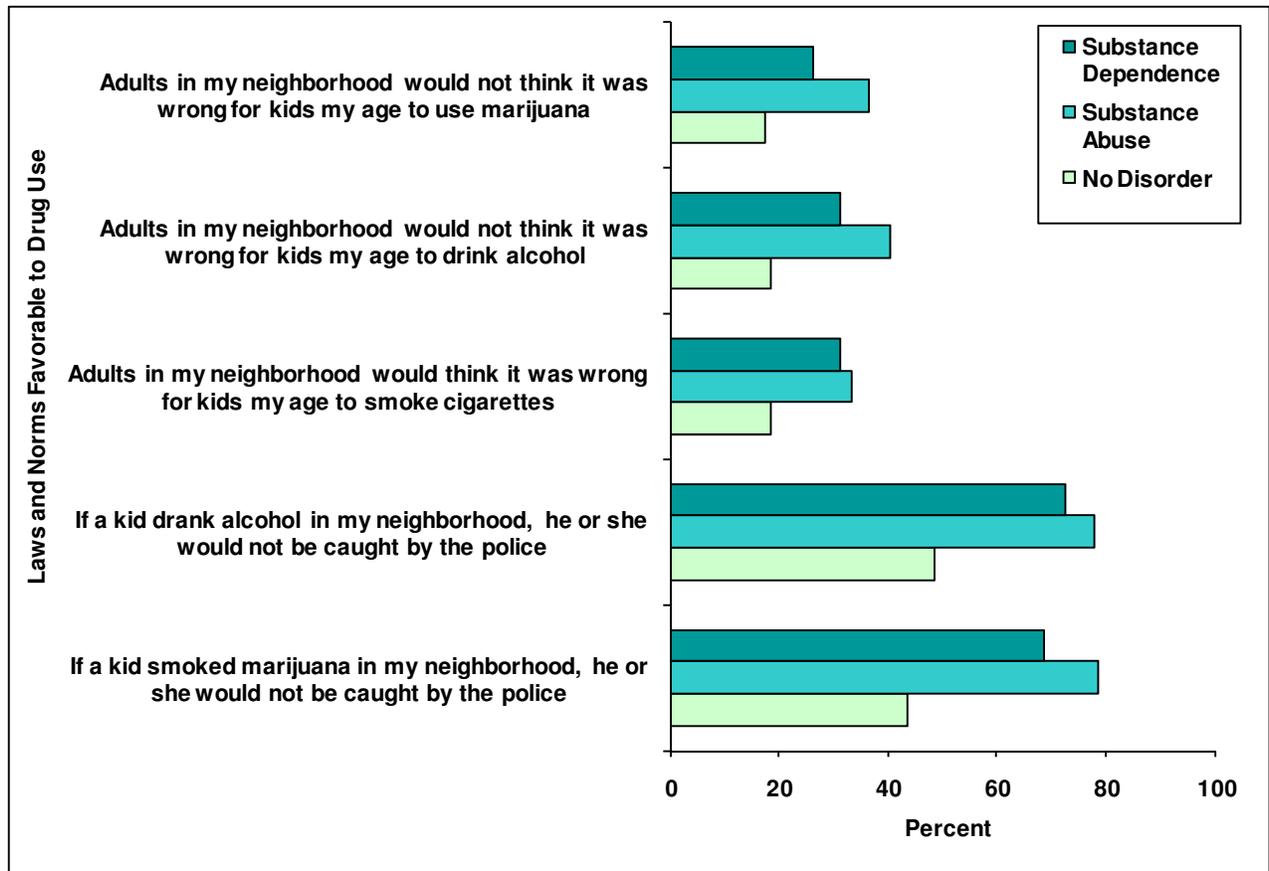


Figure 4e.10. Laws and Norms Favorable to Drug Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

More students who met criteria for substance abuse reported laws and norms favorable to drug use than students with substance dependence and more students with substance dependence reported laws and norms favorable to drug use than students with no substance abuse or dependence. This finding held true for adults in the neighborhood *not* thinking it was wrong for kids to use marijuana (26.4% dependence vs. 36.4% abuse vs. 17.4% none,  $\chi^2=246.3$ ,  $df=2$ ,  $p<.001$ ); adults in the neighborhood *not* thinking it was wrong for kids to drink alcohol (31.2% dependence vs. 40.3% abuse vs. 18.6% none,  $\chi^2=328.4$ ,  $df=2$ ,  $p<.001$ ); adults in the neighborhood not thinking it was wrong for kids to smoke cigarettes (31.1% dependence vs. 33.3% abuse vs. 18.6% none,  $\chi^2=198.5$ ,  $df=2$ ,  $p<.001$ ); a kid drinking alcohol in the neighborhood would not be caught by police (72.5% dependence vs. 77.9% abuse vs. 48.4% none,

$X^2=482.6$ ,  $df=2$ ,  $p<.001$ ); and a kid smoking marijuana in the neighborhood would *not* be caught by police (68.6% dependence vs. 78.6% abuse vs. 43.7% none,  $X^2=620.0$ ,  $df=2$ ,  $p<.001$ ).

#### PERCEIVED AVAILABILITY OF DRUGS

---

Perceived availability of drugs was assessed through an 8-item 5-point scale that asked students how difficult they think it would be to get cigarettes, alcohol, marijuana, cocaine, methamphetamine, hallucinogens, ecstasy or other “club drugs”, and prescription drugs without a doctor’s instructions. Response choices were: (1) *Probably Impossible*; (2) *Very Difficult*; (3) *Fairly Difficult*; (4) *Fairly Easy*; and (5) *Very Easy*. Perceived availability of drugs has been shown to be strongly associated with substance use in previous Hawai’i survey efforts (Pearson, 2004). A high perceived availability of drugs was defined as a response of *Very Easy* and *Fairly Easy*.

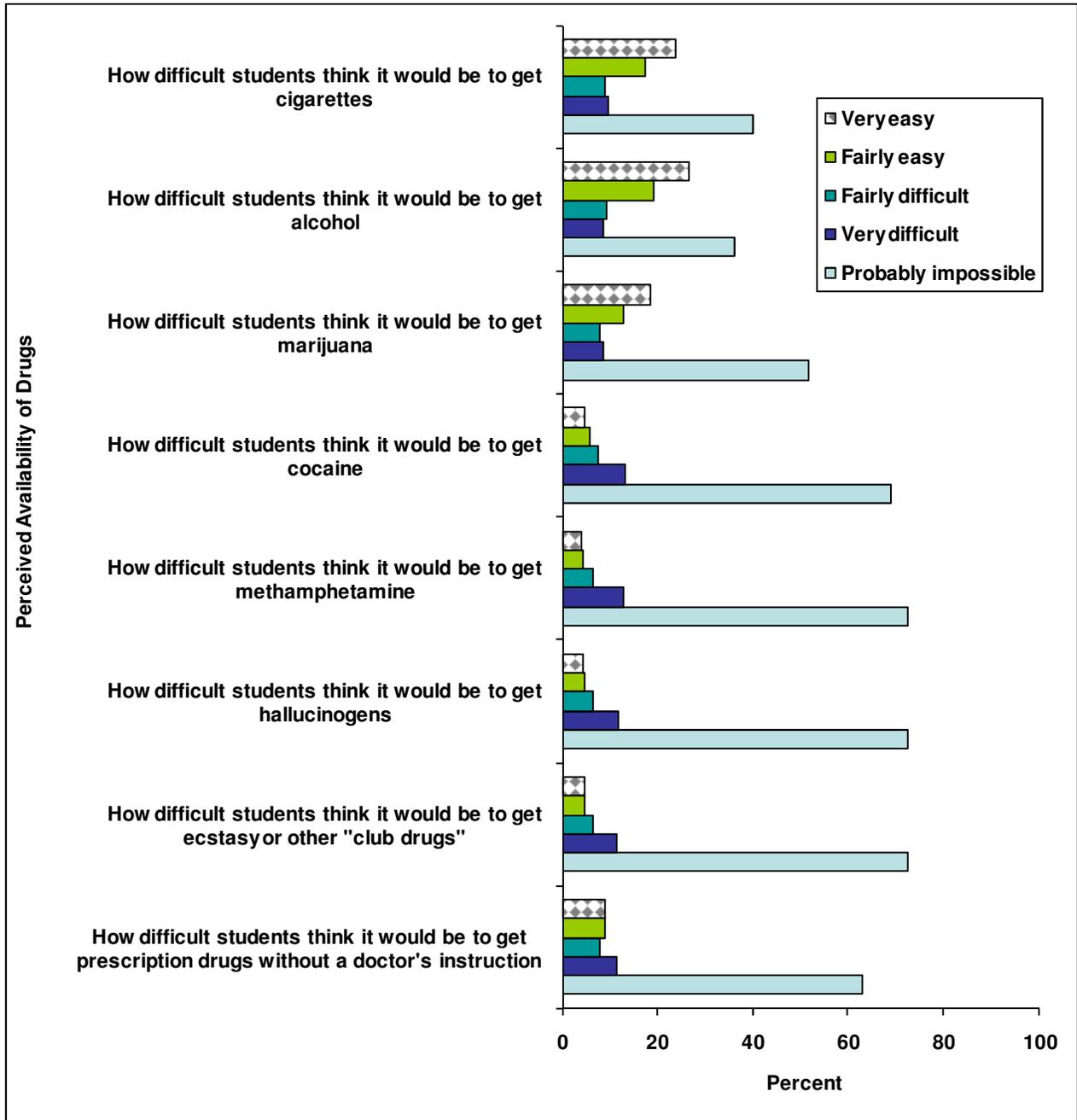


Figure 4e.11. Perceived Availability of Drugs, 2007 (Weighted Data)

Students reported that it would be easier to obtain cigarettes (41.2%), alcohol (46.0%), and marijuana (31.5%) in comparison to other drugs. Students reported that it would be difficult to obtain methamphetamine (72.4% said it would probably be impossible and 12.8% said it would be very difficult),

hallucinogens (72.6% said it would probably be impossible and 11.8% said it would be very difficult), and ecstasy (72.4% said it would probably be impossible and 11.6% said it would be very difficult).

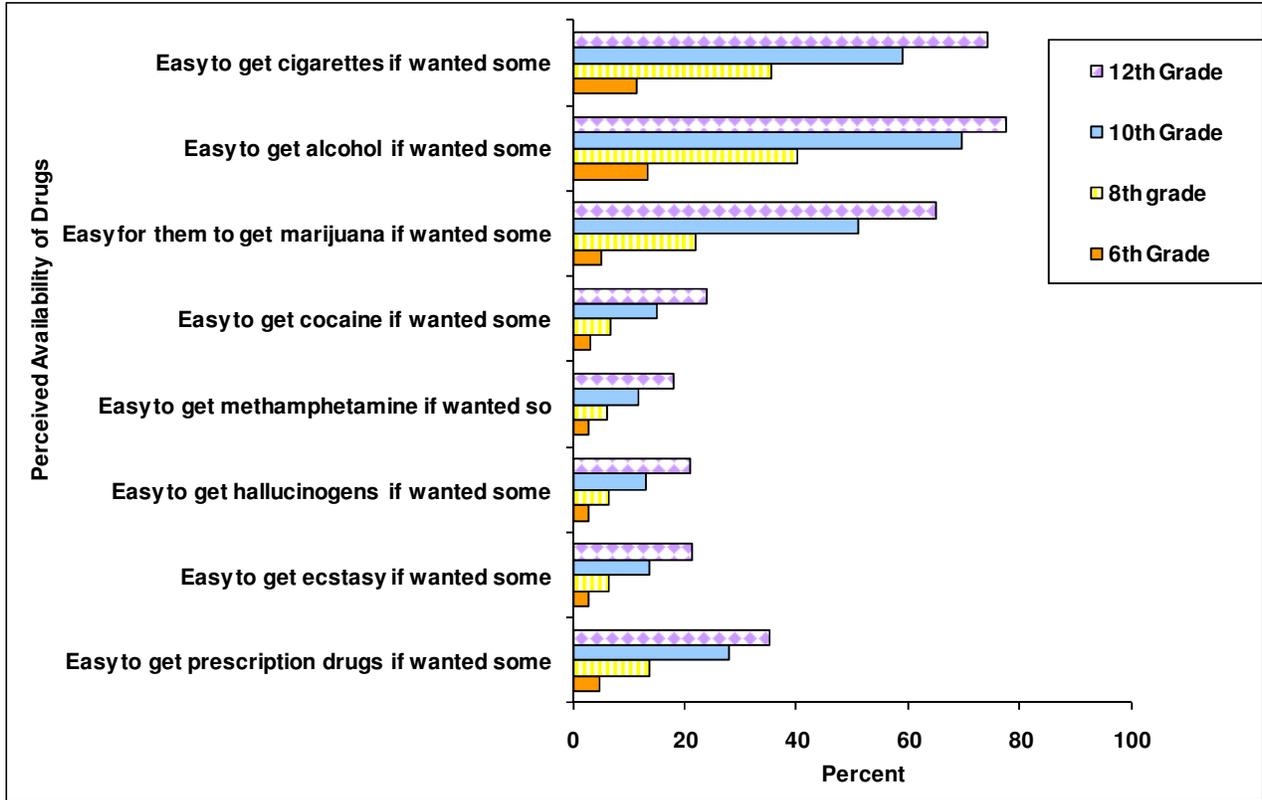


Figure 4e.12. Perceived Availability of Drugs by Gender, 2007 (Weighted Data)

Overall, perceived availability of drugs increased with grade level from 6<sup>th</sup> to 12<sup>th</sup> grade. Grade differences of perceived availability were more evident for cigarettes (74.4% of 12<sup>th</sup> graders, 59% of 10<sup>th</sup> graders, 35.6% of 8<sup>th</sup> graders, and 11.5% of 6<sup>th</sup> graders;  $\chi^2=5598$ ,  $df=3$ ,  $p<.001$ ), alcohol (77.6% of 12<sup>th</sup> graders, 69.5% of 10<sup>th</sup> graders, 40.2% of 8<sup>th</sup> graders, and 13.5% of 6<sup>th</sup> graders;  $\chi^2=6313.7$ ,  $df=3$ ,  $p<.001$ ), and marijuana (65% of 12<sup>th</sup> graders, 51% of 10<sup>th</sup> graders, 22% of 8<sup>th</sup> graders, and 5.2% of 6<sup>th</sup> graders;  $\chi^2=5922.5$ ,  $df=3$ ,  $p<.001$ ).

Although similar in pattern, perceived availability differences by grade were smaller for cocaine (24% of 12<sup>th</sup> graders, 15.1% of 10<sup>th</sup> graders, 6.7% of 8<sup>th</sup> graders, and 3.1% of 6<sup>th</sup> graders;  $\chi^2=1416$ ,  $df=3$ ,

$p < .001$ ), methamphetamine (18% of 12<sup>th</sup> graders, 11.7% of 10<sup>th</sup> graders, 6.1% of 8<sup>th</sup> graders, and 2.7% of 6<sup>th</sup> graders;  $\chi^2=891.6$ ,  $df=3$ ,  $p < .001$ ), hallucinogens (20.9% of 12<sup>th</sup> graders, 13% of 10<sup>th</sup> graders, 6.3% of 8<sup>th</sup> graders, and 2.7% of 6<sup>th</sup> graders;  $\chi^2=1156.6$ ,  $df=3$ ,  $p < .001$ ), ecstasy (21.3% of 12<sup>th</sup> graders, 13.8% of 10<sup>th</sup> graders, 6.3% of 8<sup>th</sup> graders, and 2.8% of 6<sup>th</sup> graders;  $\chi^2=1191.8$ ,  $df=3$ ,  $p < .001$ ), and prescription drugs (35.3% of 12<sup>th</sup> graders, 27.9% of 10<sup>th</sup> graders, 13.9% of 8<sup>th</sup> graders, and 4.7% of 6<sup>th</sup> graders;  $\chi^2=2079.4$ ,  $df=3$ ,  $p < .001$ ).

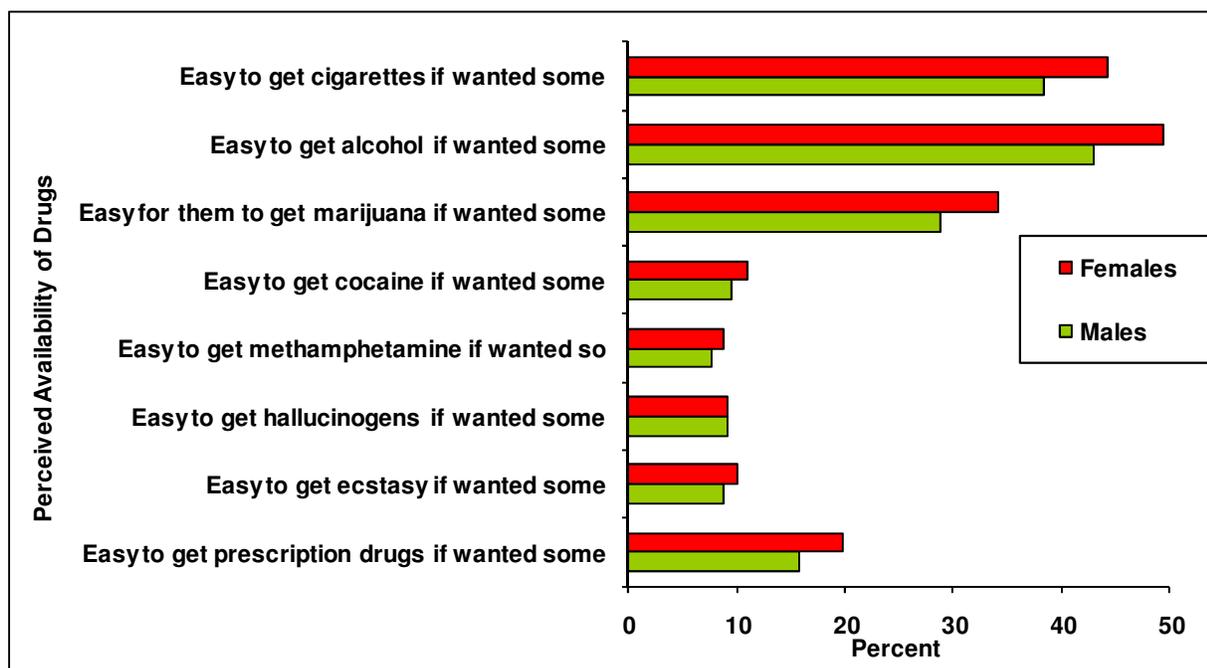


Figure 4e.13. Perceived Availability of Drugs by Gender, 2007 (Weighted Data)

Overall, more females than males reported perceiving drugs to be readily available. Females perceived greater availability for cigarettes (44.3% vs. 38.3%;  $\chi^2=83.2$ ,  $df=1$ ,  $p < .001$ ), alcohol (49.5% vs. 42.9%;  $\chi^2=97.2$ ,  $df=1$ ,  $p < .001$ ), marijuana (34.1% vs. 28.8%;  $\chi^2=69.5$ ,  $df=1$ ,  $p < .001$ ), and prescription drugs (19.8% vs. 15.7%;  $\chi^2=59.9$ ,  $df=1$ ,  $p < .001$ ). Smaller gender differences were found for cocaine with females reporting greater perceived availability (11% vs. 9.6%;  $\chi^2=10.3$ ,  $df=1$ ,  $p < .01$ ), methamphetamine (8.7% vs. 7.7%;  $\chi^2=6.2$ ,  $df=1$ ,  $p < .05$ ), and ecstasy (10.1% vs. 8.7%;  $\chi^2=11.8$ ,  $df=1$ ,  $p < .01$ ). There were no significant

differences by gender for perceived availability of hallucinogens (females 9.2% vs. males 9.1%;  $\chi^2=.037$ ,  $df=1$ ,  $p=.847$ ).

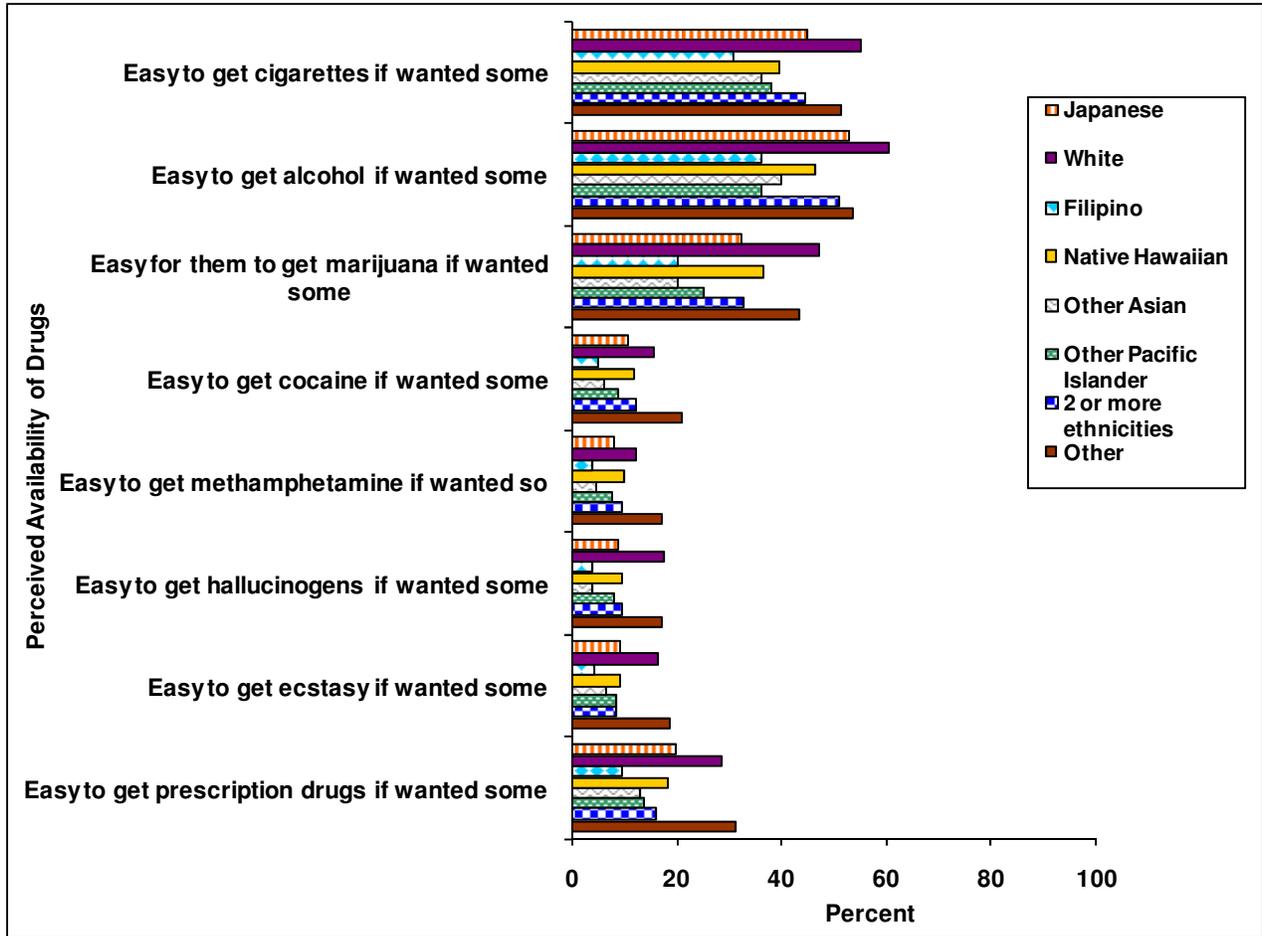


Figure 4e.14. Perceived Availability of Drugs by Ethnicity, 2007 (Weighted Data)

Significant differences were found by ethnicity for perceived availability of drugs. Caucasian students were most likely, and Filipino students least likely, to report drugs being easily available. Almost 45% of Japanese students, 55.2% of Caucasian students, 31% of Filipino students, 39.6% of Native Hawaiian students, 36.2% of Other Asian students, 38.1% of Other Pacific Islander students, 44.5% of students of 2 or more ethnicities, and 51.4% of students of Other ethnicity reported that if they wanted to it would be easy to get cigarettes ( $\chi^2=696.2$ ,  $df=7$ ,  $p<.001$ ). Students reported similar patterns of perceived availability for alcohol (52.9% of Japanese students, 60.5% of Caucasian students, 36.1% of Filipino students, 46.2% of

Native Hawaiian students, 40% of Other Asian students, 36.2% of Other Pacific Islander students, 51.1% of students of 2 or more ethnicities, and 53.7% of students of Other ethnicity;  $\chi^2=792.3$ ,  $df=7$ ,  $p<.001$ ) and marijuana (32.3% of Japanese students, 47.2% of Caucasian students, 20.5% of Filipino students, 36.5% of Native Hawaiian students, 20.5% of Other Asian students, 25.1% of Other Pacific Islander students, 33% of students of 2 or more ethnicities, and 43.5% of students of Other ethnicity;  $\chi^2=1059.9$ ,  $df=7$ ,  $p<.001$ ).

Ethnic group differences were smaller for cocaine (10.9 % of Japanese students, 15.4% of Caucasian students, 5.2% of Filipino students, 11.9% of Native Hawaiian students, 6.4% of Other Asian students, 8.9% of Other Pacific Islander students, 12.3% of students of 2 or more ethnicities, and 21.1% of students of Other ethnicity;  $\chi^2=470.8$ ,  $df=7$ ,  $p<.001$ ), methamphetamine (8.2% of Japanese students, 12% of Caucasian students, 4% of Filipino students, 9.7% of Native Hawaiian students, 4.8% of Other Asian students, 7.6% of Other Pacific Islander students, 9.6% of students of 2 or more ethnicities, and 17.3% of students of Other ethnicity;  $\chi^2=382.8$ ,  $df=7$ ,  $p<.001$ ), hallucinogens (9.1% of Japanese students, 17.6% of Caucasian students, 3.8% of Filipino students, 9.6% of Native Hawaiian students, 4.1% of Other Asian students, 8% of Other Pacific Islander students, 9.8% of students of 2 or more ethnicities, and 17.3% of students of Other ethnicity;  $\chi^2=655.3$ ,  $df=7$ ,  $p<.001$ ), ecstasy (9.4% of Japanese students, 16.2% of Caucasian students, 4.5% of Filipino students, 9.2% of Native Hawaiian students, 6.8% of Other Asian students, 8.4% of Other Pacific Islander students, 8.6% of students of 2 or more ethnicities, and 18.8% of students of Other ethnicity ( $\chi^2=502.8$ ,  $df=7$ ,  $p<.001$ ), and prescription drugs (19.8% of Japanese students, 28.5% of Caucasian students, 9.6% of Filipino students, 18.4% of Native Hawaiian students, 13.2% of Other Asian students, 13.7% of Other Pacific Islander students, 16.1% of students of 2 or more ethnicities, and 31.1% of students of Other ethnicity;  $\chi^2=764.2$ ,  $df=7$ ,  $p<.001$ ).

Table 4e.3. Correlations Between Perceived Availability of Drugs and Substance Use Prevalence, 2007  
(Entries are correlations)

<b>Risk Factor: Perceived Availability of Drugs</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How difficult it would be to get cigarettes	.32	.27	.25	.26	.25	.14
How difficult it would be to get alcohol	.35	.29	.19	.25	.25	.14
How difficult it would be to get marijuana	.38	.35	.26	.36	.34	.20
How difficult it would be to get cocaine	.36	.36	.28	.33	.36	.27
How difficult it would be to get methamphetamine	.33	.33	.27	.32	.35	.30
How difficult it would be to get hallucinogens	.33	.33	.28	.34	.35	.28
How difficult it would be to get ecstasy or other "club drugs"	.35	.34	.29	.33	.35	.28
How difficult it would be to get prescription drugs	.28	.28	.22	.27	.28	.20

For the most part, measures of perceived availability of drugs were mildly, positively correlated ( $r=.20$  to  $.38$ ) with monthly substance use, drinking or getting high at school and selling illegal drugs.

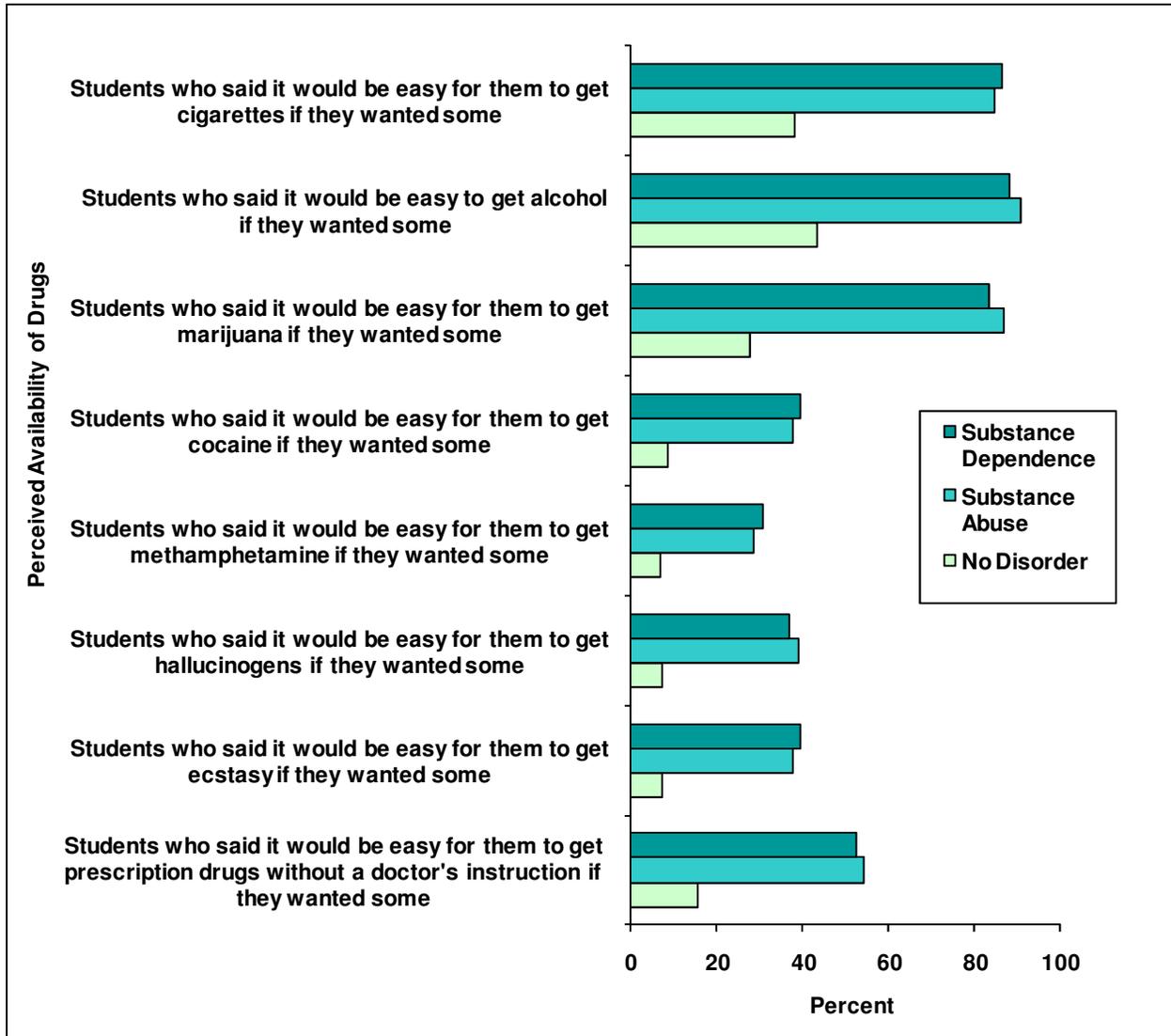


Figure 4e.15. Perceived Availability of Drugs by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to perceive drugs as being easily accessible. Students with substance abuse and dependence had similar responses of perceived availability of drug use but significantly greater perceived ability of drug use than students without substance abuse or dependence. For the perception of easy access to cigarettes (86.4% dependence, 84.6% abuse vs. 38.2% none,  $\chi^2=1496.6$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to alcohol (88.3% dependence, 90.7% abuse vs. 43.5% none,  $\chi^2=1393.6$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to marijuana (83.6% dependence, 86.9% abuse vs. 27.7% none,  $\chi^2=2400.4$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to cocaine

(39.6% dependence, 37.6% abuse vs. 8.4% none,  $\chi^2=1321.0$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to methamphetamine (30.9% dependence, 28.5% abuse vs. 6.7% none,  $\chi^2=924.6$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to hallucinogens, 36.8% dependence, 39% abuse vs. 7.1% none,  $\chi^2=1506.3$ ,  $df=2$ ,  $p<.001$ ); perception of easy access to ecstasy (39.7% dependence, 37.6% abuse vs. 7.4% none,  $\chi^2=1508.0$ ,  $df=2$ ,  $p<.001$ ); and perception of easy access to prescription drugs without a doctor's instruction (52.4% dependence, 54.2% abuse vs. 15.7% none,  $\chi^2=1332.0$ ,  $df=2$ ,  $p<.001$ ). More students reported easy access to cigarettes, alcohol, and marijuana than other drugs regardless of substance use disorder.

#### EXPOSURE TO COMMUNITY ATOD USE

---

Exposure to community ATOD use was measured through a 3-item, 5-point scale that assessed how often, during the last 12 months, has a student been around people in their neighborhood or school when they were using cigarettes, alcohol, or drugs other than tobacco or alcohol. Response choices were: (0) *Not at all*; (1) *A few times a year*; (2) *Once or twice a month*; (3) *At least once a week*; and (4) *Almost every day*. Exposure to community ATOD use has been shown to be strongly associated with substance use in previous Hawai'i survey efforts. High risk was defined by the response of *almost every day* for alcohol and cigarettes and any exposure for other drug use.

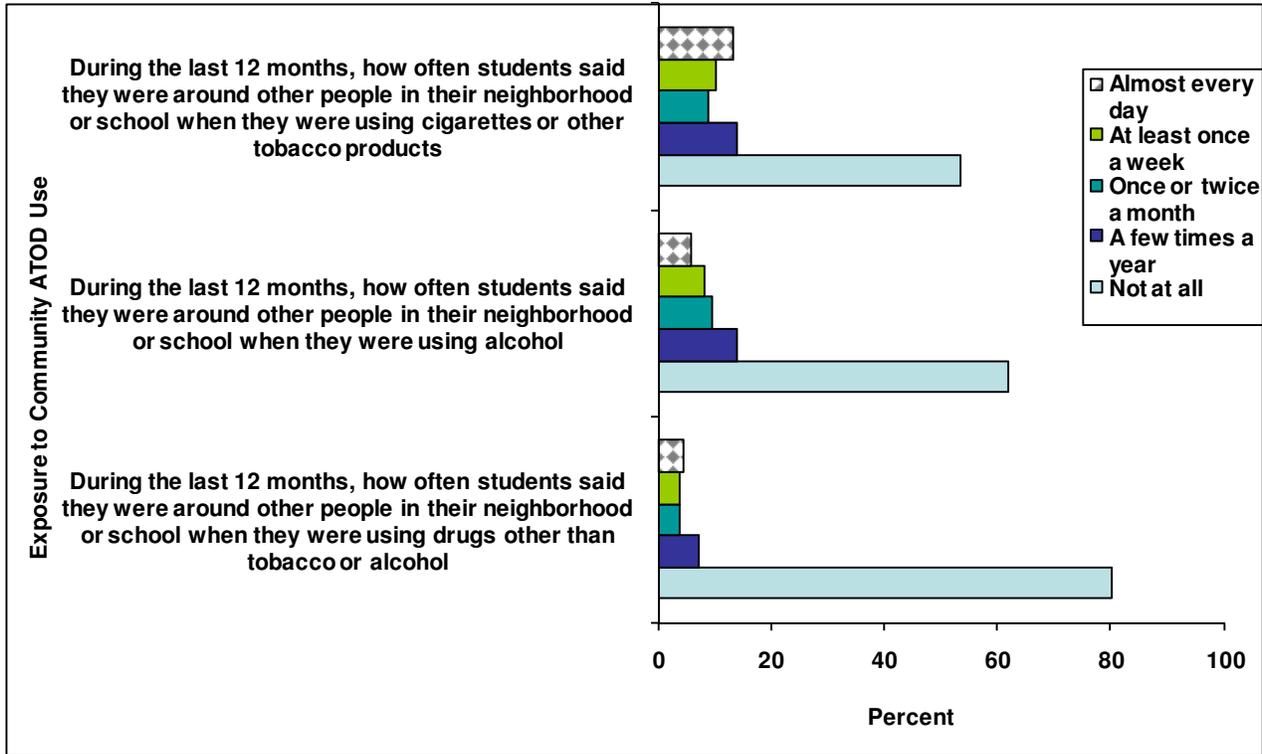


Figure 4e.16. Exposure to Community ATOD Use, 2007 (Weighted Data)

Exposure to community ATOD use was found to be highest for cigarette exposure (13.5% of students said they were exposed almost every day, followed by 5.9% of students who reported daily or near daily exposure to alcohol). Approximately half (46.5%) of the students reported being exposed to drugs other than tobacco or alcohol.

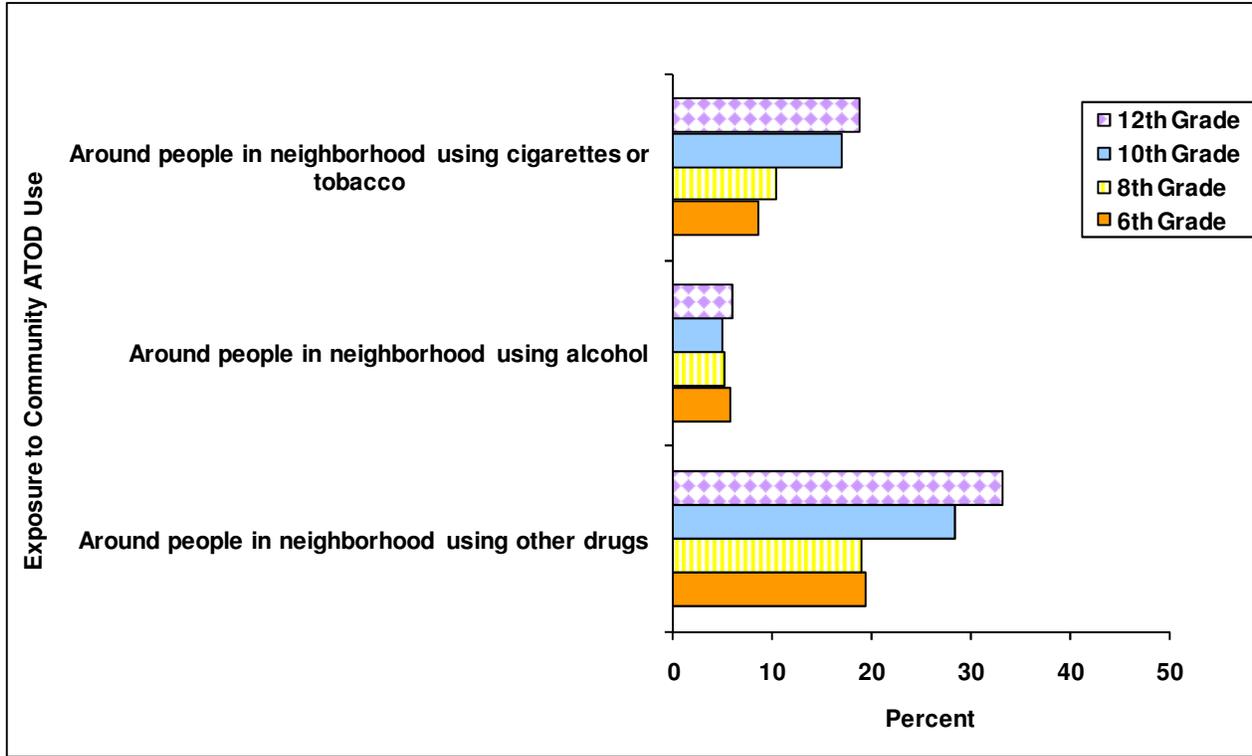


Figure 4e.17. Exposure to Community ATOD Use by Grade, 2007 (Weighted Data)

Exposure to community ATOD use was highest for 12<sup>th</sup> graders, generally decreasing with grade level. Nineteen percent of 12<sup>th</sup> graders, 17.1% of 10<sup>th</sup> graders, 10.6% of 8<sup>th</sup> graders, and 8.6% of 6<sup>th</sup> graders were exposed daily to people in their neighborhood using cigarettes or tobacco products ( $\chi^2=456.1$ ,  $df=3$ ,  $p<.001$ ). Approximately 6% of 12<sup>th</sup> graders, 5.1% of 10<sup>th</sup> graders, 5.3% of 8<sup>th</sup> graders, and 5.9% of 6<sup>th</sup> graders were exposed daily to people in their neighborhood using alcohol ( $\chi^2=8.5$ ,  $df=3$ ,  $p<.05$ ). About 33% of 12<sup>th</sup> graders, 28.4% of 10<sup>th</sup> graders, 19.2% of 8<sup>th</sup> graders, and 19.5% of 6<sup>th</sup> graders reported having any exposure to other people in their neighborhood using other illegal drugs ( $\chi^2=508.9$ ,  $df=3$ ,  $p<.01$ ).

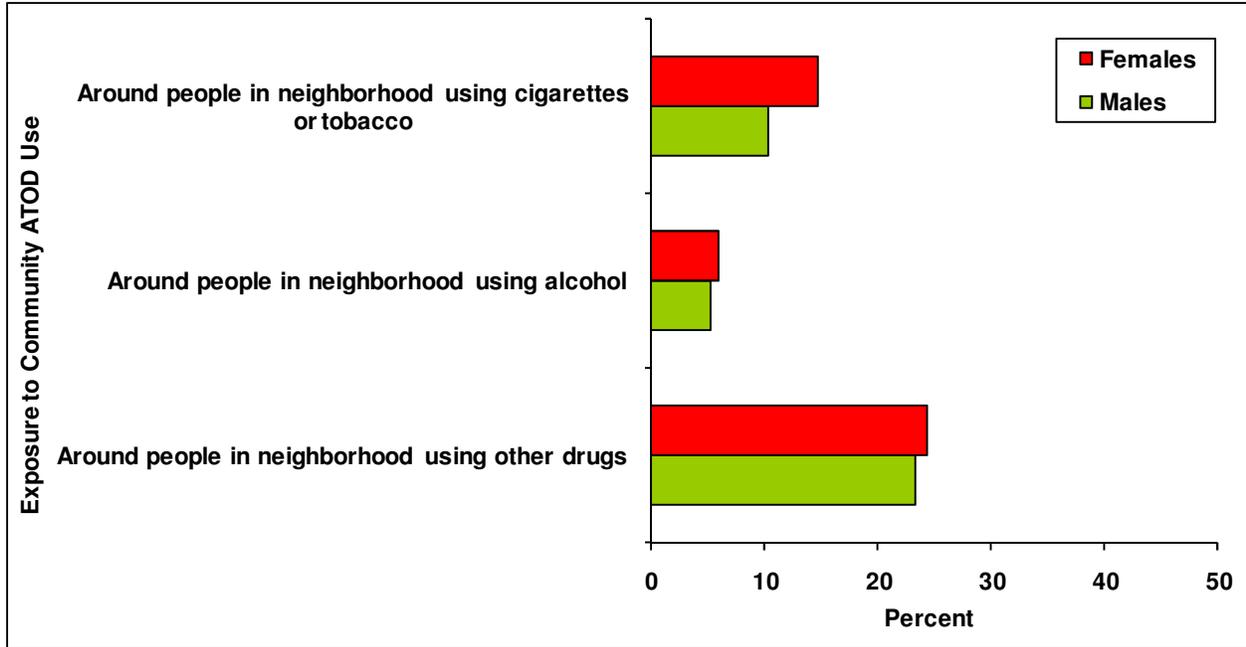


Figure 4e.18. Exposure to Community ATOD Use by Gender, 2007 (Weighted Data)

Overall, more females than males reported daily exposure to community ATOD use for cigarettes or tobacco (10.3% vs. 14.7%;  $\chi^2=113.7$ ,  $df=1$ ,  $p<.001$ ) and alcohol (5.2% vs. 5.9%;  $\chi^2=5.2$ ,  $df=1$ ,  $p<.05$ ). There were no significant differences by gender for exposure to people in the neighborhood using other drugs (males 23.3% vs. females 24.3%;  $\chi^2=3.4$ ,  $df=1$ ,  $p=.065$ ).

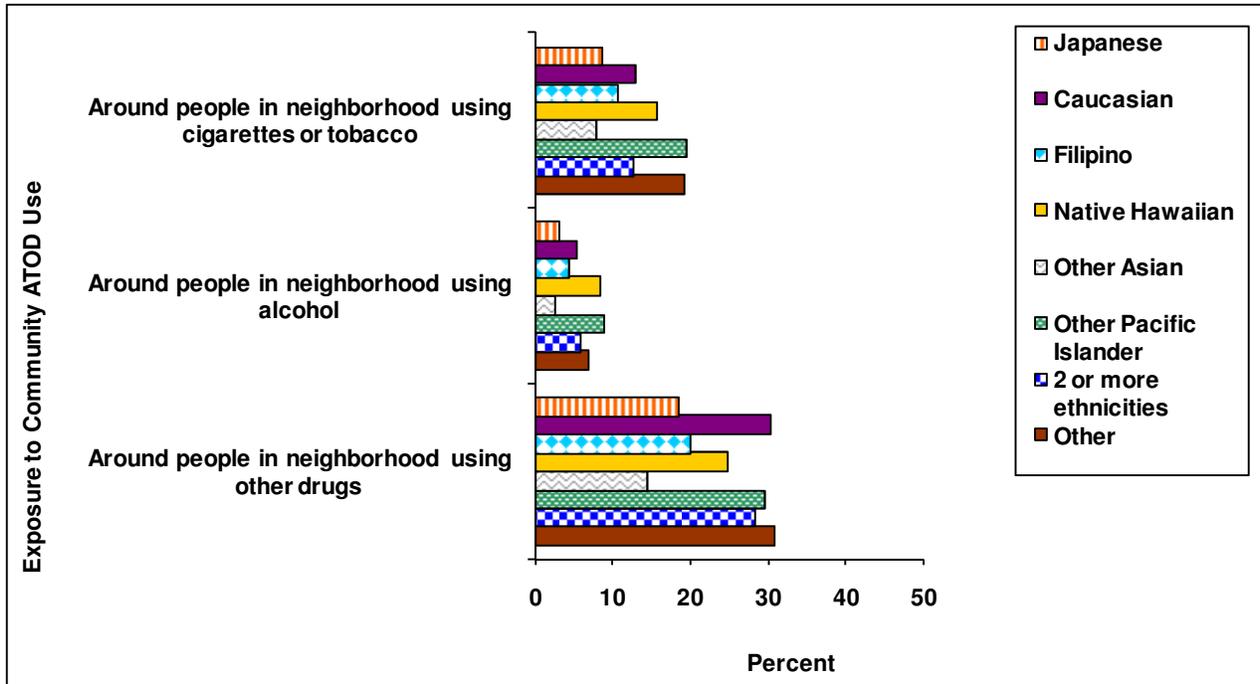


Figure 4e.19. Exposure to Community ATOD Use by Ethnicity, 2007 (Weighted Data)

Significant differences were found by ethnicity for exposure to community ATOD use. Students of Other Pacific Islander and Native Hawaiian ethnicities were most likely to report being around people everyday in their neighborhood who use cigarettes or tobacco (8.6% of Japanese students, 13% of Caucasian students, 10.7% of Filipino students, 15.7% of Native Hawaiian students, 8% of Other Asian students, 19.5% of Other Pacific Islander students, 12.6% of students of 2 or more ethnicities, and 19.2% of students of Other ethnicity;  $\chi^2=332.9$ ,  $df=7$ ,  $p<.001$ ) or alcohol (3.2% of Japanese students, 5.5% of Caucasian students, 4.5% of Filipino students, 8.3% of Native Hawaiian students, 2.6% of Other Asian students, 8.9% of Other Pacific Islander students, 5.8% of students of 2 or more ethnicities, and 7% of students of Other ethnicity;  $\chi^2=213.6$ ,  $df=7$ ,  $p<.001$ ).

Students of Other Pacific Islander, Caucasian, 2 or more, Other, and Native Hawaiian ethnicities were more likely to report any exposure to people in their neighborhood using other illegal drugs (18.4 % of Japanese students, 30.2% of Caucasian students, 20.1% of Filipino students, 24.8% of Native Hawaiian

students, 14.4% of Other Asian students, 29.5% of Other Pacific Islander students, 28.4% of students of 2 or more ethnicities, and 30.7% of students of Other ethnicity;  $\chi^2=429.5$ ,  $df=7$ ,  $p<.001$ )

Table 4e.4. Correlations Between Exposure to Community ATOD Use and Substance Use Prevalence, 2007 (Entries are correlations)

Risk Factor: Exposure to Community ATOD Use	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
How often around neighborhood people using cigarettes or other tobacco products	.27	.26	.24	.23	.22	.14
How often around neighborhood people using alcohol	.32	.31	.19	.25	.25	.17
How often around neighborhood people using drugs other than tobacco or alcohol	.33	.32	.26	.35	.35	.24

Overall, exposures to community ATOD use were mildly, positively correlated ( $r=.22$  to  $r=.35$ ) with youth substance use.

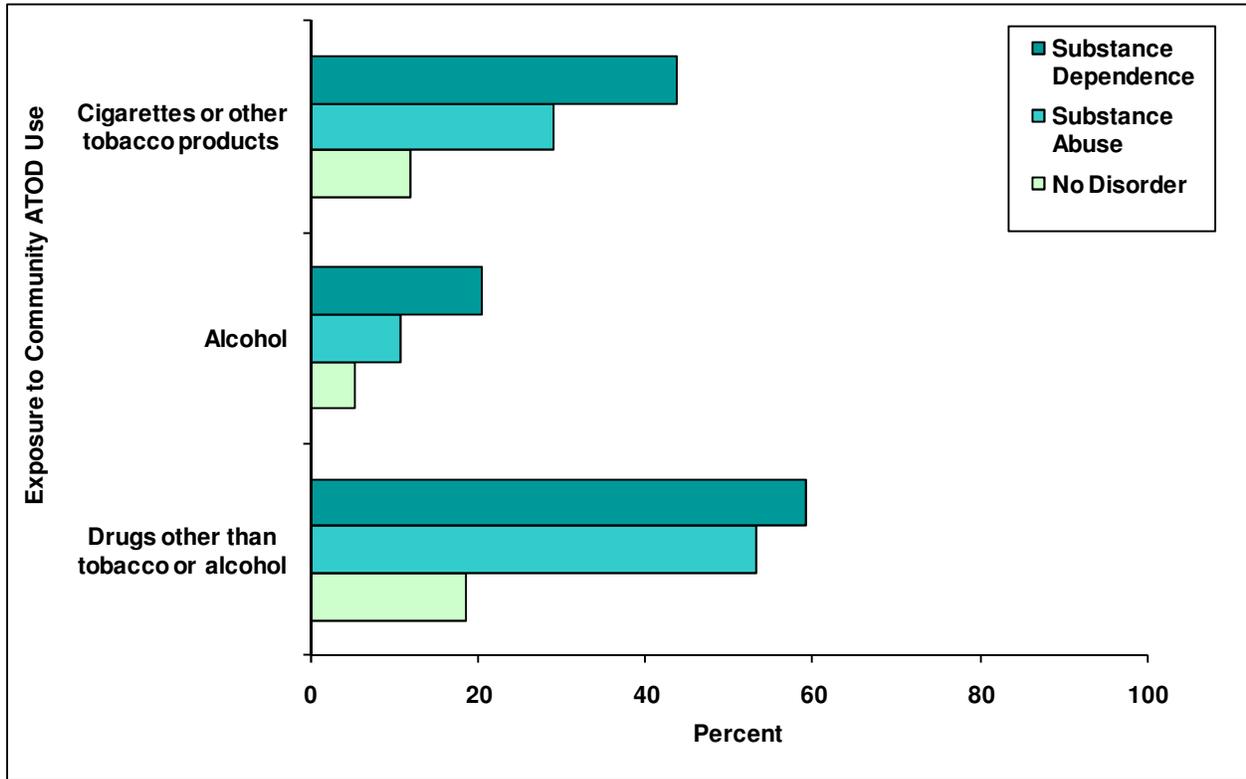


Figure 4e.20. Exposure to Community ATOD Use by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Students with substance abuse or dependence were significantly more likely to indicate that they had been exposed to community ATOD use. On every item, significantly more youth with substance dependence than youth with substance abuse indicated exposure to community ATOD use. For exposure to community ATOD use of cigarettes or other tobacco products (43.8% dependence vs. 29% abuse vs. 11.8% none,  $\chi^2=961.2$ ,  $df=2$ ,  $p<.001$ ); community exposure to alcohol use (20.5% dependence vs. 10.6% abuse vs. 5.2% none,  $\chi^2=414.3$ ,  $df=2$ ,  $p<.001$ ); and community exposure to drug use other than tobacco or alcohol (59.1% dependence vs. 53.3% abuse vs. 18.5% none,  $\chi^2=1455.8$ ,  $df=2$ ,  $p<.001$ ). More students reported exposure to community ATOD use of other drugs than exposure to tobacco or alcohol, regardless of substance use disorder.

## OPPORTUNITIES FOR PROSOCIAL COMMUNITY INVOLVEMENT

Opportunities for prosocial community involvement was based on 5 items. Students were asked whether there are organized sports, individual sporting facilities, Boys and Girls clubs, 4-H or other agricultural clubs, and music, dance or other clubs available in the community. Responses were either *Yes* or *No*, with *Yes* representing available opportunities.

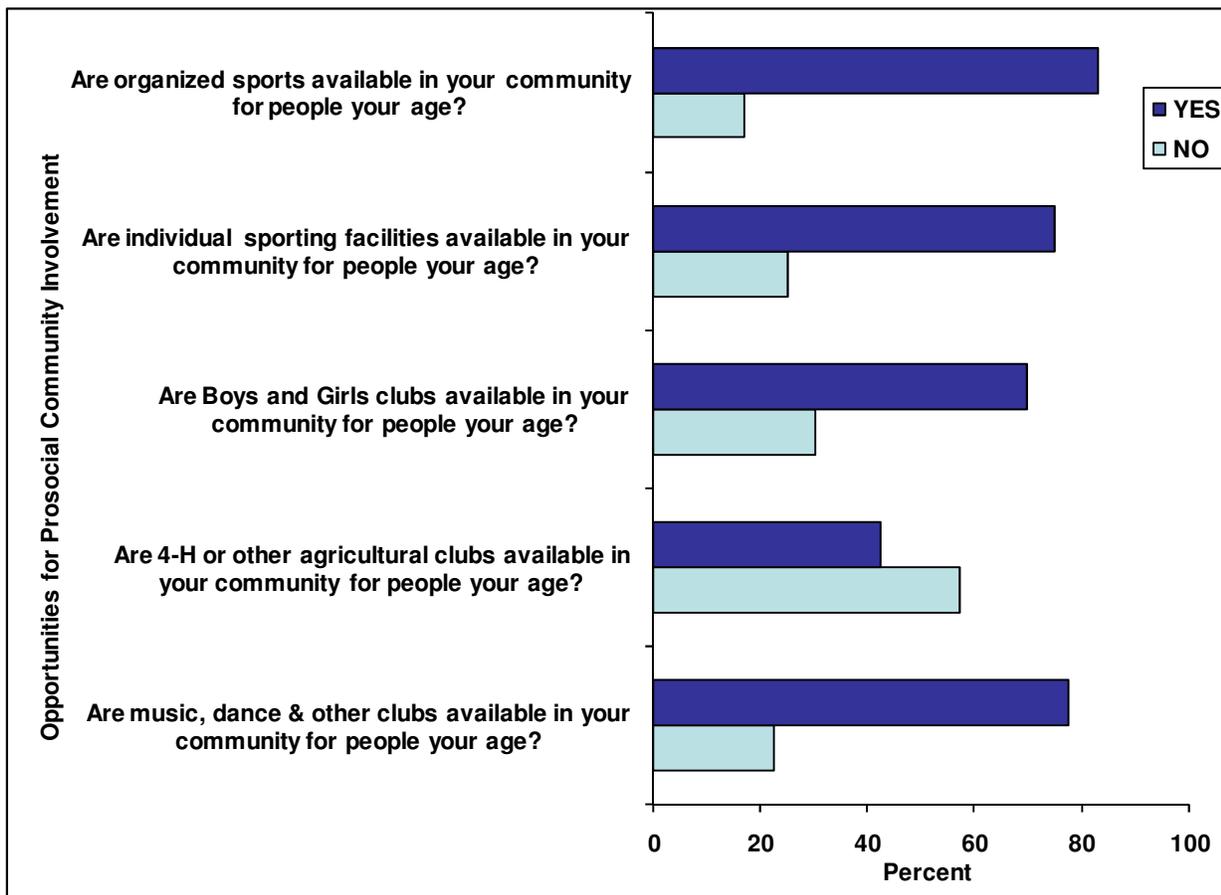


Figure 4e.21. Opportunities for Prosocial Community Involvement, 2007 (Weighted Data)

A significant amount of students reported that opportunities for prosocial community involvement were available in their community. The majority of students (83.2%) reported that organized sports were

available to students in their community, with close to half (42.6%) of the students reporting that 4-H or other agricultural clubs were available in their community.

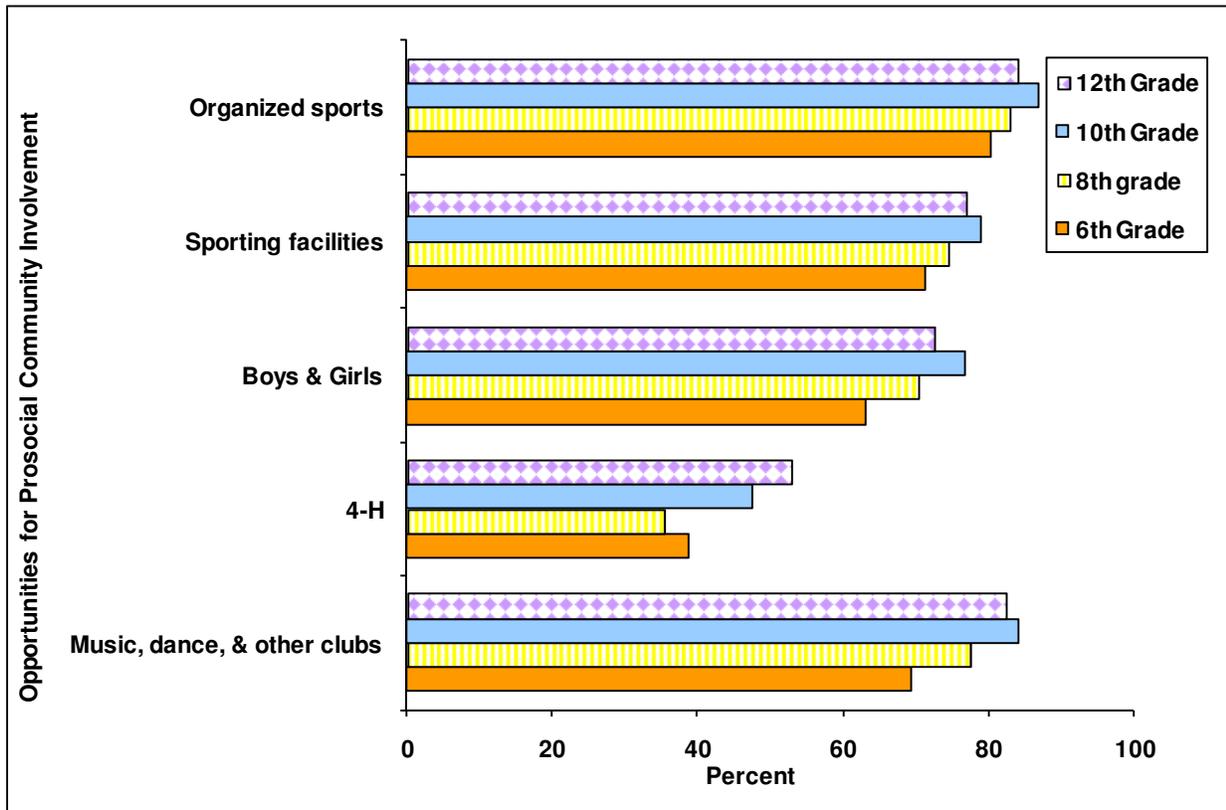


Figure 4e.22. Opportunities for Prosocial Community Involvement by Grade, 2007 (Weighted Data)

Overall, opportunities for prosocial community involvement was higher for older students for organized sports (84.2% of 12<sup>th</sup> graders, 87% of 10<sup>th</sup> graders, 82.9% of 8<sup>th</sup> graders, and 80.4% of 6<sup>th</sup> graders;  $\chi^2=87.2$ ,  $df=3$ ,  $p<.001$ ), sporting facilities (77% of 12<sup>th</sup> graders, 79.1% of 10<sup>th</sup> graders, 74.5% of 8<sup>th</sup> graders, and 71.4% of 6<sup>th</sup> graders;  $\chi^2=93.1$ ,  $df=3$ ,  $p<.001$ ), Boy's & Girls Club, (72.7% of 12<sup>th</sup> graders, 76.7% of 10<sup>th</sup> graders, 70.5% of 8<sup>th</sup> graders, and 63.1% of 6<sup>th</sup> graders;  $\chi^2=225.2$ ,  $df=3$ ,  $p<.001$ ), 4-H (53% of 12<sup>th</sup> graders, 47.5% of 10<sup>th</sup> graders, 35.4% of 8<sup>th</sup> graders, and 38.7% of 6<sup>th</sup> graders;  $\chi^2=254.3$ ,  $df=3$ ,  $p<.001$ ), and music, dance, and other clubs (82.5% of 12<sup>th</sup> graders, 84.1% of 10<sup>th</sup> graders, 77.4% of 8<sup>th</sup> graders, and 69.4% of 6<sup>th</sup> graders;  $\chi^2=388.8$ ,  $df=3$ ,  $p<.001$ ).

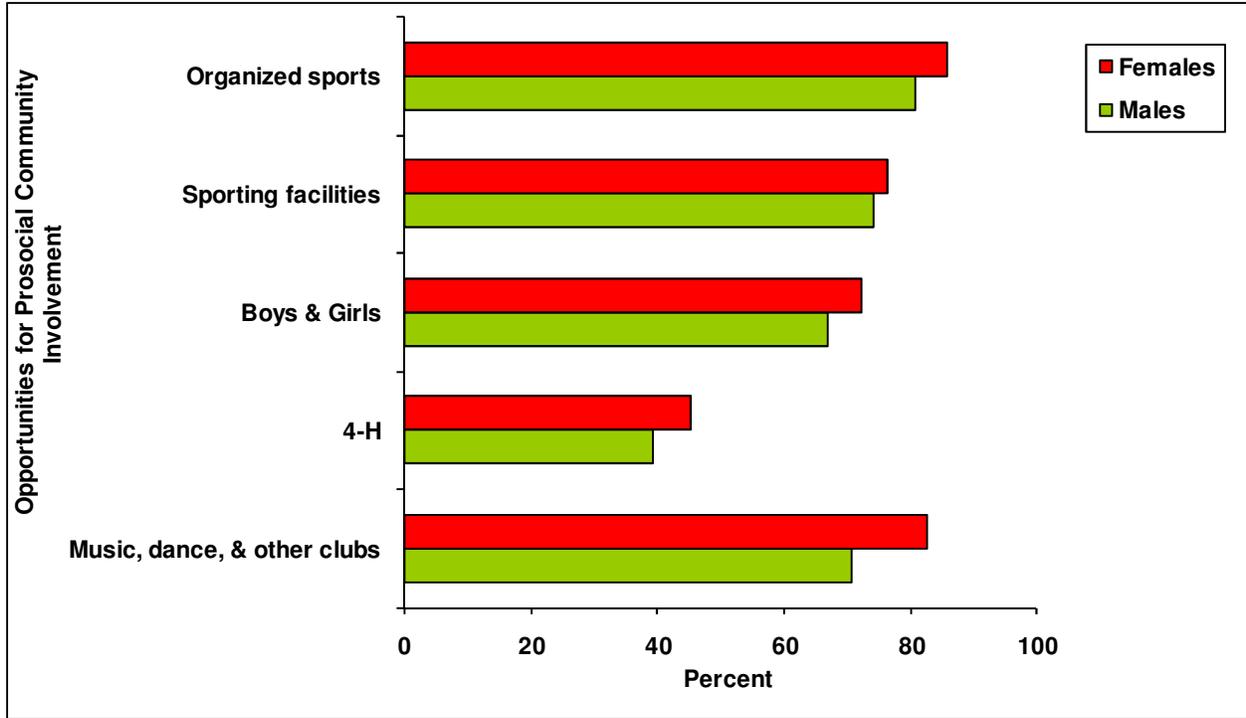


Figure 4e.23. Opportunities for Prosocial Community Involvement by Grade, 2007 (Weighted Data)

Overall, more females than males reported having opportunities for prosocial involvement in their community. Females were more likely than males to indicate there were organized sports (85.6% vs. 80.7%;  $\chi^2=84.8$ ,  $df=1$ ,  $p<.001$ ), sporting facilities (76.3% vs. 74.1%;  $\chi^2=12.9$ ,  $df=1$ ,  $p<.001$ ), Boys & Girls clubs (72.1% vs. 67.0%;  $\chi^2=51.9$ ,  $df=1$ ,  $p<.001$ ), and music, dance, or other performance arts groups (82.6% vs 70.6%;  $\chi^2=368.8$ ,  $df=1$ ,  $p<.001$ ) available in their community for youth.

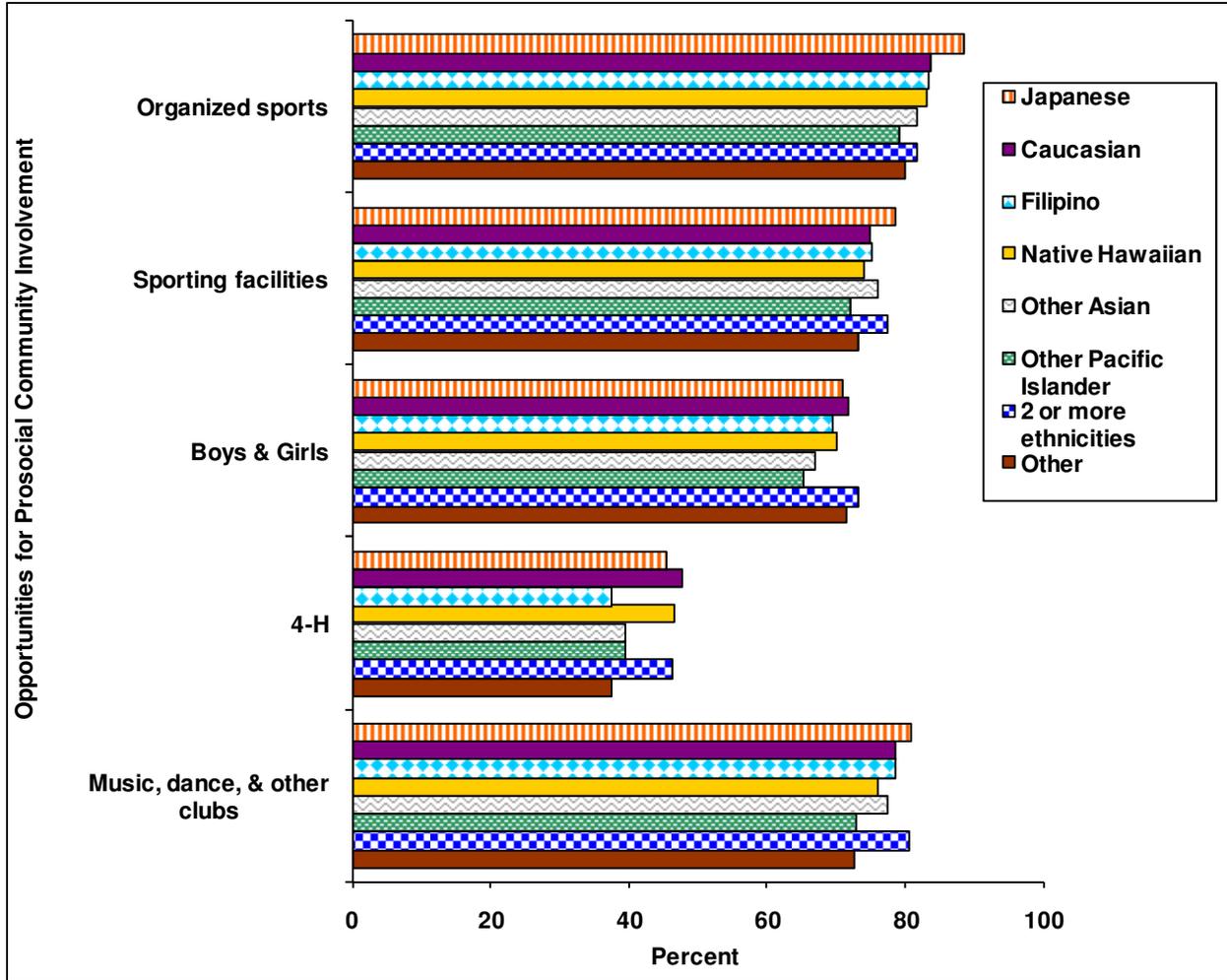


Figure 4e.24. Opportunities for Prosocial Community Involvement by Gender, 2007 (Weighted Data)

Significant differences were found by ethnicity for opportunities for prosocial community involvement. Students of Japanese and 2 or more ethnicities were generally highest, with students of Other Pacific Islander ethnicity lowest, in reporting availability of organized sports (88.5% of Japanese students, 83.7% of Caucasian students, 83.4% of Filipino students, 83.1% of Native Hawaiian students, 81.7% of Other Asian students, 79.3% of Other Pacific Islander students, 81.8% of students of 2 or more ethnicities, and 80.1% of students of Other ethnicity;  $\chi^2=90.2$ ,  $df=7$ ,  $p<.001$ ), sporting facilities (78.7% of Japanese students, 74.8% of Caucasian students, 75.2% of Filipino students, 74% of Native Hawaiian students, 76.1% of Other Asian students, 72.1% of Other Pacific Islander students, 77.6% of students of 2 or

more ethnicities, and 73.3% of students of Other ethnicity;  $\chi^2=34.8$ ,  $df=7$ ,  $p<001$ ), and music, dance & other performing arts groups (81% of Japanese students, 78.7% of Caucasian students, 78.5% of Filipino students, 76% of Native Hawaiian students, 77.4% of Other Asian students, 72.9% of Other Pacific Islander students, 80.6% of students of 2 or more ethnicities, and 72.7% of students of Other ethnicity;  $\chi^2=66.7$ ,  $df=7$ ,  $p<.001$ ) in their community.

Students of 2 or more, Japanese, Caucasian, and Native Hawaiian ethnicities were more likely to indicate availability of Boys & Girls clubs (71% of Japanese students, 71.8% of Caucasian students, 69.5% of Filipino students, 70.1% of Native Hawaiian students, 66.9% of Other Asian students, 65.4% of Other Pacific Islander students, 73.3% of students of 2 or more ethnicities, and 71.4% of students of Other ethnicity;  $\chi^2=33.0$ ,  $df=7$ ,  $p<.001$ ) and 4-H clubs (45.5% of Japanese students, 47.7% of Caucasian students, 37.6% of Filipino students, 46.5% of Native Hawaiian students, 39.4% of Other Asian students, 39.4% of Other Pacific Islander students, 46.2% of students of 2 or more ethnicities, and 37.6% of students of Other ethnicity;  $\chi^2=99.1$ ,  $df=7$ ,  $p<.001$ ) in their community in comparison to other ethnic groups.

Table 4e.5. Correlations Between Opportunities for Prosocial Community Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

<b>Risk Factor: Opportunities for Prosocial Community Involvement</b>	<b>Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency</b>					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
Availability of community organized sports	-.03	-.06	-.06	-.05	-.04	-.07
Availability of individual community sporting facilities	.00	-.03	-.01	-.03	-.02	-.04
Boys and Girls clubs	.02	.01	-.01	-.01	.00	-.03
4-H clubs or other organized agricultural, ranch, or farm-type clubs	.05	.04	.01	.01	.04	.01
Availability of community music, dance, & other clubs	.02	-.02	-.01	-.03	-.01	-.04

Overall, opportunities for prosocial community involvement were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

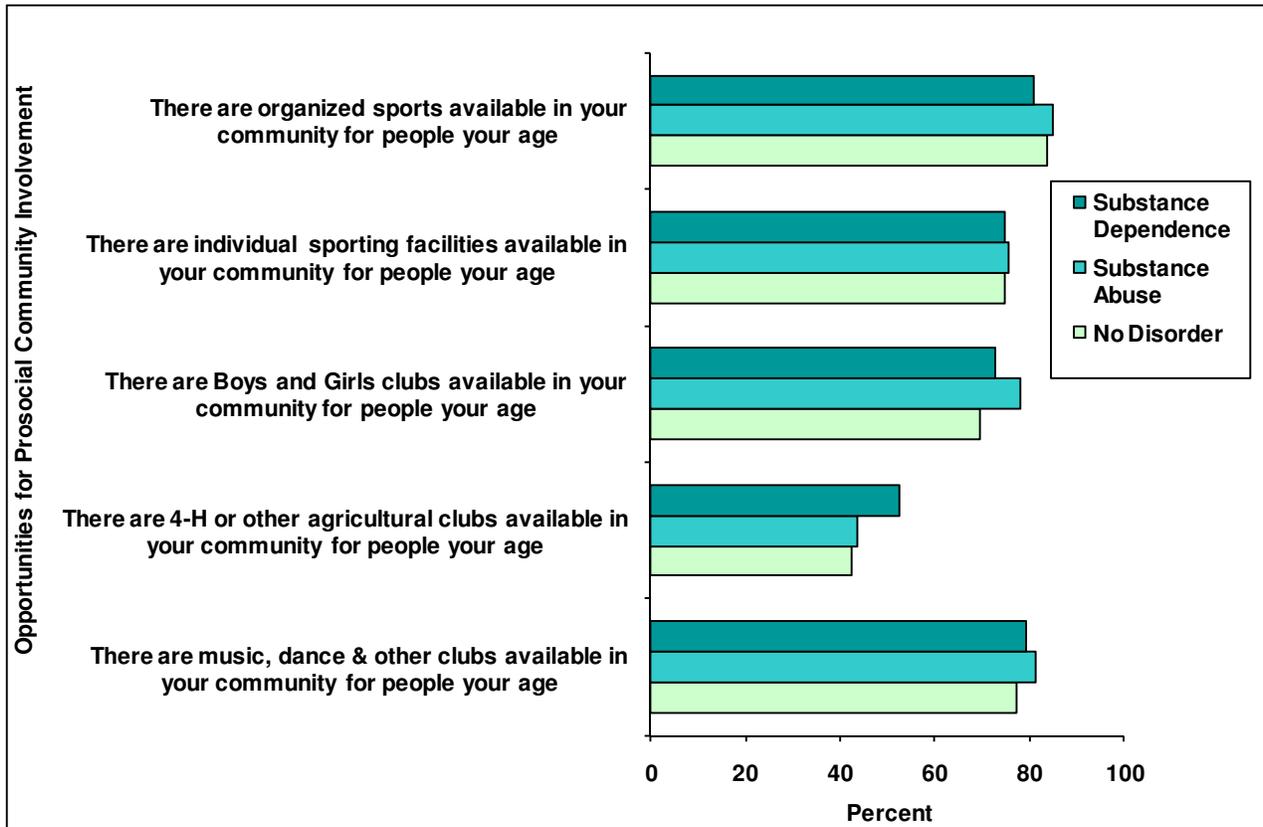


Figure 4e.25. Opportunities for Prosocial Community Involvement by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

Similar rates of opportunities for prosocial community involvement was reported by all students, regardless of whether or not a student has a substance disorder. For availability of Boys and Girls clubs (72.7% dependence, 78% abuse, 69.7% none,  $\chi^2=23.4$ ,  $df=2$ ,  $p<.001$ ); availability of 4-H or other agricultural clubs (52.7% dependence, 43.6% abuse, 42.5% none,  $\chi^2=22.7$ ,  $df=2$ ,  $p<.001$ ); and availability of music, dance, and other clubs (79.4% dependence, 81.5% abuse, 77.4% none,  $\chi^2=7.6$ ,  $df=2$ ,  $p=.022$ ). There were no significant differences found for availability of organized sports or availability of individual sporting facilities.

## REWARDS FOR PROSOCIAL COMMUNITY INVOLVEMENT

Rewards for prosocial community involvement was measured through a 3-item, 4-point scale that indexed the degree of rewards students reported from people in their neighborhood. Students were asked if neighbors notice when they are doing a good job and let them know about it, whether there are people in their neighborhood who encourage them to do their best, and whether there are people in their neighborhood who are proud of them when they do something well. Response choices were: (0) *NO!*; (1) *no*; (2) *yes*; and (3) *YES!* Being at risk for substance use was defined by combining the responses of *yes* and *YES!*. Responses of *YES!* and *yes* represents the presence of rewards for prosocial community involvement.

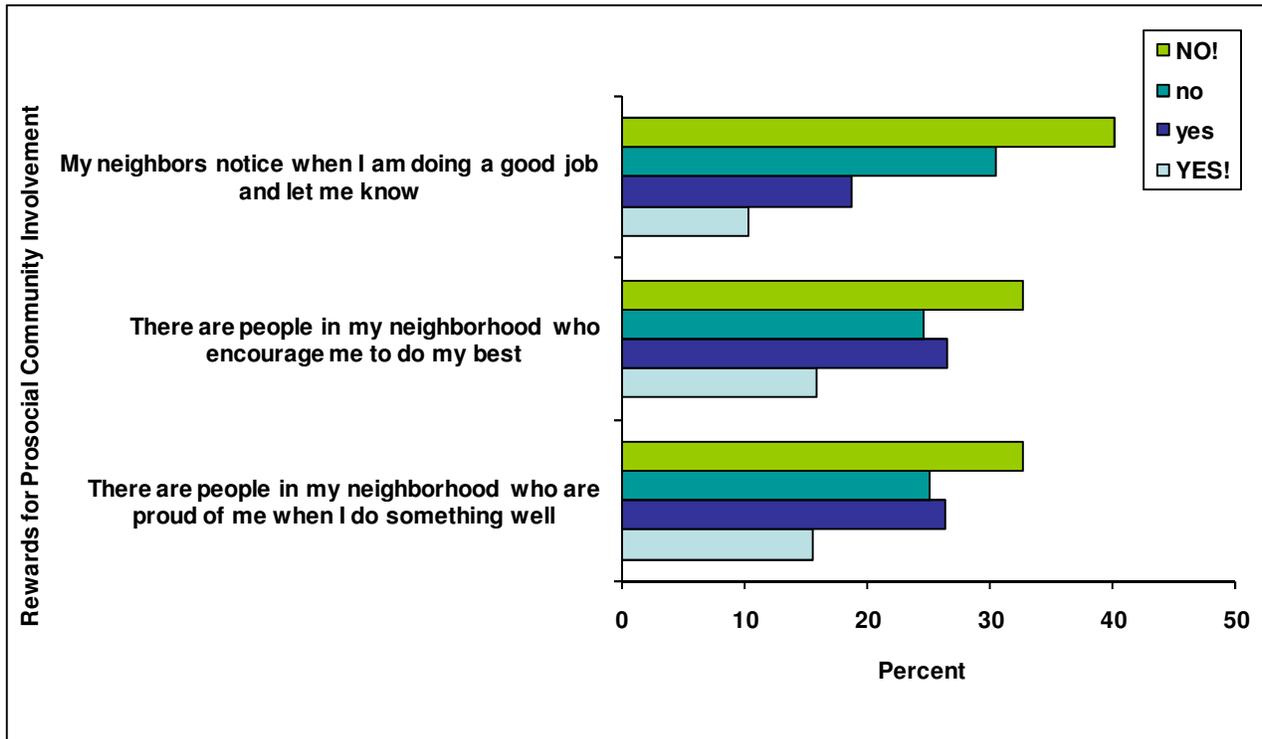


Figure 4e.26. Rewards for Prosocial Community Involvement, 2007 (Weighted Data)

A little over one-half of the students reported receiving no encouragement from people in their neighborhood to do their best (57.5%) and not having people in their neighborhood who are proud of them

when they do something well (58.0%). Approximately 30% of the students reported having neighbors who noticed the student doing a good job and letting them know.

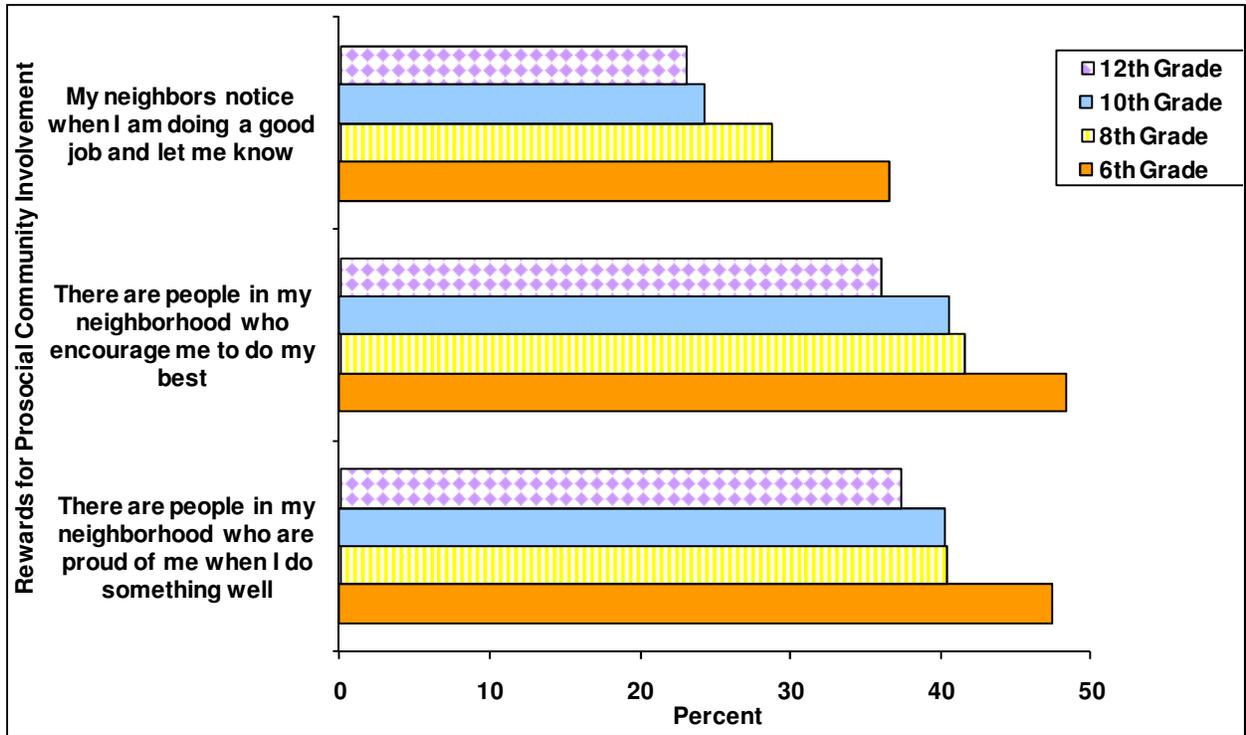


Figure 4e.27. Rewards for Prosocial Community Involvement by Grade, 2007 (Weighted Data)

Overall, rewards for prosocial community involvement decreased with higher grade levels from 6<sup>th</sup> to 12<sup>th</sup> grade. Twenty-three percent of 12<sup>th</sup> graders, 24.3% of 10<sup>th</sup> graders, 28.8% of 8<sup>th</sup> graders, and 36.6% of 6<sup>th</sup> graders indicated that neighbors notice when they are doing a good job and let them know ( $X^2=377.6$ ,  $df=3$ ,  $p<.001$ ). Similarly, 12<sup>th</sup> graders were less likely to report being encouraged by people in their neighborhood (36% of 12<sup>th</sup> graders, 40.5% of 10<sup>th</sup> graders, 41.6% of 8<sup>th</sup> graders, and 48.4% of 6<sup>th</sup> graders;  $X^2=218.6$ ,  $df=3$ ,  $p<.001$ ), or being told by people in their neighborhood that they are proud of them when the youth do something well (37.4% of 12<sup>th</sup> graders, 40.3% of 10<sup>th</sup> graders, 40.4% of 8<sup>th</sup> graders, and 47.4% of 6<sup>th</sup> graders;  $X^2=157.5$ ,  $df=3$ ,  $p<.001$ ).



Figure 4e.28. Rewards for Prosocial Community Involvement by Gender, 2007 (Weighted Data)

Some gender differences were found for rewards for prosocial community involvement, where generally more females than males reported receiving encouragement to do their best (44.2% vs. 40.8%;  $\chi^2=27.6$ ,  $df=1$ ,  $p<.001$ ) or neighbor pride for something youth have done well (44.0% vs. 40.4%;  $\chi^2=32.0$ ,  $df=1$ ,  $p<.001$ ). Slightly more males than females reported that neighbors notice when they do a good job and let them know (30.2% vs. 28.4%;  $\chi^2=8.9$ ,  $df=1$ ,  $p<.01$ ).

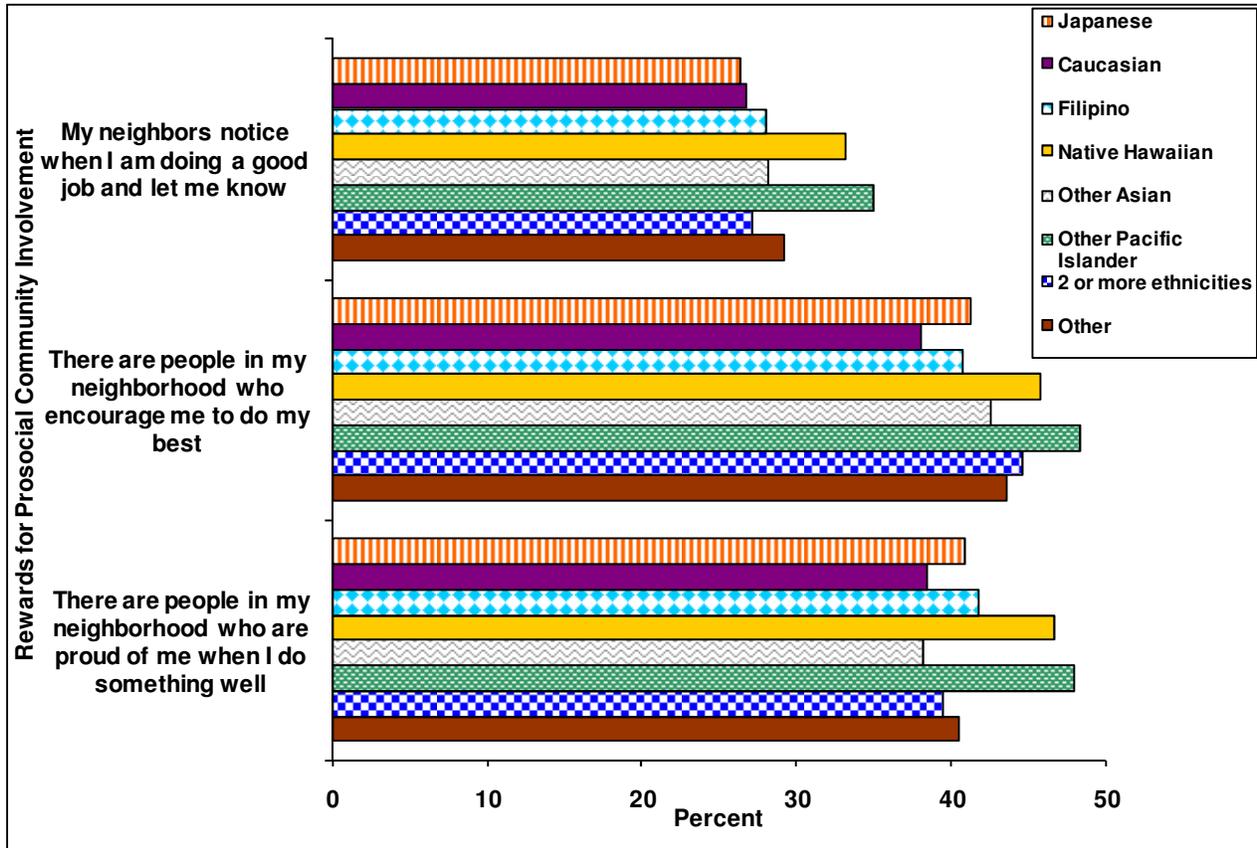


Figure 4e.29. Rewards for Prosocial Community Involvement by Ethnicity, 2007 (Weighted Data)

Significant differences were found by ethnicity for rewards for prosocial community involvement. Students of Native Hawaiian or Other Pacific Islander ethnicities were most likely to receive positive involvement from people in their neighborhood for noticing a job well done and letting the youth know (26.4% of Japanese students, 26.7% of Caucasian students, 28.1% of Filipino students, 33.2% of Native Hawaiian students, 28.2% of Other Asian students, 35.1% of Other Pacific Islander students, 27.7% of students of 2 or more ethnicities, and 29.2% of students of Other ethnicity;  $\chi^2=102.8$ ,  $df=7$ ,  $p<.001$ ), for encouraging youth to do their best (41.4% of Japanese students, 38.1% of Caucasian students, 40.8% of Filipino students, 45.8% of Native Hawaiian students, 42.6% of Other Asian students, 48.4% of Other Pacific Islander students, 44.7% of students of 2 or more ethnicities, and 43.6% of students of Other ethnicity;  $\chi^2=98.0$ ,  $df=7$ ,  $p<.001$ ), and being proud of youth when they do something well (41% of Japanese students,

38.5% of Caucasian students, 41.8% of Filipino students, 46.7% of Native Hawaiian students, 38.3% of Other Asian students, 48.1% of Other Pacific Islander students, 39.5% of students of 2 or more ethnicities, and 40.5% of students of Other ethnicity;  $\chi^2=109.7$ ,  $df=7$ ,  $p<.001$ ).

Table 4e.6. Correlations Between Rewards for Prosocial Community Involvement and Substance Use Prevalence, 2007 (Entries are correlations)

Protective Factor: Rewards for Prosocial Community Involvement	Youth Alcohol, Tobacco, and Other Drug (ATOD) Use Frequency					
	Monthly Alcohol Use	Monthly Binge Drink	Monthly Cigarette Use	Monthly Marijuana Use	Drunk or High at School	Sold Illegal Drugs
My neighbors notice when I am doing a good job and let me know	-.03	-.02	.00	-.03	.00	.01
There are people in my neighborhood who encourage me to do my best	-.04	-.04	-.02	-.04	-.03	-.01
There are people in my neighborhood who are proud of me when I do something well	-.04	-.02	-.01	-.03	-.02	.00

Overall, rewards for prosocial community involvement were not correlated with monthly substance use and failed to meet the criterion for an association ( $r=\pm.20$ ).

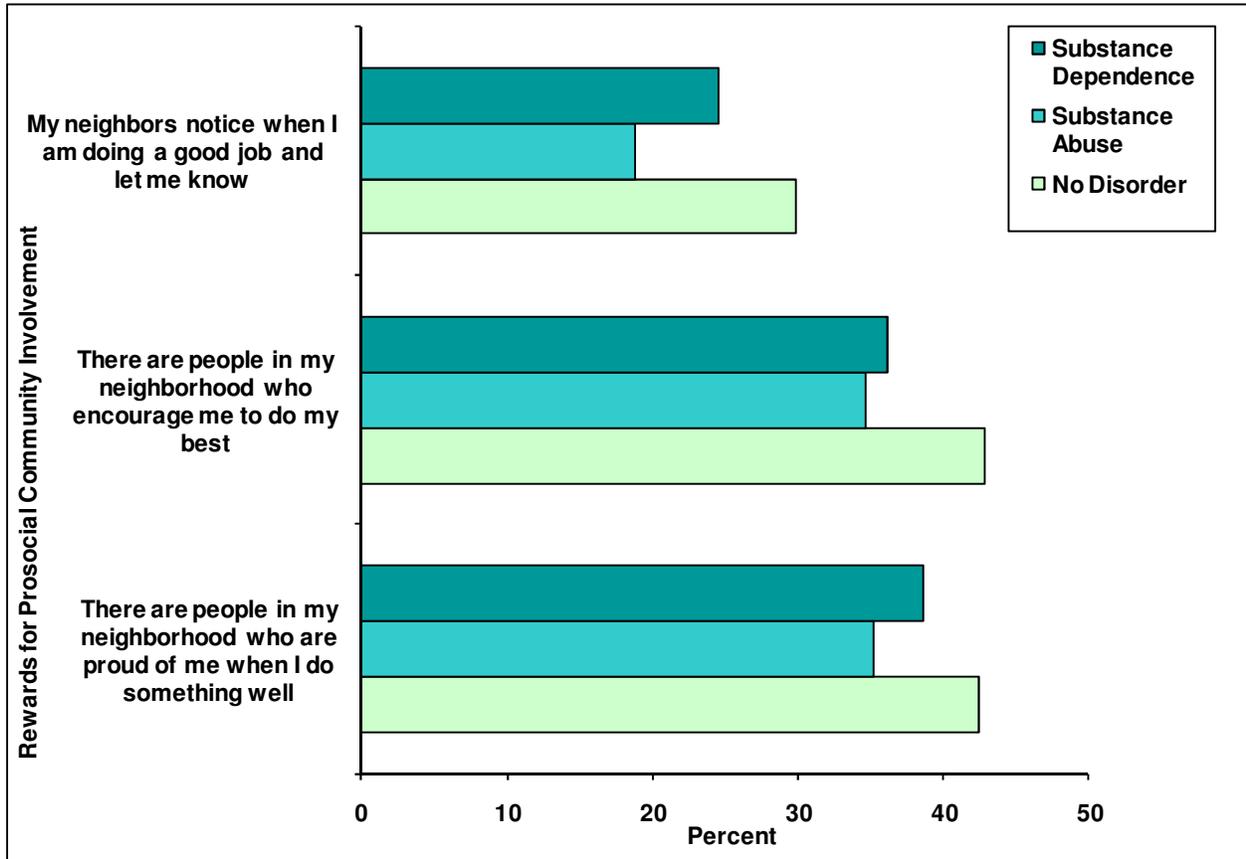


Figure 4e.30. Rewards for Prosocial Community Involvement by Youth Substance Abuse and Dependence, 2007 (Weighted Data)

More students with no substance disorder reported rewards for prosocial community involvement than students with substance dependence or abuse. Additionally, more students with substance dependence reported greater level of acknowledgement for prosocial community involvement than students with substance abuse for neighbors noticing when students do a good job and letting them know (24.5% dependence vs. 18.8% abuse vs. 29.9% none,  $\chi^2=61.5$ ,  $df=2$ ,  $p<.001$ ); neighbors encouraging students to do their best (36.2% dependence vs. 34.7% abuse vs. 42.9% none,  $\chi^2=38.3$ ,  $df=2$ ,  $p<.001$ ); and neighbors telling students they are proud of them when they do something well (38.6% dependence vs. 35.2% abuse vs. 42.5% none,  $\chi^2=23.7$ ,  $df=2$ ,  $p<.001$ ).

## CONCLUSION

---

Findings for the community risk and protective factors were similar to the 2003 Hawai'i Student ATOD survey. Overall, older students reported higher rates of community risk factors (e.g., community disorganization, belief students would *not* get caught by the police if drinking alcohol or smoking marijuana, perceived availability of drugs, and exposure to community ATOD use). For the most part, more males reported the prevalence of community disorganization and perceived laws and norms favorable to drug use, while more females perceived drugs to be readily available. Ethnic differences were found across the community domain. Overall, students with substance abuse or dependence were more likely to have higher prevalence rates of risk factors. Interestingly, both students with substance abuse or dependence and students with no substance disorder were similarly aware of opportunities and rewards for prosocial community involvement.

More notably, approximately 1 in 3 students reported crime or drug selling and fights occurring in their neighborhood. In addition, approximately half of the students reported that they thought youth would be caught by the police if engaging in alcohol or marijuana use and the other half of the students reported they did *not* think youth would be caught when using substances. Intervention and prevention programs that address these risk factors related to community disorganization and laws and norms favorable to drug use would be beneficial.

Another community factor to address in prevention and treatment programs has to do with a student's perceived availability of drugs. Although a large number of students reported that it would probably be impossible to obtain drugs (e.g., cocaine, methamphetamine, hallucinogens, "club drugs," and prescription drugs), a significant amount of students reported that it would be easy to obtain gateway drugs such as cigarettes, alcohol, and marijuana. As a follow-up to perceived availability of drugs, it would

be important to also determine how students are getting access to drugs (e.g., at a party by friends or strangers).

The findings for the Hawai'i Student ATOD survey are consistent with the literature and support the premise that community disorganization, local laws and policies related to adolescent substance use, and adolescents' perceptions about the ease of obtaining drugs have been shown to be associated with adolescent drug use. Based on the findings, it may be helpful for social policy to be developed or amended to change the environment or community in which an adolescent lives. For example, the time period after school ends to early evening has been shown to be a part of the day that students generally engage in and are exposed to risky behaviors such as substance use, delinquent acts, etc., within their community. Developing, implementing, and sustaining age-appropriate and safe after-school programs for students could help to decrease students' perceptions of community disorganization.

After school programs could integrate community members as well as police officers in their programs and services in efforts to address students' perceptions that not all students who partake in substance use will be caught by the police. Perhaps increasing police patrols, especially after school, would also help to address a significant number of students who reported that it would be easy to obtain gateway drugs. With a stronger police presence and more involvement by the community, perceptions of community disorganization would decrease and students could be assured that their community is safe, thereby increasing prosocial community involvement.

## CHAPTER 5: TREATMENT NEEDS AND TREATMENT UTILIZATION

### INTRODUCTION

---

It is not only important to understand the prevalence of adolescent substance use in Hawai'i, but we must also determine how many adolescents need treatment, and if these students actually received any treatment. By first identifying the number of students who met criteria for substance abuse and dependence, we are able to get an estimate of how many adolescents are in need of treatment for substance use. Secondly, it is important to determine, of the adolescents who need treatment, how many actually received treatment for their substance use problems. From this, we can also determine where gaps in treatment needs occur.

Literature on treatment programs for adolescent substance abuse and dependence has been lacking (Galanter, Glickman, & Singer, 2007; Wagner, Brown, Monti, Myers, & Waldron, 1999; Zunz, Ferguson, & Senter, 2005) and research on interventions for youth substance abuse has only begun in recent years and still remains limited (Mark et al 2006; Winters & Leitten, 2007). Similarly, studies on adolescent outpatient treatment programs are also limited, even though they are a widely used type of intervention (Williams & Chang, 2000). The more popular treatment programs tend to be programs broadly based on staff members' experiences, most of whom have histories of drug and alcohol abuse and dependence (Lamb, Greenlick, & McCarty, 1998; Morrall, McCaffrey, & Ridgeway, 2004). However, few of these programs have been evaluated for effectiveness (Morrall et al., 2004). Furthermore, adolescent treatment programs based on adult treatment programs have not been shown to be successful due to the fact that adolescents have different developmental needs than adults (Brannigan, Shackman, Falco, & Millman, 2004). In addition, programs targeting adolescent substance abuse were available at less than half of all treatment agencies (Mark et al., 2006; Burrow-Sanchez, 2006), thereby showing a lack of appropriate and effective treatment services for adolescents.

There are 71 facilities offering substance abuse treatment programs statewide for all residents (Coalition for a Drug-Free Hawai'i, 2006). There are 42 on O'ahu (including three targeting military personnel), nine on Kaua'i, eight on the Big Island, seven on Maui, four on Moloka'i, and one on Lana'i. Most programs on O'ahu and Maui offer services statewide, regardless of island of residency. Of all the facilities, 25 (35%) offer treatment to adults; 18 offer both adult and adolescent treatment, while seven focus only on adolescents (ADAD, 2009).

There is also a lack of research on treatment programs in schools and of those that have been evaluated, few have been found to be effective. This is partly because some school-based programs separate students in treatment from the rest of the students, relying less on student motivation for treatment, in comparison to an outpatient setting whereby students need to be active participants in their treatment plan. Students in such settings report little effect on substance use after the program is completed (RMC Research Corporation, 2001). Although school-based treatment programs have increased in popularity over the past few years (Wagner et al., 2004), only in recent years has there been an increase in research evaluating these programs (Winters & Leitten, 2007).

Historically, prevention programs, not treatment programs, have been the focus of efforts to curb drug use (Zunz et al., 2005). In Hawai'i, there are seven treatment agencies offering school-based adolescent treatment programs. They include: Aloha House, Big Island Substance Abuse Council (BISAC), Hale Ho'okupa'a, Hina Mauka Teen Care, Ohana Makamae, The Institute for Family Enrichment (TIFFE), and the YMCA (State of Hawai'i Department of Health, n.d.) To date, there has been one study, funded by ADAD, that evaluated the effectiveness of these programs for middle and high school students in Hawai'i (Goebert Helm, Hiramatsu, & Yee, 2008).

The latest report from the Substance Abuse and Mental Health Administration (SAMHSA, 2008) shows variability in national trends (i.e., prevalence rates) relating to adolescent substance use, abuse, and dependence. Nationally, the percentage of adolescents who met criteria for an alcohol use disorder (within

the past year) remained stable between 2002 (5.9%) and 2007 (5.4%). There was, however, a decrease in past year dependence on or abuse of illicit drugs (marijuana, cocaine, heroin), from 5.6% in 2002 to 4.3% in 2007.

Specialty treatment for abuse or dependence includes treatment at drug or alcohol rehabilitation facilities (outpatient or inpatient), hospitals (inpatient only), and mental health centers (SAMHSA, 2006). Among adolescents who needed treatment for alcohol use in the past year, between 5.9% and 8.1% were treated at specialty facilities and between 8.5% and 11.3% were treated for illegal drug use (SAMHSA, 2008). Although there was a decrease in the past year dependence on or abuse of illicit drugs, the rates for alcohol dependence and abuse remained about the same. Also, the rate for receiving specialty treatment did not change between 2002 and 2007. These numbers show that, although there was a decrease in adolescent illicit drug use and the rates for alcohol abuse did not change, the rates for receiving treatment did not change in the five-year time period.

Of the 2.1 million youth in 2006 who would have met criteria for alcohol and illegal drug abuse and dependence, only 210,000 (10%) received treatment, leaving 1.9 million adolescents (90%) untreated. Despite the obvious need, there is little research on the reasons that prevent adolescents from receiving treatment (Jones et al., 2007).

## TREATMENT NEEDS

---

Analyses were conducted to determine the number of students who met DSM-IV (American Psychiatric Association, 1994) criteria for any substance abuse or dependence by gender, grade level, and ethnicity. For the purposes of this study, abuse and dependence variables were combined such that students who qualified would meet criteria for any substance abuse or dependence as a single variable. In addition, all substances were combined into a single category. Therefore, students who met criteria for abuse or dependence for any substance are identified as individuals in need of treatment. More

information on criteria for adolescent substance abuse and dependence can be found in the DSM-IV (American Psychiatric Association, 1994) discussion of the Methods section (Chapter 2) in this report.

<b>Table 5.1: Diagnosis for Abuse or Dependence of any Substance, Based on DSM-IV Criteria, for Gender, Grade Level, and Ethnicity (weighted percents)</b>					
	<b>No</b>		<b>Yes</b>		<b>Total</b>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>
<b>Overall Total</b>	5,753	92.3	553	7.7	6,306
<b>Gender</b>					
Male	2,478	93.2	210	6.8	2,688
Female	3,023	91.7	316	8.3	3,339
<b>Grade</b>					
6th Grade	1,807	98.4	33	1.6	1,840
8th Grade	1,555	95.2	88	4.8	1,643
10th Grade	1,150	89.5	150	10.5	1,300
12th Grade	1,241	82.2	282	17.8	1,523
<b>Ethnicity</b>					
Japanese	778	94.6	49	5.4	827
Caucasian	1,040	88.5	153	11.5	1,193
Filipino	1,451	95.3	89	4.7	1,540
Native Hawaiian	999	88.9	132	11.1	1,131
Other Asian	426	96.4	17	3.6	443
Other Pacific Islander	481	93.0	39	7.0	520
2 or more ethnicities	129	86.8	20	13.2	149
Other	346	88.9	49	11.1	395

Table 5.1 provides the percentages of students meeting criteria for substance use disorders overall by gender, grade and ethnicity. For treatment needs by gender, more females (8.3%) than males (6.8%) met criteria for abuse or dependence for any substance use. For treatment needs by grade, 1.6% of 6<sup>th</sup> graders, 4.8% of 8<sup>th</sup> graders, 10.5% of 10<sup>th</sup> graders, and 17.8% of 12<sup>th</sup> graders met criteria for substance abuse or dependence. Consistent with prevalence data, these results show that treatment needs rise as students move through the school system. Treatment needs Statewide based on the weighted percentages of the Hawai'i Student ATOD Survey are estimated to be 192 6<sup>th</sup> graders, 568 8<sup>th</sup> graders, 1,239 10<sup>th</sup> graders, and 1,748 12<sup>th</sup> graders meeting criteria for substance abuse or dependence. For treatment needs by ethnicity, the sample sizes for students who were of Other Asian and two or more ethnicities were too small to be of use in generalizing results for these populations and therefore were not included in the analysis.

Adolescents most likely to meet criteria for substance abuse or dependence were Caucasians (11.5%) and Native Hawaiians (11.1%). Students identified as Other ethnicities (11.1 %) had higher rates as well, but it should be noted that the sample size for Other ethnicities was not as large as that of Caucasians and Native Hawaiians. In addition, 7% of students of Other Pacific Islander ancestry also met criteria. Japanese (5.4%) and Filipino (4.7%) students had the lowest rates of needing treatment for substance use.

## TREATMENT UTILIZATION

---

To determine whether or not students received the proper treatment for substance abuse or dependence, students were asked the following questions: *In the past 12 months, have you EVER: a) received help for alcohol or other drug use from a school program or at school?, b) received help for alcohol and other drug use from some place other than school?, c) thought you should get help for your alcohol or drug use, but didn't?, d) received help for cigarette smoking from a school program or at school?, e) received help for cigarette smoking from some place other than school?, and f) thought you should get help for your cigarette smoking, but didn't?* Possible response choices were *No*, *Yes*, and *Doesn't Apply to Me*. The answers to these questions were then cross-referenced with the answers to the following question: *Have you ever used alcohol, tobacco (cigarettes), or other drugs in the past 12 months?* Possible response choices were *Yes* and *No*. This was done in order to see the relationship between adolescent substance use in the past 12 months and whether or not the students who reported substance use received treatment or thought they needed treatment for their substance use problems. For instance, students who reported substance use in the past 12 months and who also thought that treatment did not apply to them represent a potential gap in treatment services.

Students who met criteria for substance abuse or dependence but who either did not get treatment or felt they did not need treatment may not have gotten help for their substance use problems. Table 5.2 provides data on treatment utilization and substance use in the 12 months prior to this study. *Did not use substances* and *Used substances* refer to whether or not students reported use of alcohol, tobacco,

and other drugs in the past 12 months. Along the left column under gender, grade, and ethnicity, *No*, *Yes*, and *Doesn't apply to me* refer to the number of students who reported ever receiving treatment for alcohol or other drug use.

<b>Table 5.2: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Alcohol or Other Drug Use from a School Program or at School (percentages are from weighted data)</b>			
<b>Received Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Gender</b>	<i>n</i>	%	<i>n</i>
<b>Male</b>			
No	310	29.6	1,003
Yes	48	26.5	153
Doesn't apply to me	103	12.5	729
<b>Female</b>			
No	793	30.2	2,405
No	570	42.3	1,258
Yes	67	36.4	177
Doesn't apply to me	156	14.2	970
<b>Grade</b>			
<b>6th grade</b>			
No	75	11.0	644
Yes	13	7.2	141
Doesn't apply to me	14	2.8	450
<b>8th Grade</b>			
No	135	24.2	545
Yes	44	41.7	104
Doesn't apply to me	39	6.2	485
<b>Received Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Grade</b>	<i>n</i>	%	<i>n</i>
<b>10th Grade</b>			
No	248	52.2	470
Yes	21	50.6	39
Doesn't apply to me	73	17.7	402
<b>12th Grade</b>			
No	645	53.1	1,190
No	466	66.5	703
Yes	42	68.6	61
Doesn't apply to me	137	30.8	426

**Table 5.2: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Alcohol or Other Drug Use from a School Program or at School (percentages are from weighted data), continued**

<b>Ethnicity</b>			
Japanese			
No	120	34.3	330
Yes	6	16.8	30
Doesn't apply to me	32	10.6	262
Caucasian			
No	237	48.7	479
Yes	30	56.2	51
Doesn't apply to me	62	14.3	373
Filipino			
No	177	31.8	529
Yes	23	25.1	86
Doesn't apply to me	66	13.8	413
Native Hawaiian			
No	207	43.7	465
Yes	25	31.9	78
Doesn't apply to me	49	16.7	285
Other Asian			
No	33	22.1	130
Yes	1	3.5	19
Doesn't apply to me	15	8.6	139
Other Pacific Islander			
No	55	25.9	191
Yes	13	29.0	36
Doesn't apply to me	18	11.9	133
2 or more ethnicities			
No	21	34.3	62
Yes	5	32.3	10
Doesn't apply to me	4	12.9	35
Other			
No	60	40.4	138
Yes	17	57.5	31
Doesn't apply to me	15	15.3	98

<b>Table 5.3: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Alcohol or Other Drug Use from a Facility Other Than School (percentages are from weighted data)</b>			
<b>Received Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Gender</b>	<i>n</i>	%	<i>n</i>
<b>Male</b>			
No	314	29.4	1,024
Yes	44	30.2	119
Doesn't apply to me	102	12.2	733
<b>Female</b>			
No	563	40.8	1,286
Yes	66	46.2	133
Doesn't apply to me	162	14.8	980
<b>Grade</b>			
<b>6th grade</b>			
No	74	10.6	677
Yes	10	7.0	94
Doesn't apply to me	17	3.3	455
<b>8th Grade</b>			
No	138	24.1	563
Yes	38	47.9	76
Doesn't apply to me	39	6.5	488
<b>10th Grade</b>			
No	243	51.3	467
Yes	25	62.2	40
Doesn't apply to me	74	17.9	401
<b>12th Grade</b>			
No	463	66.2	702
Yes	44	75.8	56
Doesn't apply to me	138	30.8	432
<b>Ethnicity</b>			
<b>Japanese</b>			
No	115	32.4	333
Yes	11	37.6	25
Doesn't apply to me	32	10.7	263
<b>Caucasian</b>			
No	235	48.1	478
Yes	30	68.4	43
Doesn't apply to me	63	14.3	379
<b>Filipino</b>			
No	179	30.9	555
Yes	20	33.7	54
Doesn't apply to me	66	13.7	414

**Table 5.3: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Alcohol or Other Drug Use from a Facility Other Than School (percentages are from weighted data), continued**

Received Treatment?	Used Substances		Total
	<i>n</i>	%	
<b>Ethnicity</b>			
Native Hawaiian			
No	203	43.5	465
Yes	28	34.2	70
Doesn't apply to me	49	17.1	286
Other Asian			
No	33	21.2	138
Yes	0	0	12
Doesn't apply to me	16	9.3	138
Other Pacific Islander			
No	54	24.6	192
Yes	13	38.3	31
Doesn't apply to me	18	11.6	134
2 or more ethnicities			
No	21	30.6	62
Yes	4	44.1	8
Doesn't apply to me	5	17.0	37
Other			
No	64	41.9	147
Yes	11	52.0	20
Doesn't apply to me	17	17.8	99

**Table 5.4: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Thought They Needed Treatment for Alcohol and Other Drug Use But Did Not Receive Treatment (percentages are from weighted data)**

Received Treatment?	Used Substances		Total
	<i>n</i>	%	
<b>Gender</b>			
Male			
No	315	29.0	1,018
Yes	38	39.8	88
Doesn't apply to me	107	12.6	770
Female			
No	560	41.1	1,263
Yes	65	59.2	109
Doesn't apply to me	168	14.7	1,027
<b>Grade</b>			
6th grade			
No	74	10.6	663
Yes	10	14.6	61
Doesn't apply to me	17	2.8	500
8th Grade			
No	144	24.3	565
Yes	30	50.9	61
Doesn't apply to me	43	7.3	504
10th Grade			
No	239	51.6	459
Yes	28	73.8	37
Doesn't apply to me	75	17.6	412
12th Grade			
No	459	65.6	694
Yes	42	82.4	51
Doesn't apply to me	144	31.9	445
<b>Ethnicity</b>			
Japanese			
No	114	32.9	322
Yes	11	45.1	24
Doesn't apply to me	33	10.5	274
Caucasian			
No	242	48.7	483
Yes	23	62.2	35
Doesn't apply to me	64	14.9	383
Filipino			
No	173	30.3	540
Yes	24	48.8	51
Doesn't apply to me	68	13.6	432

**Table 5.4: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Thought They Needed Treatment for Alcohol and Other Drug Use But Did Not Receive Treatment (percentages are from weighted data), continued**

Received Treatment?	Used Substances		Total
	<i>n</i>	%	<i>n</i>
<b>Ethnicity</b>			
Native Hawaiian			
No	199	42.6	461
Yes	28	46.8	53
Doesn't apply to me	54	17.8	308
Other Asian			
No	31	20.0	135
Yes	1	8.7	9
Doesn't apply to me	17	9.6	144
Other Pacific Islander			
No	55	25.5	187
Yes	11	51.7	20
Doesn't apply to me	19	11.5	149
<b>Ethnicity</b>			
2 or more ethnicities			
No	24	34.8	65
Yes	2	52.9	4
Doesn't apply to me	4	52.9	38
Other			
No	63	39.9	148
Yes	10	82.7	12
Doesn't apply to me	19	52.9	107

**Table 5.5: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Cigarette Use from a School Program or at School (percentages are from weighted data)**

Received Treatment?	Used Substances		Total
	<i>n</i>	%	
<b>Gender</b>			
Male			
No	298	28.9	979
Yes	26	20.2	107
Doesn't apply to me	136	15.4	789
Female			
No	545	41.3	1,231
Yes	33	28.0	113
Doesn't apply to me	214	18.3	1,054
<b>Grade</b>			
6th grade			
No	75	11.0	637
Yes	10	7.4	111
Doesn't apply to me	16	3.1	478
8th Grade			
No	140	24.3	552
Yes	20	33.0	66
Doesn't apply to me	56	9.5	509
10th Grade			
No	232	51.5	446
Yes	14	54.0	26
Doesn't apply to me	96	21.4	435

**Table 5.5: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Cigarette Use from a School Program or at School (percentages are from weighted data), continued**

Received Treatment? Grade	Used Substances		Total
	<i>n</i>	%	<i>n</i>
12th Grade			
No	441	65.4	676
Yes	17	57.3	27
Doesn't apply to me	187	36.9	487
<b>Ethnicity</b>			
Japanese			
No	112	32.8	316
Yes	3	12.7	25
Doesn't apply to me	43	13.9	280
Caucasian			
No	228	47.5	471
Yes	12	53.0	22
Doesn't apply to me	89	19.3	408
Filipino			
No	167	30.7	518
Yes	14	22.3	60
Doesn't apply to me	84	16.6	443
Native Hawaiian			
No	198	42.1	458
Yes	14	25.2	49
Doesn't apply to me	68	22.0	314
Other Asian			
No	31	21.2	125
Yes	1	7.4	19
Doesn't apply to me	17	9.6	144
Other Pacific Islander			
No	56	26.7	185
Yes	9	29.9	28
Doesn't apply to me	20	11.5	144
2 or more ethnicities			
No	19	29.5	60
Yes	2	18.8	6
Doesn't apply to me	9	23.5	41
Other			
No	62	43.1	139
Yes	6	30.8	18
Doesn't apply to me	24	21.3	110

**Table 5.6: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Cigarette Use from a Facility Other Than School  
(percentages are from weighted data)**

Received Treatment?	Used Substances		Total <i>n</i>
	<i>n</i>	%	
<b>Gender</b>			
Male			
No	302	28.4	1,004
Yes	19	20.7	81
Doesn't apply to me	139	15.6	791
Female			
No	544	40.0	1,260
Yes	36	43.8	85
Doesn't apply to me	213	18.0	1,051
<b>Grade</b>			
6th grade			
No	77	10.7	668
Yes	7	9.4	78
Doesn't apply to me	17	2.9	477
8th Grade			
No	142	24.3	571
Yes	18	38.2	49
Doesn't apply to me	57	9.4	509
10th Grade			
No	232	50.7	452
Yes	14	77.5	19
Doesn't apply to me	96	21.2	437
12th Grade			
No	440	64.9	677
Yes	18	64.2	28
Doesn't apply to me	187	37.1	484
<b>Ethnicity</b>			
Japanese			
No	108	31.4	320
Yes	6	31.5	17
Doesn't apply to me	44	14.0	281
Caucasian			
No	224	46.7	469
Yes	16	64.2	27
Doesn't apply to me	89	19.4	405
Filipino			
No	170	29.6	540
Yes	9	27.6	38
Doesn't apply to me	86	16.7	446

**Table 5.6: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Received Treatment for Cigarette Use from a Facility Other Than School (percentages are from weighted data), continued**

Received Treatment?	Used Substances		Total
	<i>n</i>	%	<i>n</i>
<b>Ethnicity</b>			
Native Hawaiian			
No	204	42.2	473
Yes	9	21.6	36
Doesn't apply to me	68	21.8	312
Other Asian			
No	32	20.9	133
Yes	1	4.8	14
Doesn't apply to me	16	9.1	142
Other Pacific Islander			
No	54	25.3	185
Yes	10	39.3	25
Doesn't apply to me	21	12.0	146
2 or more ethnicities			
No	20	30.4	61
Yes	2	42.1	5
Doesn't apply to me	8	20.5	40
Other			
No	64	42.2	147
Yes	4	30.2	10
Doesn't apply to me	24	21.4	110

<b>Table 5.7: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Thought They Needed Treatment for Cigarette Use But Did Not Receive Treatment (percentages are from weighted data)</b>			
<b>Needed Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Gender</b>	<i>n</i>	%	<i>n</i>
Male			
No	299	28.5	992
Yes	19	25.8	64
Doesn't apply to me	141	15.3	816
Female			
No	523	40.0	1,212
Yes	54	56.0	96
Doesn't apply to me	216	17.8	1,083

<b>Table 5.7: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Thought They Needed Treatment for Cigarette Use But Did Not Receive Treatment (percentages are from weighted data), continued</b>			
<b>Needed Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Grade</b>	<i>n</i>	%	<i>n</i>
6th grade			
No	74	10.8	653
Yes	9	12.6	57
Doesn't apply to me	18	3.0	509
8th Grade			
No	138	24.6	549
Yes	20	40.6	50
Doesn't apply to me	59	9.5	528
10th Grade			
No	223	49.7	439
Yes	21	82.6	26
Doesn't apply to me	96	21.2	440
12th Grade			
No	424	64.4	659
Yes	32	77.0	40
Doesn't apply to me	189	37.2	489
<b>Ethnicity</b>			
Japanese			
No	107	32.1	308
Yes	8	39.0	19
Doesn't apply to me	43	13.4	292
Caucasian			
No	222	47.1	461
Yes	15	59.6	25
Doesn't apply to me	92	19.7	413
Filipino			
No	164	29.8	524
Yes	15	39.2	41
Doesn't apply to me	86	16.2	455
Native Hawaiian			
No	193	41.5	457
Yes	19	42.9	38
Doesn't apply to me	69	21.4	323
Other Asian			
No	31	20.2	131
Yes	2	17.9	12
Doesn't apply to me	16	8.8	146
Other Pacific Islander			
No	52	25.0	184
Yes	11	58.3	18
Doesn't apply to me	22	12.2	154

<b>Table 5.7: Treatment Utilization and Substance Use in the Past 12 Months Among: Students Who Thought They Needed Treatment for Cigarette Use But Did Not Receive Treatment (percentages are from weighted data), continued</b>			
<b>Needed Treatment?</b>	<b>Used Substances</b>		<b>Total</b>
<b>Ethnicity</b>	<i>n</i>	%	<i>n</i>
2 or more ethnicities			
No	19	29.6	59
Yes	3	57.9	5
Doesn't apply to me	8	20.0	42
Other			
No	56	39.1	136
Yes	9	59.7	14
Doesn't apply to me	25	21.2	115

For treatment utilization by gender, more females than males reported substance use in the past 12 months but did not think treatment applied to them. For example, 14.2% of females who did not feel treatment at school applied to them used substances in the previous year, compared to 12.5% of males (see Table 5.2). More females than males also reported they did not think treatment applied to them with regards to treatment services occurring outside of the school environment.

For treatment utilization by grade, 12<sup>th</sup> graders had the highest rates of students who reported alcohol or other drug use and cigarette use in the past 12 months and did not think treatment applied to them. Of 12<sup>th</sup> graders who felt treatment did not apply to them, 30.8% reported alcohol and other drug use over the previous year (see Table 5.2).

For treatment utilization by ethnic group, Caucasians and Native Hawaiians had the highest rates of students who did not feel they needed treatment for using substances in the past 12 months. Of the students who felt treatment at school did not apply to them, 16.7% of Native Hawaiians and 14.3% of Caucasians reported substance use in the past 12 months (see Table 5.2).

Among students who felt they needed treatment for substance use but did not receive treatment, greater percentages of females, 12<sup>th</sup> graders, Caucasians, and Native Hawaiians who felt treatment did not apply to them reported substance use in the past 12 months (see Table 5.4).

Among students who met criteria for substance abuse or dependence, 27% received treatment for cigarette, alcohol, or other drug use either from a program at school or another program outside of school ( $\chi^2=76.4$ ,  $df=1$ ,  $p<.001$ ) (see Table 5.2). However, there were 25.8% of students who met criteria for substance abuse or dependence who thought they should receive treatment for cigarette, alcohol, or other drug use but did not ( $\chi^2=382.6$ ,  $df=1$ ,  $p<.001$ ) (see Table 5.4). A Statewide estimate of students from grades 6 through 12 meeting criteria for a substance abuse or dependence would be approximately 7276 or 8.8% of 82,681 students (2007-2008 Hawai'i DOE Official Enrollment Count).

Among students who did *not* meet criteria for a substance abuse or dependence, 17.3% received treatment for substance use ( $\chi^2=76.4$ ,  $df=1$ ,  $p<.001$ ) (see Table 5.2) while 8.4% thought they should seek treatment but did not receive treatment ( $\chi^2=382.6$ ,  $df=1$ ,  $p<.001$ ) (see Table 5.5). Overall, 21.3% of students in the Hawai'i Student ATOD Survey reported seeking treatment, regardless of whether or not they met criteria for substance abuse or dependence. A Statewide estimate would be approximately 17,611 students between the 6<sup>th</sup> and 12<sup>th</sup> grades that thought they needed help for some type of substance use problem.

## CONCLUSION

---

Adolescents who were using substances seemed to think they did not require treatment for substance use problems. This represents a gap in the treatment of adolescents who may be dependent upon or are abusing substances.

Females reported slightly higher rates of substance abuse and dependence than males (8.3% vs. 6.8%, respectively). Additionally, older students report higher rates of substance abuse and dependence with rates increasing progressively from 6<sup>th</sup> grade to 12<sup>th</sup> grade (6<sup>th</sup> grade 1.6%, 8<sup>th</sup> grade 4.8%, 10<sup>th</sup> grade

10.5%, and 12<sup>th</sup> grade 17.8%). Given that students need more treatment for substance use as they get older, treatment programs must be targeted toward older adolescents, while prevention programs should be aimed at younger students.

Aside from students of two or more ethnicities, Caucasian (11.5%) and Native Hawaiian (11.1%) students reported the highest rates of substance abuse and dependence. It is hypothesized that for Caucasians, efforts should perhaps reflect the fact that Caucasian students in Hawai'i are not in the majority, and may therefore experience difficulties assimilating and turn to substance use as a coping mechanism. Treatment efforts for Native Hawaiian students will have to take into consideration cultural factors, including issues of displacement and loss of culture.

Results also showed that of the students who met criteria for substance abuse or dependence, the vast majority (73.0%) did not receive treatment. Additionally, 8.4% of students did not meet criteria for substance abuse or dependence but thought they needed help with cigarettes, alcohol, or drug use did not receive treatment.

Further research is needed to determine the reasons why adolescents do not seek treatment for their substance abuse problems. It is critical that prevention efforts be aimed at younger adolescents to reinforce negative attitudes toward substance use so that as they get older they will be more aware of the dangers associated with substance use and therefore lessen the need to treat older adolescents.

## CHAPTER 6: CONCLUSION

### ONSET AND PREVALENCE

---

The 2007-2008 Hawai'i Student ATOD Study findings provide important and useful information on youth substance use in Hawai'i. Given the recognition of youth substance use as an ongoing public health issue, it is important to note that based on the Hawai'i Student ATOD Study findings, the “gateway drugs” (cigarettes, alcohol, and marijuana) were the substances that students were more likely to use prior to the age of 14, regardless of gender. Due to the literature showing an association between early onset of substance use and later alcohol and drug problems, it is extremely important for prevention efforts to focus on students younger than 14 years of age.

Data on prescription drug use for the state of Hawai'i have not been available until the 2007-2008 Hawai'i Student ATOD Study as it has not been widely reported in the past. Given that national rates for prescription drug use has escalated, it will be important to continue to monitor the use of prescription drugs for youth in the state of Hawai'i. This study found that the rate of prescription drug use more than doubled for 12<sup>th</sup> graders in comparison to the rates reported for 10<sup>th</sup> graders.

The highest prevalence rates of substance use were reported for both lifetime and 30-day use of alcohol, followed by cigarettes, and marijuana.

### RISK AND PROTECTIVE FACTORS

---

The association between risk and protective factors and adolescent substance use is important to understand. Several risk and protective factors seemed to stand out with regards to the association with youth substance use. More specifically, early initiation of binge drinking, peer substance use, peer approval of substances, family exposure to substances, unclear rules related to substance use, and perceived availability of substances were found to be important factors associated with youth substance abuse and

dependence. With regards to early initiation of binge drinking, there is more than a three-fold increase in the number of students who report binge drinking from 6<sup>th</sup> to 8<sup>th</sup> grade. Based on this finding, it is extremely important that prevention and intervention programs address binge drinking as early as elementary school.

The largest differences reported by students within the factor of peer substance use had to do with alcohol and marijuana use. For alcohol, rates of alcohol use more than doubled from 6<sup>th</sup> to 8<sup>th</sup> grade, with 1 out of every 2 students in the 8<sup>th</sup> grade reporting that their friends used alcohol. There were similar increases in peer marijuana use between 6<sup>th</sup> and 8<sup>th</sup> graders. Students who met criteria for substance abuse or dependence also reported higher rates of peer approval of cigarettes and illicit drug use. Again, these findings reiterate the importance of having age appropriate prevention programs that address use and approval of substance use by peers.

Significant findings with regards to the family domain were also found. Students who met criteria for substance dependence reported higher rates of family exposure to cigarettes, alcohol, and other drugs as well as unclear family rules related to substance use in comparison to students who met criteria for substance abuse or had no substance use disorder. These findings indicate that the family domain is an important factor to address when developing prevention and intervention programs for youth.

No single school factor accounted for a strong association with adolescent substance use. However, several risk and protective factors such as lack of school commitment and school opportunities for positive involvement varied significantly by grade. Protective factors that buffer risk at an earlier age, such as school rewards for positive involvement (e.g., teacher praise), tend to decrease for older students. It would be important to offset this loss of protection by mitigating other risk factors or enhancing other protective factors for older students (e.g., opportunities for sports or club activities) particularly during the transitions between elementary, middle, and high school. Given that prevention and intervention approaches are

often school-based, it is critical to consider the risk and protective context for designing, implementing, and evaluating prevention and intervention programs for effectiveness and outcomes.

Perceived availability of drugs was also an important factor associated with youth substance use. Students reported that it would be easier to obtain the “gateway drugs” of cigarettes, alcohol, and marijuana, in comparison to illicit drugs (e.g., methamphetamine, hallucinogens, and ecstasy); with significantly more 10<sup>th</sup> and 12<sup>th</sup> grade students stating that it would be easy for them to obtain cigarettes or alcohol if they wanted some. Four out of five students who stated it would be easy for them to get cigarettes, alcohol, or marijuana met criteria for substance dependence and substance abuse. This finding emphasizes the importance of integrating community members and law enforcement to assist with age-appropriate after school programs that would be beneficial in deterring access to substances in the community and aide in developing more prosocial community involvement by students.

It is important to note that influence of a given risk or protective factor can vary with the type of substance, a youth's stage of development, and a youth's gender or ethnic group. Additionally, factors significant for earlier stages of use and initiation (such as "trying" marijuana) may differ from those related to the transition to dependence (such as alcoholism). This is supported by the data which suggests risk and protective factors play a stronger role in substance abuse and dependence than in substance use. Social, situational, and environmental factors usually contribute more to initial or low-level substance use, while biological, psychological, and psychiatric factors contribute more to heavy use (Office of Technology Assessment, 1994).

It is extremely critical to understand the impact risk (e.g., community disorganization, peer substance use, etc.) and protective factors (e.g., peer disapproval of substance use, positive school rewards, etc.) have upon adolescent substance use. Providing a framework for prevention and treatment needs within a risk and protective model can help programs and agencies target specific behaviors that have been shown to be associated with adolescent substance use. Based on the study findings, it is suggested that the

most effective prevention and intervention projects focus on risk and protective factors within multiple domains: individual, peer, family, school and community.

## TREATMENT

---

Overall, nearly one in 13 students met criteria for substance abuse or dependence. The rates of students meeting criteria for a substance abuse or dependence diagnosis were highest for females and 12<sup>th</sup> graders. Rates for 12<sup>th</sup> grade students in Hawai'i that met criteria for substance abuse or dependence were much higher than national rates, which are approximately 10% of the adolescent population. The high percentage of students meeting criteria for substance abuse or dependence may be due to the DSM-IV being validated on adults and not accurately diagnosing or categorizing adolescent substance use. If diagnostic accuracy results in overinflated numbers of adolescents with substance use or dependence, the proportion of unmet treatment needs may also be overestimated. Even accounting for possible overinflation, the numbers still represent students who are in need of assistance for substance use problems. On the other hand, if the rate of 17.8% of 12<sup>th</sup> graders accurately represents the need for treatment of older adolescents in Hawaii, intervention and treatment needs are not adequately addressing the gap.

This disparity is also reflected in the 25.8% of students who met criteria for a substance use diagnosis and thought they needed treatment but did not receive it. An additional 8.4% of students who did not meet criteria for a diagnosis also indicated they needed help for their substance use problems but did not receive any assistance. Clearly, there is a significant group of youth who are still in need of treatment services that have not been reached.

There are several recommendations for approaching the problem of adolescent substance use. Overall, because cost-savings realized from effective prevention will reduce the burden of unmet treatment needs over time, increasing prevention efforts, particularly at younger ages with programs which are age

appropriate and that account for developmental changes that adolescents experience will be important. Ideally, increasing capacity for treatment needs for adolescents that are currently underserved or may have greater need would also serve to lessen the gap. However, given limited resources and existing capacity, it may be more strategic to develop or maintain the most effective programs for evidence-based treatment and enhance existing programs and services with science-based approaches including knowledge gained from research such as risk and protective factors. If integrated with ongoing evaluation of prevention, intervention, and treatment programs targeted for youth, outcomes for reducing and preventing adolescent substance use can be achieved more effectively.

## REFERENCES

- Agrawal, A., Neale, M. C., Prescott, C. A., & Kendler, K. (2004). A twin study of early cannabis use and subsequent use and abuse/dependence of other illicit drugs. *Psychological Medicine, 34*, 1227-1237.
- Akeo, N. P., Bunya, E. S., Burgess, K. N., Eckart, D. R., Evensen, S. L., et al. (2008). Hui Mālama o ke Kai: mobilizing to prevent youth violence and substance use with passion, common goals, and culture. *American Journal of Preventative Medicine, 34*(3S), S56-S71.
- Allison, K. W., Crawford, I., Leone, P. E., Trickett, E., Perez-Febles, A., Burton, L. M., & Le Blanc, R. (1999). Adolescent substance use: preliminary examinations of school and neighborhood context. *American Journal of Community Psychology, 27*(2), 111-141.
- Alter, R. J., Lohrmann, D. K., & Greene, R. (2006). Substitution of marijuana for alcohol: the role of perceived access and harm. *Journal of Drug Education, 36*(4), 335-355.
- Alexander, E. (2000). Famous fried eggs students debate effectiveness, accuracy of well-known anti-drug commercial. Retrieved June 8, 2009, from <http://www.cnn.com/fyi/interactive/news/brain/brain.on.drugs.html>
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed.). Washington, DC: Author.
- Anderson, K. G., Ramo, D. E., Schulte, M. T., Cummins, K., & Brown, S. A. (2007). Substance use treatment outcomes for youth: integrating personal and environmental predictors. *Drug and Alcohol Dependence, 88*, 42-48.
- Andrews, J. A., Tildesley, E., Hops, H., Duncan, S. C., & Severson, H. H. (2003). Elementary school age children's future intentions and use of substances. *Journal of Clinical Child and Adolescent Psychology, 32*(4), 556-567.
- Anthony, J. C., & Petronis, K. R. (1995). Early-onset drug use and risk of later drug problems. *Drug and Alcohol Dependence, 40*, 9-15.
- Arkes, J. (2007). Does the economy affect teenage substance use? *Health Economics, 16*, 19-36.
- Arthur, M. W., Briney, J. S., Hawkins, J. D., Abbott, R. D., Brooke-Weiss, B. L., & Catalano, R. F. (2007). Measuring risk and protection in communities using the Communities That Care Youth Survey. *Evaluation and Program Planning, 30*, 197-211.
- Arthur, M. W., Hawkins, J. D., Pollard, J. A., Catalano, R. F., & Baglioni, A. J. Jr. (2002). Measuring risk and protective factors for use, delinquency, and other adolescent problem behaviors: the Communities That Care Youth Survey. *Evaluation Review, 26*(6), 575-601.
- Ary, D. V., Duncan, T.E., Duncan, S. C., & Hops, H. (1999). Adolescent problem behavior: the influence of parents and peers. *Behavior Research and Therapy, 37*, 217-230.
- Austin, A. A. (2004). Alcohol, tobacco, other drug use, and violent behavior among Native Hawaiians: ethnic pride and resilience. *Substance Use & Misuse, 39*(5), 721-746.

- Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1998). Explaining recent increases in students' marijuana use: impacts of perceived risks and disapproval, 1976 through 1996. *American Journal of Public Health, 88*(6), 887-892.
- Bahr, S. J., Marcos, S. C., & Maughan, S. L. (1995). Family, educational and peer influences on the alcohol use of female and male adolescents. *Journal of Studies on Alcohol, 56*, 457-469.
- Barkin, S. L., Smith, K. S., & DuRant, R. H. (2002). Social skills and attitudes associated with substance use behaviors among young adolescents. *Journal of Adolescent Health, 30*, 448-454.
- Bauman, K.E., & Ennett, S. T. (1996). On the importance of peer influence for adolescent drug use: commonly neglected considerations. *Addiction, 91*(2), 185-198.
- Baumrind, D. (1987). Familial antecedents of adolescent drug use: A developmental perspective. National Institute on Drug Abuse Monograph 56. (DHHS Publication No. ADM 87-1335). Washington, DC: U. S. Government Printing Office.
- Barnes, G. M., & Farrell, M. P. (1992). Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviors. *Journal of Marriage and the Family, 54*, 763-776.
- Beal, A. C., Ausiello, J., & Perrin J. M. (2001). Social influences on health-risk behaviors among minority middle school students. *Journal of Adolescent Health, 28*, 474-480.
- Becker, S. J., & Curry, J. F. (2008). Outpatient interventions for adolescent substance abuse: a quality of evidence review. *Journal of Consulting and Clinical Psychology, 76*(4), 531-543.
- Bersamin, M., Paschall, M. J., & Flewelling, R. L. (2005). Ethic differences in relationships between risk factors and adolescent binge drinking: A national study. *Prevention Science, 6*(2), 127-137.
- Bergeson, T., Kelly, T. J., Riggers, M. L. (2001). *The prevention and intervention services program's link to academic improvement*. Olympia, WA: Office of Superintendent of Public Instruction.
- Best, D. W., & Barrie, A. (1997). Impact of illicit substance activity on young people. *Journal of Substance Use, 2*(4), 197-202.
- Beyers, J. M., Toumbourou, J. W., Catalano, R. F., Arthur, M. W., & Hawkins, J. D. (2004). A cross-national comparison of risk and protective factors for adolescent substance use: the United States and Australia. *Journal of Adolescent Health, 35*(1), 3-16.
- Biederman, J., Monuteaux, M. C., Mick, E., Wilens, T. E., Fontanella, J. A., Poetzl, K. M., et al. (2005). Is cigarette smoking a gateway to alcohol and illicit drug use disorders? A study of youths with and without attention deficit hyperactivity disorder. *Biological Psychiatry, 59*, 258-264.
- Blaze-Temple, D., & Lo, S. K. (1992). Stages of drug use: a community survey of Perth teenagers. *British Journal of Addiction, 87*, 215-225.
- Bonomo, Y. A., Bowes, G., Coffey, C., Carlin, J. B., & Patton, G. C. (2004). Teenage drinking and the onset of alcohol dependence: a cohort study over seven years. *Society for the Study of Addiction, 99*, 1520-1528.

- Brannigan, R., Schackman, B R., Falco, M., & Millman, R.B. (2004). The quality of highly regarded adolescent substance abuse treatment programs. *Archives of Pediatrics and Adolescent Medicine, 158*, 904-909.
- Brody, G. H., Kogan, S. M., Chen, Y.-F., & Murry, V. M. (2008). Long-term effects of the Strong African American Families program on youths' conduct problems. *Journal of Adolescent Health, 43*, 474-481.
- Brook D. W., Brook J. S. (1992). Family processes associated with alcohol and drug abuse. In Kaufman, E., Kaufman, P., (Eds.), *Family Therapy of Drug and Alcohol Abuse, 2nd ed.* Needham Heights (pp.15-33). MA: Allyn & Bacon.
- Bryant, A. L., Schulenberg, J. E., O'Malley, P. M., Bachman, J. G., & Johnston, L.D. (2003). How academic achievement, attitudes, and behaviors relate to the course of substance use during adolescence: a 6-year, multiwave national longitudinal study. *Journal of Research on Adolescence, 13*(3), 361-397.
- Burlew, A. K., Feaster, D., Brecht, M.-L., & Hubbard, R. (2009). Measurement and data analysis in research addressing health disparities in substance abuse. *Journal of Substance Abuse Treatment, 36*, 25-43.
- Burrow-Sanchez, J. J. (2006). Understanding adolescent substance abuse: prevalence, risk factors, and clinical implications. *Journal of Counseling & Development, 84*, 283-290.
- Byrd, C. M., & Chavous, T. M. (2009). Racial identity and academic achievement in the neighborhood context: a multilevel analysis. *Journal of Youth and Adolescence, 38*, 544-559.
- Chae, D. H., Takeuchi, D. T., Barbeau, E. M., Bennett, G. G., Lindsey, J., & Krieger, N. (2008). Unfair treatment, racial/ethnic discrimination, ethnic identification, and smoking among Asian Americans in the National Latino and Asian American Study. *American Journal of Public Health, 98*(3), 485-492.
- Chassin, L., & Handley, E. D. (2006). Parents and families as contexts for development of substance use and substance use disorders. *Psychology of Addictive Behaviors, 20*(2), 135-137.
- Chen, C.-Y., Storr, C. L., & Anthony, J. C. (2009). Early-onset drug use and risk for drug dependence problems. *Addictive Behaviors, 34*, 319-322.
- Chen, K., & Kandel, D. B. (1995). The Natural History of Drug Use from Adolescence to the Mid-Thirties in a General Population Sample. *American Journal of Public Health, 85*(1), 41-47.
- Choi, Y. (2008). Diversity within: subgroup differences of youth problem behaviors among Asian Pacific Islander American adolescents. *Journal of Community Psychology, 36*(3), 352-370.
- Choi, Y., Harachi, T. W., & Catalano, R. F. (2006). Neighborhoods, family, substance use: comparisons of the relations across racial and ethnic groups. *Social Service Review, 80*(4), 675-704.
- Christiansen, B. A., Smith, G. T., Roehling, P. V., & Goldman, M. S. (1989). Using alcohol expectancies to predict adolescent drinking behavior after one year. *Journal of Consulting and Clinical Psychology, 57*(1), 93-99.
- Chuang, Y.-C., Ennett, S. T., Bauman, K. E., & Foshee, V. A. (2005). Neighborhood influences on adolescent cigarette and alcohol use: mediating effects through parent and peer behaviors. *Journal of Health and Social Behavior, 46*(2), 187-204.
- Cleveland, M. J., Feinberg, M. E., Bontempo, D. E., & Greenberg, M. T. (2008). The role of risk and protective factors in substance use across adolescence. *Journal of Adolescent Health, 43*, 157-164.

- Coalition for a Drug-Free Hawai'i, (2006). *State of Hawai'i Department of Health Alcohol and Drug Abuse Division, Directory of Substance Abuse Treatment Programs in Hawai'i 2006*. Retrieved June 6, 2008 from <http://www.drugfreehawaii.org/use-files/pdf/treatmentdirectory06.pdf>.
- Coley, R. L., Votruba-Drzal, E., & Schindler, H. S. (2008). Trajectories of parenting processes and adolescent substance use: reciprocal effects. *Journal of Abnormal Child Psychology*, *36*, 613-625.
- Collins, R. L., Ellickson, P. L., Bell, R. M. (1999). Simultaneous polydrug use among teens: prevalence and predictors. *Journal of Substance Abuse*, *10*(3), 233-253.
- Corbin, W. R., Vaughan, E. L., & Fromme, K. (2008). Ethnic differences and the closing of the sex gap in alcohol use among college-bound students. *Psychology of Addictive Behaviors*, *22*(2), 240-248.
- Crawford, L., & Novak, K. B. (2008). Parent-child relations and peer associations as mediators of the family structure – substance use relationship. *Journal of Family Issues*, *29*(2), 155-184.
- Crum, R. M., Ensminger, M.E., Ro, M. J., & McCord, J. (1998). The association of educational achievement and school dropout with risk of alcoholism: a twenty-five-year prospective study of inner-city children. *Journal of Studies on Alcohol*, *59*, 318-326.
- D'Amico, E. J., & Fromme, K. (1997). Health Risk Behaviors of Adolescent and Young Adult Siblings. *Health Psychology*, *16*(5), 426-432.
- D'Amico, E. J., & McCarthy, D. M. (2006). Escalation and initiation of younger adolescents' substance use: the impact of perceived peer use. *Journal of Adolescent Health*, *39*, 481-487.
- Dansec, E. R., Kingery, P. M., & Coggeshall, M. B. (1999). Perceived risk of harm from marijuana use among youth in the USA. *School Psychology International*, *20*, 39-56.
- Department of Business, Economic Development & Tourism, State of Hawai'i (ND). *Hawai'i Census 2000*. Retrieved June 15, 2009, from <http://hawaii.gov/dbedt/info/census/Folder.2005-10-13.2927/>.
- Department of Education, State of Hawai'i (ND). *Hawai'i Public High Schools*. Retrieved July 6, 2009, from <http://doe.k12.hi.us/>.
- Department of Education, State of Hawai'i (2007, September 20). *Official 2007-2008 enrollment: charter schools gain new conversion school*. Retrieved June 15, 2009, from <http://lilinode.k12.hi.us/STATE/COMM/DOEPRESS.NSF/a1d7af052e94dd120a2561f7000a037c/a3d4d3f562c248900a25735d00084e49?OpenDocument>.
- DeWit, D. J., Adlaf, E. M., Offord, D. R., & Ogborne, A. C. (2000). Age at first alcohol use: a risk factor for the development of alcohol disorders. *American Journal of Psychiatry*, *157*(5), 745-750.
- Dick, D. M., Pagan, J. L., Holliday, C., Viken, R., Pulkkinen, L., Kaprio, J., & Rose, R. J. (2007). Gender differences in friends' influences on adolescent drinking: a genetic epidemiological study. *Alcoholism: Clinical and Experimental Research*, *31*(12), 2012-2019.
- Dick, D. M., Viken, R., Purcell, S., Kaprio, J., Pulkkinen, L., et al. (2007). Parental monitoring moderates the importance of genetic and environmental influences on adolescent smoking. *Journal of Abnormal Psychology*, *116*(1), 213-218.

- Dobkin, P. L., Tremblay, R. E., Mâsse, L. C. & Vitaro, F. (1995). Individual and peer characteristics in predicting boys' early onset of substance abuse: a seven-year longitudinal study, *Child Development*, 66, 1198-1214.
- Donovan, J. (2004). Adolescent alcohol initiation: a review of psychosocial risk factors. *Journal of Adolescent Health*, 35(6), 529.e7-529.e18.
- Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. *Journal of Counseling and Clinical Psychology*, 53(6), 890-904.
- Dornbusch, S. M., Erickson, K. G., Laird, J., & Wong, C. A. (2001). The relation of family and school attachment to adolescent deviance in diverse groups and communities. *Journal of Adolescent Research*, 16(4), 396-422.
- Dornelas, E., Patten, C., Fischer, E., Decker, P. A., Offord, K., Barbagallo, J., et al. (2005). Ethnic variation in socioenvironmental factors that influence adolescent smoking. *Journal of Adolescent Health*, 36, 170-177.
- Dowden, C., & Latimer, J. (2006). Providing effective substance abuse treatment for young-offender populations: what works! *Child and Adolescent Psychiatric Clinics of North America*, 15, 517-537.
- Dryfoos, J.G. (1990). *Adolescents at risk: prevalence and prevention*. New York: Oxford University Press.
- Eisenberg, M. E., Neumark-Sztainer, D., Fulkerson, J. A., & Story, M. (2008). Family meals and substance use: is there a long-term protective association? *Journal of Adolescent Health* 43, 151-156.
- Ellickson, P. L., Bird, C. E., Orlando, M., Klein D. J., & McCaffrey D. F. (2003). Social context and adolescent health behavior: Does school-level smoking prevalence affect students' subsequent smoking behavior?. *Journal of Health and Social Behavior*, 44(4), 525-535.
- Ennett, S.T., Bauman, K.E., & Koch, G. G. (1994). Variability in cigarette smoking within and between adolescent friendship cliques. *Addictive behaviors*, 19(3), 295-305.
- Fagan, A. A., Van Horn, M. L., Hawkins, J. D., & Arthur, M. (2007). Using community and family risk and protective factors for community-based prevention planning. *Journal of Community Psychology*, 35(4), 535-555.
- Farrell, A. D., Danish, S. J., & Howard, C. W. (1992). Relationship between drug use and other problem behaviors in urban adolescents. *Journal of Consulting and Clinical Psychology*, Vol. 60(5), 705-712.
- Farrelly, M.C., Bray, J. W., Zarkin, G. A., & Wendling, B. W. (2001). The joint demand for cigarettes and marijuana: evidence from the National Household Surveys on Drug Abuse. *Journal of Health Economics*, 20, 51-68.
- Feinberg, M. E., Greenberg, M. T., Osgood, D. W., Sartorius, J., & Bontempo, D. (2007). Effects of the Communities That Care Model in Pennsylvania on youth risk and behavior problems. *Prevention Science*, 8, 261-270.
- Feinberg, M. E., Ridenour, T. A., & Greenberg, M. T. (2007). Aggregating indices of risk and protection for adolescent behavior problems: the communities that care youth survey. *Journal of Adolescent Health*, 40, 506-513.
- Feldstein, S. W., & Miller, W. R. (2006). Substance use and risk-taking among adolescents. *Journal of Mental Health*, 15(6), 633-643.
- Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1994). Childhood exposure to alcohol and adolescent drinking patterns. *Addiction*, 89, 1007-1016.

- Fleming, C. B., Kim, H., Harachi, T. W., & Catalano, R. F. (2002). Family processes for children in early elementary school as predictors of smoking initiation. *Journal of Adolescent Health, 30*, 184–189.
- French, S. A., & Perry, C. L. (1996). Smoking among adolescent girls: prevalence and etiology. *Journal of the American Medical Women's Association, 51*(1&2), 25-28.
- Galanter, M., Glickman, L., & Singer, D. (2007). An overview of outpatient treatment of adolescent substance abuse. *Substance Abuse, 28*(2), 51-58.
- Galea, S., Nandi, A., & Vlahov, D. (2004). The social epidemiology of substance use. *Epidemiologic Reviews, 26*, 36-52.
- Galvan, F. H., & Caetano, R. (2003). Alcohol use and related problems among ethnic minorities in the United States. *Alcohol Research & Health, 27*(1), 87-94.
- Garland, A. F., Lau, A. S., Yeh, M., McCabe, K. M., Hough, R. L., & Landsverk, J. A. (2005). Racial and ethnic differences in utilization of mental health services among high-risk youths. *American Journal of Psychiatry, 162*, 1336-1343.
- Gatins, D. E., & White, R. M. (2006). School-based substance abuse programs: can they influence students' knowledge, attitudes, and behaviors related to substance abuse? *North American Journal of Psychology, 8*(3), 517-532.
- Gavazzi, S. M., Lim, J.-Y., Yarcheck, C. M., Bostic, J. M., & Scheer, S. D. (2008). The impact of gender and family processes on mental health and substance use issues in a sample of court-involved female and male adolescents. *Journal of Youth Adolescence, 37*(9), 1071-1084.
- Gibbons, F. X., Gerrard, M., Vande Lune, L. S., Wills, T. A., Brody, G., & Conger, R. (2004). Context and cognitions: environmental risk, social influence, and adolescent substance use. *Personality and Social Psychology Bulletin, 30*(8), 1048-1061.
- Glanz, K., Maskarinec, G., & Carlin, L. (2005). Ethnicity, sense of coherence, and tobacco use among adolescents. *Annals of Behavioral Medicine, 29*, 192-199.
- Glanz, K., Mau, M., Steffan, A., Maskarinec, G., & Arriola, K. J. (2007). Tobacco use among Native Hawaiian middle school students: its prevalence, correlates and implications. *Ethnicity & Health, 12*(3), 227-244.
- Graves, K. N., Fernandez, M. E., Shelton, T. L., Frabutt, J. M., & Williford, A. P. (2005). Risk and protective factors associated with alcohol, cigarette, and marijuana use during adolescence. *Journal of Youth and Adolescence, 34*(4), 379-387.
- Goebert, D., Haning, W. F., III, Nishimura, S., Toles, M., & Rohr, A. M. (2008). Methamphetamine use in Hawai'i. *Addictive Disorders & Their Treatment, 7*(1), 31-40.
- Goebert, D., Helm, S., Rehuher, D., Hiramatsu, T., Keopaseut, B., & Yee, V. (2008). *Evaluation of the Campbell School Area Prevention and Treatment Services*. State of Hawai'i, Department of Health, Alcohol and Drug Abuse Division, Kapolei, HI.
- Goebert, D., Helm, S., Hiramatsu, T., and Yee, V. (2008). Statewide School Complex Treatment Provider Interview Project. Final Report submitted to the State of Hawai'i, Department of Health, Alcohol and Drug Abuse Division, ASO Log #08-207. Honolulu, HI.

- Golub, A., & Johnson, B. D. (2002). The misuse of the 'Gateway Theory' in US policy on drug abuse control: a secondary analysis of the Muddled Deduction. *International Journal of Drug Policy, 13*, 5-19.
- Grant, B. F., & Dawson, D. A. (1997). Age at onset of alcohol use and its association with DSM-IV Alcohol Abuse and Dependence: results from the national longitudinal alcohol epidemiologic survey. *Journal of Substance Abuse, 9*, 103-110.
- Grant, B. F., Stinson, F. S., & Harford, T. C. (2001). Age at onset of alcohol use and DSM-IV Alcohol Abuse and Dependence: a 12-year follow-up. *Journal of Substance Abuse, 13*, 493-504.
- Green, C. A., Polen, M. R., & Perrin, N. A. (2003). Structural model of gender, alcohol consumption, and health. *Substance Use & Misuse, 38*(1), 97-125.
- Griffin, K. W., Scheier, L. M., Botvin, G. J., & Diaz, T. (2000). Ethnic and gender differences in psychosocial risk, protection, and adolescent alcohol use. *Society for Prevention Research, 1*(4), 199-212.
- Griswold, K. S., Aronoff, H., Kernan, J. B., & Kahn, L. S. (2008). Adolescent substance use and abuse: recognition and management. *American Family Physician, 77*(3), 331-336.
- Gruber, E., DiClemente, R. J., Anderson, M. M., & Lodico, M. (1996). Early drinking onset and its association with alcohol use and problem behavior in late adolescence. *Preventive Medicine, 25*, 293-300.
- Guerra, L. M., Romano, P. S., Samuels, S. J., Kass, P. H. (2000). Ethnic differences in adolescent substance initiation sequences. *Archives of Pediatrics & Adolescent Medicine, 154*, 1089-1095.
- Guo, J., Hawkins, J. D., Hill, K. G., & Abbott, R. D. (2001). Childhood and adolescent predictors of alcohol abuse and dependence in young adulthood. *Journal of Studies on Alcohol, 62*, 754-762.
- Hahn, H. C., Lahiff, M., & Guterman, N. B. (2004). Asian American adolescents' acculturation, binge drinking, and alcohol- and tobacco-using peers. *Journal of Community Psychology, 32*(3), 295-308.
- Hallfors, D. D., Waller, M. W., Ford, C. A., Halpern, C. T., Brodish, P. H., & Iritani, B. (2004). Adolescent depression and suicide risk: association with sex and drug behavior. *American Journal of Preventive Medicine, 27*(3), 224-231.
- Hanson, R. F., Self-Brown, S., Fricker-Elhai, A., Kilpatrick, D. G., Saunders, B. E., et al. (2006). Relations among parental substance use, violence exposure and mental health: the national survey of adolescents. *Addictive Behaviors, 31*, 1988-2001.
- Harachi, T. W., Catalano, R. F., Sunah, K., & Choi, Y. (2001). Etiology and prevention of substance use among Asian American youth. *Prevention Science, 2*(1), 57-65.
- Hasin, D. S., & Glick, H. (1992). Severity of DSM-III-R Alcohol Dependence: United States, 1988. *British Journal of Addiction, 87*, 1725-1730.
- Hawkins, J. D., Catalano, R. F., & Arthur, M. W. (2002). Promoting science-based prevention in communities. *Addictive Behaviors, 27*, 951-976.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychological Bulletin, 112*(1), 64-105.

- Hawkins, J. D., Graham, J. W., Maguin, E., Abbott, R., Hill, K. G., & Catalano, R. F. (1997). Exploring the effects of age of alcohol use initiation and psychosocial risk factors on subsequent alcohol misuse. *Journal of Studies on Alcohol, 58*(3), 280-290.
- Hawkins, J. D., Van Horn, M. L., & Arthur, M. W. (2004). Community variation in risk and protective factors and substance use outcomes. *Prevention Science, 5*(4), 213-220.
- Hays, S. P., Hays, C. E., & Mulhall, P. F. (2003). Community risk and protective factors and adolescent substance use. *The Journal of Primary Prevention, 24*(2), 125-142.
- Heflinger, C. A., Chatman, J., & Saunders, R. C. (2006). Racial and gender differences in utilization of Medicaid substance abuse services among adolescents. *Psychiatric Services, 57*(4), 504-511.
- Hendershot, C. S., MacPherson, L., Myers, M. G., Carr, L. G., & Wall, T. L. (2005). Psychosocial, cultural and genetic influences on alcohol use in Asian American youth. *Journal of Studies on Alcohol, 66*, 185-195.
- Herrenkohl, T. I., Hawkins, J. D., Abbott, R. D., Guo, J., & Social Development Research Group. (2002). Correspondence between youth report and census measures of neighborhood context. *Journal of Community Psychology, 30*(3), 225-233.
- Hill, J., Emery, R. E., Harden, K. P., Mendle, J., & Turkheimer, E. (2008). Alcohol use in adolescent twins and affiliation with substance using peers. *Journal of Abnormal Child Psychology, 36*, 81-94.
- Hill, K. G., Hawkins, J. D., Catalano, R. F., & Abbott, R. D. (2005). Family influences on the risk of daily smoking initiation. *Journal of Adolescent Health, 37*, 202-210.
- Hingson, R. W., Heeren, T., & Winter, M. R. (2006). Age at drinking onset and alcohol dependence. *Archives of Pediatrics & Adolescent Medicine, 160*, 739-746.
- Hingson, R., Heeren, T., & Zakocs, R. (2001). Age of drinking onset and involvement in physical fights after drinking. *108*, 872-877.
- Hishinuma, E. S., Nishimura, S. T., Miyamoto, R. H., & Johnson, R. C. (2000). Alcohol use in Hawai'i. *Hawai'i Medical Health Journal, 59*, 329-335.
- Hogan, J. A., Gabrielsen, K. R., Luna, N., & Grothaus, D. (2003). *Substance abuse prevention: the intersection of science and practice*. New York: Pearson Education, Inc.
- Hornik, R., Jacobsohn, L., Orwin, R., Piesse, A. & Kalton, G. (2008). Effects of the National Youth Anti-Drug Media Campaign on youths. *American Journal of Public Health: 10.2105/AJPH.2007.125849*
- Huizinga, D., Loeber, R., & Thornberry, T. P. (1994). *Urban delinquency and substance use: Initial findings*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Hull, P., Kilbourne, B., Reece, M., & Husaini, B. (2008). Community involvement and adolescent mental health: moderating effects of race/ethnicity and neighborhood disadvantage. *Journal of Community Psychology, 36*(4), 534-551.

- Institute of Medicine (1994). Committee on Prevention of Mental Health Disorders. In Mrazek, P.J. & Haggerty, R. J. (Eds.), *Reducing risks for mental disorders: frontiers for preventive intervention research*. Washington, D.C.: National Academy Press.
- Isralowitz, R., & Rawson, R. (2006). Gender differences in prevalence of drug use among high risk adolescents in Israel. *Addictive Behaviors, 31*, 355-358.
- Jaccard, J., Blanton, H., & Dodge, T. (2005). Peer influences on risk behavior: an analysis of the effects of a close friend. *Developmental Psychology, 41*(1), 135-147.
- Jackson, C., & Henriksen, L. (1997). Do as I say: parent smoking, antismoking socialization, and smoking onset among children. *Addictive Behaviors, 22*, 107-114.
- Jessor, R., & Jessor, S. L. (1975). Adolescent development and the onset of drinking: a longitudinal study. *Journal of Studies on Alcohol, 36*(1), 27-51.
- Johnson, P. B., Boles, S. M., Kleber, H. D., Vaughan, R. D., & McVeigh, K. H. (2000). Age-related differences in adolescent smokers' and nonsmokers' assessments of the relative addictiveness and health harmfulness of cigarettes, alcohol, and marijuana. *Journal of Substance Abuse, 11*(1), 45-52.
- Johnston, L.D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2009). *Monitoring the future national results on adolescent drug use: overview of key findings, 2008 (NIH Publication No. 09-7401)*. Bethesda, MD: National Institute on Drug Abuse.
- Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, J. E. (2008). *Monitoring the Future national survey results on drug use, 1975-2007: Vol. I, Secondary school students (NIH Pub. No. 08-6418A)*. Bethesda, MD: National Institute on Drug Abuse.
- Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1996). *National survey results on drug use from the Monitoring the Future Study, 1975-1995. Vol. I: Secondary school students (NIH Pub. No. 97-4139)*. Rockville, MD: National Institute on Drug Abuse.
- Jones, D. L., Heflinger, C. A., & Saunders, R. C. (2007). The ecology of adolescent substance abuse service utilization. *American Journal of Community Psychology, 40*, 345-358.
- Kandel, D. (1975). Stages in adolescent involvement in drug use. *American Association for the Advancement of Science, 190*(4217), 912-914.
- Kandel, D. B., & Andrews, K. (1987). Processes of adolescent socialization by parents and peers. *International Journal of the Addictions, 22*, 319-342.
- Kandel, D., Yamaguchi, K., & Chen, K. (1992). Stages of progression in drug involvement from adolescence to adulthood: further evidence for the Gateway Theory. *Journal of Studies on Alcohol, 53*(5), 447-457.
- Kandel, D., & Yamaguchi, K. (1993). From beer to crack: developmental patterns of drug involvement. *American Journal of Public Health, 83*(6), 851-855.
- Kauffman, S. E., Silver, P., & Poulin, J. (1997). Gender differences in attitudes toward alcohol, tobacco, and other drugs. *Journal of Social Work, 42*(3), 231-241.

- Kearney, C. A. (2008). School absenteeism and school refusal behavior in youth: a contemporary review. *Clinical Psychology Review, 28*, 451-471.
- Kilpatrick, D. G., Ruggiero, K. J., Acierno, R., Saunders, B. E., Resnick, H. S., & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology, 71*(4), 692-700.
- Kilpatrick, D. G., Acierno, R., Saunders, B., Resnick, H. S., Best, C. L., & Schnurr, P. P. (2000). Risk factors for adolescent substance abuse and dependence data from a national sample. *Journal of Consulting and Clinical Psychology, 68*(1), 19-30.
- Kim, I. J., Zane, N. W. S., & Hong, S. (2002). Protective factors against substance use among Asian American youth: a test of Peer Cluster Theory. *Journal of Community Psychology, 30*(5), 565-584.
- Kim, J., & McCarthy, W. J. (2006). School-level contextual influences on smoking and drinking among Asian and Pacific Islander adolescents. *Drug and Alcohol Dependence, 84*, 56-68.
- Kim, R. J., & Jackson, D. S. (2009). Outcome evaluation findings of a Hawaiian culture-based adolescent substance abuse treatment program. *Psychological Services, 6*(1), 43-55.
- King, K. M., & Chassin, L. (2007). A prospective study of the effects of age of initiation of alcohol and drug use on young adult substance dependence. *Journal on Studies of Alcohol and Drugs, 68*(2), 256-265.
- Kliewer, W., & Murrelle, L. (2007). Risk and protective factors for adolescent substance use: findings from a study in selected Central American countries. *Journal of Adolescent Health, 40*, 448-455.
- Knibbe, R. A., Joosten, J., Derickx, M., Choquet, M., Morin, D., Monshouwer, K., et al. (2005). Perceived availability of substances, substance use and substance-related problems: a cross national study among French and Dutch adolescents. *Journal of Substance Use, 10*(2-3), 151-163.
- Kobus, K. (2003). Peers and adolescent smoking. *Addiction, 98*, 37-55.
- Kogan, S. M., Luo, Z., Murry, V. M., & Brody, G. H. (2005). Risk and protective factors for substance use among African American high school dropouts. *Psychology of Addictive Behaviors, 19*(4), 382-391.
- Kokkevi, A. E., Arapaki, A. A., Richardson, C., Florescu, S., Kuzman, M., et al. (2007). Further investigation of psychological and environmental correlates of substance use in adolescence in six European countries. *Drug and Alcohol Dependence, 88*, 308-312.
- Kokkevi, A., Richardson, C., Florescu, S., Kuzman, M., & Stergar, E. (2007). Psychosocial correlates of substance use in adolescence: a cross-national study in six European countries. *Drug and Alcohol Dependence, 86*, 67-74.
- Kosterman, R., Hawkins, J. D., Guo, J., Catalano, R. F., Abbott, R. D. (2000). The dynamics of alcohol and marijuana initiation: patterns and predictors of first Use in adolescence. *American Journal of Public Health, 90*(3), 360-366.
- Kulis, S., Marsiglia, F. F., Sicote, D., & Nieri, T. (2007). Neighborhood effects on youth substance use in Southwestern City. *Sociological Perspectives, 50*(2), 273-301.

- Kuntsche, E. (2004). Progression of a general substance use pattern among adolescents in Switzerland? Investigating the relationship between alcohol, tobacco, and cannabis use over a 12-year period. *European Addiction Research, 10*, 118-125.
- Kuntsche, E., & Jordan, M. D. (2006). Adolescent alcohol and cannabis use in relation to peer and school factors results of multilevel analyses. *Drug and Alcohol Dependence, 84*, 167-174.
- Kuperman, S., Chan, G., Kramer, J. R., Bierut, L., Bucholz, K. K., Hesselbrock, V., et al. (2006). Relationship of age of first drink to child behavioral problems and family psychopathology. *Alcoholism: Clinical and Experimental Research, 29*(10), 1869-1876.
- Labouvie, E., Bates, M. E., & Pandina, R. J. (1997). Age of first use: its reliability and predictive utility. *Journal on Studies of Alcohol, 58*, 638-643.
- Lamb, S., Greenlick, M. R., & McCarty, D. (Eds.). (1998) *Bridging the gap between practice and research*. Washington, D.C.: National Academy Press.
- Lambert, S. F., Brown, T. L., Phillips, C. M., & Jalongo, N. S. (2004). The relationship between perceptions of neighborhood characteristics and substance use among urban African American adolescents. *American Journal of Community Psychology, 34*(3/4), 205-218.
- Larm, P., Hodgins, S., Larsson, A., Samuelson, Y. M., & Tengström, A. (2008). Long-term outcomes of adolescents treated for substance misuse. *Drug and Alcohol Dependence, 96*, 79-89.
- Leventhal, T., Brooks-Gunn, J. (2000). The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin, 126*(2), 309-337.
- Lonczak, H. S., Huang, B., Catalano, R. F., Hawkins, J. D., Hill, K. G., Abbott, R. D., Ryan, J. A. M., & Kosterman, R. (2001). The social predictors of adolescent alcohol misuse: a test of the Social Developmental Model. *Journal of Studies on Alcohol, 62*, 179-189.
- Longshore, D., Ghosh-Dastidar, B. & Ellickson, P.L. (2006). National Youth Anti-Drug Media Campaign and school-based drug prevention: Evidence for a synergistic effect in ALERT Plus. *Addictive Behaviors, 31*, 496–508.
- Lundborg, P., & Lindgren, B. (2002). Risk perceptions and alcohol consumption among young people. *The Journal of Risk and Uncertainty, 25*(2), 165-183.
- Lynskey, M. T., Heath, A. C., Bucholz, K.K., Slutske, W. S.,Madden, P. A., Nelson, E. C., et al. (2003). Escalation of drug use in early-onset cannabis users vs co-twin controls. *Journal of the American Medical Association, 289*(4), 427-433.
- Mackesy-Amiti, M. E., Fendrich, M., & Goldstein, P. J. (1997). Sequence of drug use among serious drug users: typical vs atypical progression. *Drug and Alcohol Dependence, 45*, 185-196.
- Mark, T.L., Song, X., Vandivort, R., Duffy, S., Butler, J., Coffey, R., et al (2006). Characterizing substance abuse programs that treat adolescents. *Journal of Substance Abuse Treatment, 31*, 59-65
- Marsh A., & Dale, A. (2005). Risk factors for alcohol and other drug disorders: a review. *Australian Psychologist, 40*(2), 73-80.

- Martins, S. S., Storr, C. L., Alexandre, P. K., & Chilcoat, H. D. (2008). Do adolescent ecstasy users have different attitudes towards drugs when compared to marijuana users? *Drug and Alcohol Dependence, 94*, 63-72.
- Maschi, T., Schwalbe, C. S., Morgen, K., Gibson, S., & Violette, N. M. (2009). Exploring the influence of gender on adolescents' service needs and service pathways. *Children and Youth Services Review, 31*, 257-264.
- Mason, W. A., Hitchings, J. E., & Spoth, R.L. (2008). The interaction of conduct problems and depressed mood in relation to adolescent substance involvement and peer substance use. *Drug and Alcohol Dependence, 96*(3), 233-248.
- Mason, W. A., & Windle, M. (2001). Family, religious, school and peer influences on adolescent alcohol use: a longitudinal study. *Journal of Studies on Alcohol, 62*, 44-53.
- Maxwell, K. A. (2002). Friends: the role of peer influence across adolescent risk behaviors. *Journal of Youth and Adolescence, 31*(4), 267-277.
- Mayeda, D. T., Hishinuma, E. S., Nishimura, S. T., Garcia-Santiago, O., & Mark, G. Y. (2006). Asian/Pacific Islander youth violence prevention center: interpersonal violence and deviant behaviors among youth in Hawai'i. *Journal of Adolescent Health, 39*, 276.e1-276.e11.
- MacDonald, R., Fleming, M. F., & Barry, K. L. (1991) Risk factors associated with alcohol abuse in college students. *The American Journal of Drug and Alcohol Abuse, 17*(4), 439-449.
- McGue, M., & Iacono, W.G. (2005). The association of early adolescent problem behavior with adult psychopathology. *American Journal of Psychiatry, 162*, 1118-1124.
- McGue, M., Iacono, W.G., Legrand, L. N., Malone, S., & Elkins, I. (2001). Origins and consequences of age at first drink. I. associations with substance-use disorders, disinhibitory behavior and psychopathology, and P3 amplitude. *Alcoholism: Clinical and Experimental Research, 25*(8), 1156-1165.
- McLellan, A. T., & Meyers, K. (2004). Contemporary addiction treatment: a review of systems problems for adults and adolescents. *Biological Psychiatry, 56*, 764-770.
- Merrill, J. C., Kleber, H. D., Shwartz, M., Liu, H., Lewis, & S. R. (1999). Cigarettes, alcohol, marijuana, other risk behaviors and American youth. *Drug and Alcohol Dependence, 56*, 205-212.
- Miller, T. Q., & Volk, R. J. (2002). Family relationships and adolescent cigarette smoking: results from a national longitudinal survey. *Journal of Drug Issues, 32*, 945-972.
- Mokuau, N. (2002). Culturally based interventions for substance use and child abuse among Native Hawaiians. *Public Health Reports, 117*(1), S82-S87.
- Monitoring the Future (2009). Retrieved June 8<sup>th</sup>, 2009 from <http://www.monitoringthefuture.org/>
- Monn, A. R., Connelly, C. D., Landsverk, J. A., & Brown, S. A. (2008). Substance involvement among youths in child welfare: the role of common and unique risk factors. *American Journal of Orthopsychiatry, 78*(3), 340-349.
- Morrall, A. R., McCaffrey, D. F., & Ridgeway, G. (2004). Effectiveness of community-based treatment for substance-abusing adolescents: 12-month outcomes of youths entering Phoenix Academy or alternative probation dispositions. *Psychology of Addictive Behaviors, 18*(3), 257-268.

- Mrazek PJ, Haggerty RJ (eds). 1994. *Reducing Risks for Mental Disorders: Frontiers for preventive intervention research*. Committee on Prevention of Mental Disorders, Institute of Medicine.
- Washington DC: National Academy Press. Musher-Eizenman, D. R., Holub, S. C., & Arnett, M. (2003). Attitude and peer influences on adolescent substance use: the moderating effect of age, sex, and substance. *Journal of Drug Education, 33*(1), 1-23.
- Musick, K., Seltzer, J. A., & Schwartz, C. R. (2008). Neighborhood norms and substance use among teens. *Social Science Research, 37*, 138-155.
- Nagasawa, R., Qian, Z., & Wong, P. (2001). Theory of Segmented Assimilation and the adoption of marijuana use and delinquent behavior by Asian Pacific youth. *The Sociological Quarterly, 42*(3), 351-372.
- Nation, M., & Heflinger, C. A. (2006). Risk factors for serious alcohol and drug use: the role of psychosocial variables in predicting the frequency of substance use among adolescents. *The American Journal of Drug and Alcohol Abuse, 32*, 415-433.
- Newcomb, M. D. (1995). Identifying high-risk youth: prevalence and patterns of adolescent drug abuse. *National Institute on Drug Abuse Research Monograph Series, 156*, 7-37.
- Newcomb, M. D., & Felix-Ortiz, M. (1992). Multiple protective and risk factors for drug use and abuse: cross-sectional and prospective findings. *Journal of Personality and Social Psychology, 63*(2), 280-296.
- Nishimura, S. T., Goebert, D. A., Ramisetty-Mikler, S., & Caetano, R. (2005). Adolescent alcohol use and suicide indicators among adolescents in Hawai'i. *Cultural Diversity and Ethnic Minority Psychology, 11*(4), 309-320.
- Nishimura, S. T., Hishinuma, E. S., Else, 'I. R. N., Goebert, D., & Andrade, N. N. (2005). Ethnicity and adolescent substance use. *Cultural Diversity and Ethnic Minority Psychology, 11*(3), 239-258.
- O'Callaghan, F. V., & Hannon, T. (2003). Normalization of marijuana use: its effects on adolescents' intentions to use marijuana. *Substance Use & Misuse, 38*(2), 185-199.
- O'Callaghan, F., Reid, A., & Copeland, J. (2006). Risk perception and cannabis use in a sample of young adults. *Journal of Substance Use, 11*(2), 129-136.
- O'Connor, R. M., Fite, P. J., Nowlin, P. R., & Colder, C. R. (2007). Children's beliefs about substance use: an examination of age differences in implicit and explicit cognitive precursors of substance use initiation. *Psychology of Addictive Behaviors, 21*(4), 525-533.
- Office of National Drug Control Policy (2008). *ONDCP launches first major initiative to combat teen prescription drug abuse*. Retrieved March 5, 2009, from <http://www.mediacampaign.org/newsroom/press08/012408.html>.
- Onoye, J., Goebert, D., & Nishimura, S. (2009). *Influence of incentives on response rates and web-based administration on alcohol and substance use reporting among rural and ethnic minority students*. Manuscript submitted for publication.
- Otsuki, T. A. (2003). Substance use, self-esteem, and depression among Asian American adolescents. *Journal of Drug Education, 33*(4), 369-390.
- Ozer, E. J., & Fernald, L. C. H. (2008). Alcohol and tobacco use among rural Mexican adolescents: individual, family, and community level factors. *Journal of Adolescent Health, 43*, 498-505.

- Pacific Institute for Research and Evaluation (2007). *Underage drinking in the United States the facts*. Retrieved May 5, 2009, from [www.udetc.org/underagedrinkingcosts.asp](http://www.udetc.org/underagedrinkingcosts.asp)
- Pacific Institute for Research and Evaluation (2006). *Underage drinking in Hawai'i: the facts*. Retrieved May 5, 2009, from [www.udetc.org/factsheets/Hawaii.pdf](http://www.udetc.org/factsheets/Hawaii.pdf)
- Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practices and delinquency. *Child Development, 55*, 1299-1307.
- Pearson, R. S. (2004). *The 2003 Hawai'i Student Alcohol, Tobacco, and Other Drug Use Study (1987-2003): Hawai'i Adolescent Prevention and Treatment Needs Assessment*. State of Hawai'i, Department of Health, Alcohol and Drug Abuse Division, Kapolei, HI.
- Pedersen, W. (1991) Mental health, sensation seeking and drug use patterns: a longitudinal. *British Journal of Addiction, 86*, 195-204
- Pinhey, T. K., & Wells, N. R. (2007). Asian-Pacific Islander adolescent methamphetamine use: does "ice" increase aggression and sexual risks? *Substance Use & Misuse, 42*(11), 1801-1809.
- Pitkänen, T., Lyyra, A.-L., & Pulkkinen, L. (2005). Age of onset of drinking and the use of alcohol in adulthood: a follow-up study from age 8-42 for females and males. *Addiction, 100*, 652-661.
- Poikolainen, K. (2002). Antecedents of substance use in adolescence. *Current Opinion in Psychiatry, 15*, 241-245.
- Prescott, C. A., & Kendler, K. S. (1999). Age at first drink and risk for alcoholism: a noncausal association. *Alcoholism: Clinical and Experimental Research, 23*(1), 101-107.
- Prescott, C. A., & Kendler, K. S. (2002). Early age at first alcoholic drink. *American Journal of Psychiatry, 158*(9), 1530.
- Price, R. K., Risk, N. K., Wong, M. M., & Klinge, R. S. (2002). Substance use and abuse by Asian Americans and Pacific Islanders: preliminary results from four nation epidemiologic studies. *Public Health Reports, 117*(1), S39-S50.
- Prinstein, M. J., Boergers, J., & Spirito, A. (2001). Adolescents' and their friends' health-risk behavior: factors that alter or add to peer influence. *Journal of Pediatric Psychology, 26*(5), 287-298.
- Ramisetty-Mikler, S., Caetano, R., Goebert, D., & Nishimura, S. (2004). Ethnic variation in drinking, drug use, and sexual behavior among adolescents in Hawai'i. *Journal of School Health, 74*(1), 16-22.
- Resnick, M. D., Bearman, P. S., Blum, R.W., et al. (1997). Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association, 278*(10):823-32.
- Richardson, J. L., Dwyer, K., McGuigan, K., Hansen, W. B., Dent, C., Johnson, C. A., Sussman, S. Y., Brannon, B., & Flay, B. (1989). Substance abuse among eighth-grade students who take care of themselves after school. *Pediatrics, 84*(3), 556-566.
- RMC Research Corporation, (2001). *School-based outpatient treatment for adolescent substance abuse. A Review of program models in Washington State*. Office of Superintendent of Public Instruction.
- Robins, L. N., & Przybeck, T. R. (1985). Age of onset of drug use as a factor in drug and other disorders. *NIDA Research Monograph: Etiology of Drug Abuse: Implications of Prevention, 56*, 178-192.

- Roebuck, M.C., French, M T., & Dennis, M. L. (2004). Adolescent marijuana use and school attendance. *Economics of Education Review*, 23(2), 133-141.
- Rohde, P., Lewinsohn, P. M., & Seeley, J. R. (1996). Psychiatric comorbidity with problematic alcohol use in high school students. *Journal of American Academy of Child and Adolescent Psychiatry*, 35(1), 101-109.
- Rothman, E. F., Edwards, E. M., Heeren, T., & Hingson, R. W. (2008). Adverse childhood experiences predict earlier age of drinking onset: results from a representative US sample of current and former drinkers. *Pediatrics*, 122(2), e298-e304.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331.
- Saffer, H., & Grossman, M. (1987). Beer taxes, the legal drinking age, and the youth motor vehicle fatalities. *Journal of Legal Studies*, 16, 351-374.
- Sakai, J. T., Ho, P. M., Shore, J. H., Risk, N. K., & Price, R. K. (2005). Asians in the United States: substance dependence and use of substance-dependence treatment. *Journal of Substance Abuse Treatment*, 29, 75-84.
- Sakai, J. T., Risk, N. K., Tanaka, C. A., & Price, R. K. (2008). Conduct disorder among Asians and Native Hawaiian/Pacific Islanders in the USA. *Psychological Medicine*, 38, 1013-1025.
- Sawyer, T. M., & Stevenson, J. F. (2008). Perceived parental and peer disapproval toward substances: influences on adolescent decision-making. *Journal of Primary Prevention*, 29, 465-477.
- Saxe, L., Kadushin, C., Beveridge, A., Livert, D., Tighe, E., Rindskopf, D., et al. (2001). The visibility of illicit drugs: implications for community-based drug control strategies. *American Journal of Public Health*, 91(12), 1987-1994.
- Scheier, L. M., Newcomb, M. D., & Skager, R. (1994). Risk, protection, and vulnerability to adolescent drug use: latent-variable models of three age groups. *Journal of Drug Education*, 24, 49-82.
- Schinke, S. P., Fang, L., & Cole, K. C. A. (2008). Substance use among early adolescent girls: risk and protective factors. *Journal of Adolescent Health*, 43, 191-194.
- Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: a longitudinal inquiry. *American Psychologist*, 45(5), 612-630.
- Sher, K. M. (1994). Individual-level risk factors in the development of alcohol problems: exploring the biopsychosocial matrix of risk. In Zucker, R. A., Boyd, G. & Howard, J. (Eds.) *Research Monograph 26*. U.S. Department of Health and Human Services, Rockville, MD.
- Sherman, S. J., Chassin, L., Presson, C., Seo, D.-C., & Macy, J. T. (in press). The intergenerational transmission of implicit and explicit attitudes toward smoking: predicting adolescent smoking initiation. *Journal of Experimental Social Psychology*.
- Simons-Morton, B. (2007). Social influences on adolescent substance use. *American Journal of Health Behavior*. 31(6), 672-684.
- Spoth, R., Greenburg, M., & Turrisi, R. (2008). Preventative interventions addressing underage drinking: state of the evidence and steps toward public health impact. *Pediatrics*, 121 Supplement, S311-S336

- State of Hawai'i Department of Health. *Alcohol and Drug Abuse: How to Access Substance Abuse Treatment in Hawai'i*. Retrieved June 13, 2008, from <http://www.hawaii.gov/health/substance-absue/prevention-treatment/treatment/adtrtsvc.htm>.
- Steinberg, L. (1991). Adolescent transitions and alcohol and other drug use prevention. Preventing Adolescent Drug Use: From Theory to Practice. *Office of Substance Abuse Prevention Monograph-8* (pp. 13-51). Washington, DC: U. S. Department of Health and Human Services.
- Steinman, K. J., Ferketich, A. K., & Sahr, T. (2006). The dose-response relationship of adolescent religious activity and substance use: variation across demographic groups. *Health Education & Behavior, 35*(1), 22-43.
- Stueve, A., & O'Donnell, L. N. (2005). Early alcohol initiation and subsequent sexual and alcohol risk behaviors among urban youths. *American Journal of Public Health, 95*(5), 887-893.
- Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (2006). *The NSDUH Report: Substance Use Treatment among Adolescents: 2003 to 2004*. Rockville, MD. Retrieved March 5, 2009 from <http://www.oas.samhsa.gov/2k8/youthTrends/youthTrends.pdf>.
- Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (2008). *The NSDUH Report: Trends in Substance Use, Dependence or Abuse, and Treatment among Adolescents: 2002 to 2007*. Rockville, MD. Retrieved March 5, 2009, from <http://www.oas.samhsa.gov/2k8/youthTrends/youthTrends.pdf>.
- Sung, M., Erkanli, A., Angold, A., & Costello, E. J. (2004). Effects of age at first substance use and psychiatric comorbidity on the development of substance use disorders. *Drug and Alcohol Dependence, 75*, 287-299.
- Swadi, H. (1999). Individual risk factors for adolescent substance use. *Drug and Alcohol Dependence, 55*, 209-244.
- Swahn, M. H., Bossarte, R. M., & Sullivent, E. E. (2008). Age of alcohol use initiation, suicidal behavior, and peer and dating violence victimization and perpetration among high-risk, seventh-grade adolescents. *Pediatrics, 121*, 297-305.
- Taylor, J., Lloyd, D., Warheit, G. (2006). Self-derogation, peer factors, and drug dependence among a multiethnic sample of young males. *Journal of Child and Adolescent Substance Abuse, 15*(2), 39-51.
- Tartar, R. E., Vanyukov, M., Kirisci, L., Reynolds, M., & Clark, D. (2006). Predictors of marijuana use in adolescents before and after licit drug use: examination of Gateway Hypothesis. *American Journal of Psychiatry, 163*(12), 2134-2140.
- Teichman, M., & Kefir, E. (2000). The effects of perceived parental behaviors, attitudes, and substance-use on adolescent attitudes toward and intent to use psychoactive substances. *Journal of Drug Education, 30*(2), 193-204.
- Tomar, Scott L., & Hatsukami, Dorothy K. (2007). Perceived risk of harm from cigarettes or smokeless tobacco among U.S. high school seniors. *Nicotine & Tobacco Research, 9*(11), 1191-1196.
- Tonin, S. L., Burrow-Sanches, J., J., Harrison, R. S., & Kircher, J. C. (2008). The influence of attitudes, acculturation, and gender on substance use for Mexican American middle school students. *Addictive Behaviors, 33*, 949-954.
- Toumbourou, J., Stockwell, T., Neighbors, C., Marlatt, G., Sturge, J., & Rehm, J. (2007). Interventions to reduce harm associated with adolescent substance use. *THE LANCET*, Volume 369, Issue 9570, Pages 1391-1401

- Toumbourou, J. W., Beyers, J. M., Catalano, R. F., Hawkins, J. D., Arthur, M. W., Evans-Whipp, T., et al. (2005). Youth alcohol and other drug use in the United States and Australia: a cross-national comparison of three state-wide samples. *Drug and Alcohol Review, 24*, 515-523.
- Tucker, J. S., Ellickson, P. L., Collins, R. L., & Klein, D. J. (2006). Are drug experimenters better adjusted than abstainers and users?: a longitudinal study of adolescent marijuana use. *Journal of Adolescent Health, 39*, 488-494.
- U.S. Congress, Office of Technology Assessment. (1994). *Technologies for understanding and preventing substance abuse and addiction*. OTA-EHR-597. Washington D.C.: U.S. Government Printing Office.
- Van den Bree, M. B., & Pickworth, W. B. (2005). Risk factors predicting changes in marijuana involvement in teenagers. *Arch Gen Psychiatry, 62*, 311-319.
- Van der Vorst, H., Engels, R. C. M. E., Meeus, W., Deković, M., & Vermulst, A. (2006). Family factors and adolescents' alcohol use: a reply to Chassin and Handley (2006) and Fromme (2006). *Psychology of Addictive Behaviors, 20*(2), 140-142.
- Van Horn, M. L., Hawkins, J. D., Arthur, M. W., & Catalano, R. F. (2007). Assessing community effects on adolescent substance use and delinquency. *Journal of Community Psychology, 35*(8), 925-946.
- Vega, W. A., Zimmerman, R. S., Warheit, G. J., Apospori, E., & Gil, A. G. (1993). Risk factors for early adolescent drug use in four ethnic and racial groups. *American Journal of Public Health, 83*(2), 185-189.
- Wagner, E. F., Tubman, J. G., & Gil, A. G. (2004). Implementing school-based abuse interventions: methodological dilemmas and recommended solutions. *Society for the Study of Addiction, 99*(2), 106-119.
- Wagner, E. F., Brown, S. A., Monti, P. M., Myers, M. G., & Waldron, H. B. (1999). Innovations in adolescent substance abuse intervention. *The Research Society on Alcoholism, 23*(2), 236-249.
- Wagner, M. K. (2001). Behavioral characteristics related to substance abuse and risk-taking, sensation-seeking, anxiety sensitivity, and self-reinforcement. *Addictive Behaviors, 26*, 115-120.
- Waldron, H. B., Kern-Jones, S., Turner, C. W., Peterson, T. R., & Ozechowski, T. J. (2007). Engaging resistant adolescents in drug abuse treatment. *Journal of Substance Abuse Treatment, 32*, 133-142.
- Wallace, J. M., Jr., & Bachman, J. G. (1991). Explaining racial/ethnic differences in adolescent drug use: the impact of background and lifestyle. *Social Problems, 38*(3), 333-357.
- Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Cooper, S. M., & Johnston, L. D. (2003). Gender and ethnic differences in smoking, drinking and illicit drug use among American 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade students, 1976-2000. *Addiction, 98*, 225-234.
- Wallace, S. A., & Fisher, C. B. (2007). Substance use attitudes among urban Black adolescents: the role of parent, peer and cultural factors. *Journal of Youth Adolescence, 36*, 441-451.
- Warner, L. A., & White, H. R. (2003). Longitudinal effects of age at onset and first drinking situations on problem drinking. *Substance Use & Misuse, 38*(14), 1983-2016.
- Werner, F. E. (1989). High risk children in young adulthood: a longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry, 59*, 72-81

- Williams, R. J., Chang, S. Y., & Addiction Centre Adolescent Research Group (2000). A comprehensive and comparative review of adolescent substance abuse treatment outcome. *American Psychological Association, 7*(2), 138-166.
- Windle, M. (2000). Parental, sibling, and peer influences on adolescent substance use and alcohol problems. *Applied Developmental Science, 4*(2), 98-110.
- Windle, M. (1991). Alcohol use and abuse. *Alcohol Health & Research World, 15*(1), 5-10.
- Windle, M. (1990). A longitudinal study of antisocial behaviors in early adolescence as predictors of late adolescent substance use: gender and ethnic group differences. *Journal of Abnormal Psychology, 99*(1), 86-91.
- Winstanley, E. L., Steinwachs, D. M., Ensminger, M. E., Latkin, C. A., Stitzer, M. L., & Olsen, Y. (2008). The association of self-reported neighborhood disorganization, and social capital with adolescent alcohol and drug use, dependence, and access to treatment. *Drug and Alcohol Dependence, 92*, 173-182.
- Winters, K. C., & Fahnhorst, T (2006). *Alcohol Problems in Adolescents and Young Adults: Epidemiology, Neurobiology, Prevention, and Treatment* (M. Galanter, Ed.). New York: Springer Science + Business Media.
- Winters, K. C., & Leitten, W. (2007). Brief intervention for drug-abusing adolescents in a school setting. *Psychology of Addictive Behaviors, 21*(2), 249-254.
- Wintersteen, M. B., Mensinger, J. L., & Diamond, G. S. (2005). Do gender and racial differences between patient and therapist affect therapeutic alliance and treatment retention in adolescents? *Professional Psychology: Research and Practice, 36*(4), 400-408.
- Wong, M. M., Klinge, R. S., Price, R. K. (2004). Alcohol, tobacco, and other drug use among Asian American and Pacific Islander adolescents in California and Hawai'i. *Addictive Behaviors, 29*, 127-141.
- Wu, L.-T., & Ringwalt, C. L. (2006). Use of alcohol treatment and mental health services among adolescents with alcohol use disorders. *Psychiatric Services, 57*(1), 84-92.
- Yamaguchi, K., & Kandel, D. B. (1984). Patterns of drug use from adolescence to young adulthood: II. Sequences of progression. *American Journal of Public Health, 74*, 668-672.
- Yamaguchi, R., Johnston, L. D., & O'Malley, P.M. (2003). Relationship between student illicit drug use and school drug-testing policies. *Journal of School Health, 73*(4), 159-164.
- Yeh, M.-Y., Chiang, I.-C., & Huang, S.-Y. (2006). Gender differences in predictors of drinking behavior in adolescents. *Addictive Behaviors, 31*, 1929-1938.
- Youngblade, L. M., Curry, L. A., Novak, M., Vogel, B., & Shenkman, E. (2006). The impact of community risks and resources on adolescent risky behavior and health care expenditures. *Journal of Adolescent Health, 38*, 486-494.
- Youngblade, L. M., Theokas, C., Schulenberg, J., Curry, L., Huang, I.-C., & Novak, M. (2007). Risk and promotive factors in families, schools, and communities: a contextual model of positive youth development in adolescence. *Pediatrics, 119*(1), S47-S53.
- Yu, J., & Williford, W. R. (1994). Alcohol, other drugs, and criminality: a structural analysis. *The American Journal of Drug and Alcohol Abuse, 20*(3), 373-393.

- Yu, S. M., Huang, Z. J., & Singh, G. K. (2009). Health status and health services utilization among US Chinese, Asian Indian, Filipino, and other Asian/Pacific Islander children. *Pediatrics*, *113*(1), 101-107.
- Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Pediatrics*, *121*(S4), S252-S272.
- Zunz, S. J., Ferguson, N. L., Senter, M. (2005). Post-identification support for substance dependent students in school-based programs: the weakest link. *Journal of Child & Adolescent Substance Abuse*, *14*(4), 77-92.

# APPENDIX: THE 2007-2008 HAWAI'I STUDENT ALCOHOL, TOBACCO, AND OTHER DRUG USE SURVEY



61664

1 4 0 0 4 1 2 4 0 4

**2007-2008 Ka Leo O Na Keiki  
Hawaii Student Alcohol, Tobacco, and Other Drug Use Survey**

Thank you for agreeing to participate. This survey asks you about a number of things in your life, including your friends, family, school, and community. Many of the questions will deal with what you know and think about alcohol, tobacco, and other drugs. Your answers will be used to help us learn more about the feelings and behaviors of students in Hawaii.

Your answers to these questions will be confidential. This means your answers will stay a secret. Please do not write your name anywhere in the booklet. When you are finished with the survey, put your survey booklet in the envelope so that no one who knows you will see your answers or know how you responded.

Remember, it is very important that you are completely honest when answering the questions. This study is completely voluntary. You may skip any question that you do not wish to answer.

Other students have said that these questions are very interesting and they enjoy participating. We hope you will too. Be sure to read the instructions below before you begin to answer the questions. Thank you very much for being an important part of this project!

**INSTRUCTIONS**

1. This is not a test - there are no right or wrong answers. Just pick the answer that fits you the best.
2. Some of the questions have the following format:

Mark the circle that represents how you feel about the statement below.

NO!    no    yes    YES!

Example: Did you enjoy school today?               

Mark (the BIG) "NO!" if you think the statement is definitely not true for you.

Mark (the little) "no" if you think the statement is mostly not true for you.

Mark (the little) "yes" if you think the statement is mostly true for you.

Mark (the BIG) "YES!" if you think the statement is definitely true for you.

In the example above, the student marked yes because he or she thinks the statement is mostly true.

In most cases, you will be asked to mark only one answer. If you don't find an answer that fits exactly, use one that comes closest. If any question does not apply to you, or you are not sure of what it means, just leave it blank. Complete as many questions as possible.

**MARKING INSTRUCTIONS**

- Use a pencil only.
- Choose only one response per question.
- Make dark marks that fill the circle completely.
- Cleanly erase any answer you wish to change.

CORRECT:                 INCORRECT:



Hawaii Student Alcohol, Tobacco, and Other Drug Use Survey

Part A: These questions ask for some general information about you. Please mark the response that best describes you. Remember all your answers are a secret.

1. What are the five digits of your zip code? For instance, if your zip code was 98814, you would bubble in a 9 in the first column, a 8 in the second column, an 8 in the third column, a 1 in the fourth column, and a 4 in the last column.

Sample zip code grid showing digits 9, 6, 8, 1, 4 with corresponding bubbles. Includes a grid for digits 1-0.

- 2. How old are you today?
3. What is your grade level in school right now?

- 4. What is your sex?
5. How do you describe yourself? Please select the responses below that describe your ethnic or racial background. Choose ALL that apply to you.

- 6. Which ethnic group listed below describes you BEST? If you belong to several ethnic groups, try to choose the ONE answer that describes you best.

- 7. What is the language your family speaks MOST OFTEN at home?

- 8. Think of where you live most of the time. Which of the following people live there with you? Choose ALL that apply.

- 9. How many brothers and sisters, including stepbrothers and stepsisters, are in your family? Don't count yourself.

- 10. The main wage earner is the "breadwinner" who brings the main money support into the family. Who is the main wage earner?

- 11. How much school did the main wage earner have?



61664

1 4 0 0 4 1 2 4 0 4

12. Which public high school do you attend? Or if you currently are going to a private school, charter school, or have a district exception (GE), which high school would you otherwise be attending? If you are in grades 6th-8th, select the high school you would attend if you were in high school. The schools are alphabetically listed. If you do not know the answer, feel free to ask your teacher for assistance.

- |   |  |
|---|--|
| <input type="radio"/> Aiea High School                    | <input type="radio"/> Kohala High School                   |
| <input type="radio"/> Baldwin High School                 | <input type="radio"/> Konawaena High School                |
| <input type="radio"/> Campbell High School                | <input type="radio"/> Lahaianaluna High School             |
| <input type="radio"/> Castle High School                  | <input type="radio"/> Lanai High & Elementary School       |
| <input type="radio"/> Farrington High School              | <input type="radio"/> Laupahoehoe High & Elementary School |
| <input type="radio"/> Hana High & Elementary School       | <input type="radio"/> Leilehua High School                 |
| <input type="radio"/> Hilo High School                    | <input type="radio"/> Maui High School                     |
| <input type="radio"/> Honokaa High & Intermediate School  | <input type="radio"/> McKinley High School                 |
| <input type="radio"/> Kahuku High & Intermediate School   | <input type="radio"/> Milliani High School                 |
| <input type="radio"/> Kailua High School                  | <input type="radio"/> Moanalua High School                 |
| <input type="radio"/> Kaimuki High School                 | <input type="radio"/> Molokai High School                  |
| <input type="radio"/> Kaiser High School                  | <input type="radio"/> Nanakuli High & Intermediate School  |
| <input type="radio"/> Kalaheo High School                 | <input type="radio"/> Pahoa High & Intermediate School     |
| <input type="radio"/> Kalani High School                  | <input type="radio"/> Pearl City High School               |
| <input type="radio"/> Kapaa High School                   | <input type="radio"/> Radford High School                  |
| <input type="radio"/> Kapolei High School                 | <input type="radio"/> Roosevelt High School                |
| <input type="radio"/> Kau High & Pahala Elementary School | <input type="radio"/> Waiakea High School                  |
| <input type="radio"/> Kauai High School                   | <input type="radio"/> Wailua High School                   |
| <input type="radio"/> Keaau High School                   | <input type="radio"/> Waianae High School                  |
| <input type="radio"/> Kealahou High School                | <input type="radio"/> Waimea High School                   |
| <input type="radio"/> Kekaulike High School               | <input type="radio"/> Waipahu High School                  |

**Part B: The next questions are about your experiences in SCHOOL.**

13. Putting them all together, what were your grades like last year?

- Mostly A's    Mostly B's    Mostly C's    Mostly D's    Mostly F's

14. Now, thinking back over the past year in school, how often did you . . .

- |  | Never                 | Seldom                | Sometimes             | Often                 | Almost Always         |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| a) feel that the school work you were assigned was meaningful and important? | <input type="radio"/> |
| b) enjoy being in school?  | <input type="radio"/> |
| c) hate being in school?   | <input type="radio"/> |
| d) try to do your best work in school?                                       | <input type="radio"/> |

15. How interesting are most of your classes to you?

- Very interesting    Quite interesting    Fairly interesting    Slightly dull    Very dull

16. How important do you think the things you are learning in school are going to be for you later in life?

- Very important    Quite important    Fairly important    Slightly important    Not at all important

17. Mark the word that best describes how you feel about each sentence below.

- |   | NO!                   | no                    | yes                   | YES!                  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| a) My teachers praise me when I work hard in school.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) My teacher(s) notices when I am doing a good job and lets me know about it.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) In my school, students have a lot of chances to help decide things like class activities and rules.                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) There are a lot of chances for students in my school to talk with a teacher one-on-one.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) There are a lot of chances for students in my school to get involved with sports, clubs, and other school activities outside of class. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f) I have a lot of chances to be part of class discussions or activities.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g) My school grades are better than the grades of most students in my class.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



61664

1 4 0 0 4 1 2 4 0 4

18. How likely is it that you will do each of the following?

- a) Graduate from high school  
 b) Go to a technical or vocational school after high school  
 c) Go to college  
 d) Graduate from a four-year college

	Definitely won't	Probably won't	Probably will	Definitely will
a)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part C: These questions ask about your feelings and experiences in other parts of your life.**19. In the past year or 12 months, how many of your best friends have:

- a) been suspended from school?  
 b) sold illegal drugs?  
 c) stolen or tried to steal a motor vehicle?  
 d) been arrested?  
 e) dropped out of school?  
 f) smoked cigarettes?  
 g) tried beer, wine, or hard liquor when their parents didn't know about it?  
 h) used marijuana (hash, pot, weed, pakalolo)?  
 i) used LSD, cocaine, methamphetamine, or other illegal drugs?

	None	1 friend	2 friends	3 friends	4+ friends
a)	<input type="radio"/>				
b)	<input type="radio"/>				
c)	<input type="radio"/>				
d)	<input type="radio"/>				
e)	<input type="radio"/>				
f)	<input type="radio"/>				
g)	<input type="radio"/>				
h)	<input type="radio"/>				
i)	<input type="radio"/>				

20. In the past year or 12 months, how many times have you:

- a) been suspended from school?  
 b) sold illegal drugs?  
 c) stolen or tried to steal a motor vehicle?  
 d) been arrested?  
 e) attacked someone with the idea of seriously hurting them?  
 f) been drunk or high at school?

	Never	1-2 times	3-5 times	6-9 times	10-19 times	20-29 times	30+ times
a)	<input type="radio"/>						
b)	<input type="radio"/>						
c)	<input type="radio"/>						
d)	<input type="radio"/>						
e)	<input type="radio"/>						
f)	<input type="radio"/>						

21. How wrong do your best friends feel it would be for you to:

- a) take a handgun to school?  
 b) steal anything worth more than \$5?  
 c) pick a fight with someone?  
 d) attack someone with the idea of seriously hurting them?  
 e) stay away from school all day when your parents think you are at school?  
 f) drink alcohol regularly (once or twice a month)?  
 g) smoke cigarettes?  
 h) smoke marijuana (sometimes called pot, pakalolo, weed, grass, or hash)?  
 i) use LSD, cocaine, methamphetamine, or other illegal drugs?

	Very wrong	Wrong	A little bit wrong	Not at all wrong
a)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. How wrong do you think it is for someone your age to:

- a) take a handgun to school?  
 b) steal anything worth more than \$5?  
 c) pick a fight with someone?  
 d) attack someone with the idea of seriously hurting them?  
 e) stay away from school all day when your parents think you are at school?  
 f) drink alcohol regularly (once or twice a month)?  
 g) smoke cigarettes?  
 h) smoke marijuana (sometimes called pot, pakalolo, weed, grass, or hash)?  
 i) use LSD, cocaine, methamphetamine, or other illegal drugs?

	Very wrong	Wrong	A little bit wrong	Not at all wrong
a)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



61664

1 4 0 0 4 1 2 4 0 4

23. Mark the word that best describes how you feel about each sentence below.

	NO!	no	yes	YES!
a) Sometimes I think that life is not worth living.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) I think it is okay to take something without asking if you can get away with it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I ignore rules that get in my way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I think sometimes it's okay to cheat at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) It is okay to beat up people if they start the fight.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) I like to see how much I can get away with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) I do the opposite of what people tell me, just to get them mad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. How many times have you:

	Never	I've done it but not the past year	A few times this year	About once a month	2 or 3 times a month	Once a week or more
a) drunk four or more alcoholic drinks on one occasion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) done crazy things even if they were dangerous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) done something dangerous because someone dared you to do it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) done what feels good no matter what the consequences?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. How old were you when you FIRST:

	Never have younger	9 or 10	11	12	13	14	15	16	17 or older
a) drunk four or more alcoholic drinks on one occasion?	<input type="radio"/>								
b) got suspended or expelled from school?	<input type="radio"/>								
c) got arrested?	<input type="radio"/>								
d) attacked someone with the idea of seriously hurting them?	<input type="radio"/>								

**Part D: The next section asks about your experience with tobacco, alcohol, and other drugs. Remember your answers are a secret.**

26. How old were you when you FIRST:

	Never have younger	9 or 10	11	12	13	14	15	16	17 or older
a) smoked your first cigarette?	<input type="radio"/>								
b) tried snuff or chewing tobacco?	<input type="radio"/>								
c) tried alcohol (beer or wine - more than just a few sips, or hard liquor)?	<input type="radio"/>								
d) drank enough to get drunk?	<input type="radio"/>								
e) drank alcohol regularly (at least one or twice a month)?	<input type="radio"/>								
f) tried marijuana (hash, pot, weed, pakalolo)?	<input type="radio"/>								
g) tried inhalants (sniffed glue, breathed the contents of an aerosol spray can, or inhaled other gases or sprays) in order to get high?	<input type="radio"/>								
h) tried hallucinogens (LSD/PCP, mushrooms, acid)?	<input type="radio"/>								
i) tried cocaine (coke, blow, crack, freebase)?	<input type="radio"/>								
j) tried methamphetamine (crystal meth, batu, speed, ice, crank)?	<input type="radio"/>								
k) tried heroin or other opiates?	<input type="radio"/>								
l) tried tranquilizers (Valium) or sedatives (downers/reds, Quaaludes) without a doctor telling you to?	<input type="radio"/>								
m) tried steroids for body-building or improved athletic performance?	<input type="radio"/>								
n) tried MDMA (ecstasy, E, XTC, X, rolls)?	<input type="radio"/>								
o) tried GHB (G, liquid ecstasy, Georgia home boy)?	<input type="radio"/>								
p) tried Rohypnol (roofies, rophies, forget-me pills)?	<input type="radio"/>								
q) tried ketamine (special K, K, cat valiums, vitamin K)?	<input type="radio"/>								
r) tried prescription drugs (such as Oxycontin or Vicodin) without a doctor telling you to?	<input type="radio"/>								

Page 4



61664

1 4 0 0 4 1 2 4 0 4

27. During the last 30 days, on HOW MANY OCCASIONS (if any) have you used the following:

	0 occasions	1-2 occasions	3-5 occasions	6-9 occasions	10-19 occasions	20-39 occasions	40+ occasions
a) cigarettes?	<input type="radio"/>						
b) snuff or chewing tobacco?	<input type="radio"/>						
c) alcoholic beverages (beer, wine, or hard liquor) to drink - more than just a few sips?	<input type="radio"/>						
d) four or more alcoholic drinks on one occasion?	<input type="radio"/>						
e) marijuana?	<input type="radio"/>						
f) inhalants (sniffed glue, breathed the contents of an aerosol spray can, or inhaled other gases or sprays) in order to get high?	<input type="radio"/>						
g) hallucinogens (LSD/PCP, mushrooms, acid)?	<input type="radio"/>						
h) cocaine (coke, blow, crack, freebase)?	<input type="radio"/>						
i) methamphetamine (crystal meth, batu, speed, ice, crank)?	<input type="radio"/>						
j) heroin, methadone, other opiates?	<input type="radio"/>						
k) tranquilizers (Valium) or sedatives (downers/reds, Quaaludes)?	<input type="radio"/>						
l) steroids for body-building or improved athletic performance?	<input type="radio"/>						
m) MDMA (ecstasy, E, XTC, X, rolls)?	<input type="radio"/>						
n) GHB (G, liquid ecstasy, Georgia home boy)?	<input type="radio"/>						
o) Rohypnol (roofies, rophies, forget-me pills)?	<input type="radio"/>						
p) ketamine (special K, K, cat valiums, vitamin K)?	<input type="radio"/>						
q) prescription drugs (such as Oxycontin or Vicodin) without a doctor telling you to?	<input type="radio"/>						

28. Have you ever been offered CIGARETTES OR OTHER TOBACCO PRODUCTS:

	No	Yes, and I've accepted	Yes, and I've <u>always</u> refused
a) By your parents?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) By a brother or sister?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) By other relatives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) By friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) By strangers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Have you ever been offered ALCOHOL:

	No	Yes, and I've accepted	Yes, and I've <u>always</u> refused
a) By your parents?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) By a brother or sister?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) By other relatives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) By friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) By strangers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. Have you ever been offered DRUGS OTHER THAN TOBACCO PRODUCTS OR ALCOHOL:

	No	Yes, and I've accepted	Yes, and I've <u>always</u> refused
a) By your parents?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) By a brother or sister?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) By other relatives?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) By friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) By strangers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31. Did you ever buy ALCOHOL from:

	No	Yes
a) an employee at a store?	<input type="radio"/>	<input type="radio"/>
b) a bar?	<input type="radio"/>	<input type="radio"/>
c) a restaurant?	<input type="radio"/>	<input type="radio"/>
d) or get someone of legal age to buy for you?	<input type="radio"/>	<input type="radio"/>

32. Did you ever buy CIGARETTES OR OTHER TOBACCO PRODUCTS from:

	No	Yes
a) a vending machine?	<input type="radio"/>	<input type="radio"/>
b) an employee at a store?	<input type="radio"/>	<input type="radio"/>
c) a bar?	<input type="radio"/>	<input type="radio"/>
d) a restaurant?	<input type="radio"/>	<input type="radio"/>
e) or get someone of legal age to buy for you?	<input type="radio"/>	<input type="radio"/>



61664

1 4 0 0 4 1 2 4 0 4

33. How difficult do you think it would be for you to get each of the following, if you wanted some:

	Probably Impossible	Very Difficult	Fairly Difficult	Fairly Easy	Very Easy	I Don't Know
a) cigarettes?	<input type="radio"/>					
b) alcohol (beer, wine, or hard liquor)?	<input type="radio"/>					
c) marijuana (hash, pakalolo, pot, weed)?	<input type="radio"/>					
d) cocaine (crack, coke, blow, freebase)?	<input type="radio"/>					
e) methamphetamine (crystal meth, speed, ice, batu, crank)?	<input type="radio"/>					
f) hallucinogens (LSD/PCP, shrooms, acid)?	<input type="radio"/>					
g) ecstasy or other "club drugs" (E, XTC, G, GHB, liquid ecstasy, Rohypnol, roofies, ketamine, special K)?	<input type="radio"/>					
h) prescription drugs (such as Oxycontin or Vicodin) without a doctor telling you to?	<input type="radio"/>					

34. This question asks for your opinion on the effects of using certain drugs and other substances. How much do you think PEOPLE RISK HARMING THEMSELVES (physically or in other ways) if they:

	No Risk	Slight Risk	Moderate Risk	Great Risk	I Don't Know
a) smoke one or more packs of cigarettes per day?	<input type="radio"/>				
b) have four or more drinks of alcohol once or twice each weekend?	<input type="radio"/>				
c) use marijuana (hash, pakalolo, pot, weed) occasionally?	<input type="radio"/>				
d) use inhalants (glue, paint, sprays) to get high occasionally?	<input type="radio"/>				
e) use cocaine (crack, coke, blow, freebase) occasionally?	<input type="radio"/>				
f) use methamphetamine (crystal meth, speed, ice, batu, crank) occasionally?	<input type="radio"/>				
g) use hallucinogens (LSD/PCP, shrooms, acid) occasionally?	<input type="radio"/>				
h) use ecstasy or other "club drugs" (E, XTC, GHB, liquid ecstasy, liquid X, Rohypnol, roofies, ketamine, special K) occasionally?	<input type="radio"/>				
i) use prescription drugs (such as Oxycontin or Vicodin) without a doctor telling them to?	<input type="radio"/>				

35. During the LAST 12 MONTHS, how often have you been around the following people WHEN THEY WERE USING CIGARETTES OR OTHER TOBACCO PRODUCTS?

	Not at all	A few times a year	Once or twice a month	At least once a week	Almost every day
a) Parents	<input type="radio"/>				
b) Brothers or sisters	<input type="radio"/>				
c) Other relatives	<input type="radio"/>				
d) Your closest friends	<input type="radio"/>				
e) Other people in your neighborhood or school	<input type="radio"/>				

36. During the LAST 12 MONTHS, how often have you been around the following people WHEN THEY WERE USING ALCOHOL (even a small amount)?

	Not at all	A few times a year	Once or twice a month	At least once a week	Almost every day
a) Parents	<input type="radio"/>				
b) Brothers or sisters	<input type="radio"/>				
c) Other relatives	<input type="radio"/>				
d) Your closest friends	<input type="radio"/>				
e) Other people in your neighborhood or school	<input type="radio"/>				

37. During the LAST 12 MONTHS, how often have you been around the following people WHEN THEY WERE USING DRUGS OTHER THAN TOBACCO OR ALCOHOL?

	Not at all	A few times a year	Once or twice a month	At least once a week	Almost every day
a) Parents	<input type="radio"/>				
b) Brothers or sisters	<input type="radio"/>				
c) Other relatives	<input type="radio"/>				
d) Your closest friends	<input type="radio"/>				
e) Other people in your neighborhood or school	<input type="radio"/>				



38. How do you think YOUR CLOSE FRIENDS feel (or would feel) about your:

	Would Think It Was Cool	Would Not Care	Would Disapprove	Would Strongly Disapprove
a) smoking one or more packs of cigarettes per day?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) having four or more drinks of alcohol once or twice each weekend?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) smoking marijuana (hash, pakalolo, pot, weed) occasionally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) using cocaine (crack, coke, blow, freebase) occasionally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) using methamphetamine (crystal meth, speed, ice, batu, crank) once or twice?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) trying inhalants (glue, paint, sprays) to get high?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) using ecstasy occasionally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) using other illegal drugs (heroin, sedatives, hallucinogens, steroids)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Part E:** These questions ask about the neighborhood and community where you live.

	NO	YES	I Don't Know		
39. Are any of the following activities available in your community for people your age?					
a) Organized sports outside of school (e.g., soccer, paddling, baseball, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
b) Individual sporting facilities (e.g., rollerblading or skateboarding parks, batting cages)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
c) Boys and Girls clubs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
d) 4-H clubs or other organized agricultural, ranch, or farm-type clubs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
e) Music, dance, or other performance arts groups (e.g., hula, theater groups)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
40. Mark the word that best describes how you feel about each sentence below.	NO!	no	yes	YES!	
a) If I had to move, I would miss the neighborhood where I now live.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
b) There is crime and/or drug selling in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
c) There are fights in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
d) There are a lot of empty or abandoned buildings in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
e) There is a lot of graffiti (such as spray painting on walls without permission) in my neighborhood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
f) My neighbors notice when I am doing a good job and let me know.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
g) There are people in my neighborhood who encourage me to do my best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
h) There are people in my neighborhood who are proud of me when I do something well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
i) Adults in my neighborhood would think it was wrong for kids my age to use marijuana (sometimes called pot, pakalolo, weed, grass, hash).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
j) Adults in my neighborhood would think it was wrong for kids my age to drink alcohol.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
k) Adults in my neighborhood would think it was wrong for kids my age to smoke cigarettes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
l) If a kid drank alcohol in my neighborhood, he or she would be caught by the police.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
m) If a kid smoked marijuana in my neighborhood, he or she would be caught by the police.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
n) If a kid carried a handgun in my neighborhood, he or she would be caught by the police.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
41. About how many adults (18 and older) have you know personally who in the past year have:					
	None	1 adult	2 adults	3 or 4 adults	5+ adults
a) used marijuana, crack, cocaine, or other illegal drugs?	<input type="radio"/>				
b) sold or dealt drugs?	<input type="radio"/>				
c) done other things that could get them in trouble with the police like stealing, selling stolen goods, beating up others?	<input type="radio"/>				
d) gotten drunk or high?	<input type="radio"/>				

You are almost done  
with the survey!



61664

1 4 0 0 4 1 2 4 0 4

**Part F:** This set of questions asks about your family.

42. How wrong do your parents feel it would be for you to:
- |   | Very wrong            | Wrong                 | A little bit wrong    | Not at all wrong      |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| a) drink alcohol regularly (at least once or twice a month)?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) smoke cigarettes?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) smoke marijuana (sometimes called pot, pakalolo, weed, grass, or hash)?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) steal anything worth more than \$5?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) draw graffiti, write things, or draw pictures on buildings or other property (without the owner's permission)? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f) pick a fight with someone?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
- 
43. Would you be in trouble if your parents caught you:
- |  | No, not really        | Yes, a little         | Yes, a lot            |
|--|-----------------------|-----------------------|-----------------------|
| a) smoking cigarettes?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) drinking alcohol?   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) smoking marijuana (sometimes called pot, pakalolo, weed, grass, or hash)? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) using other illegal drugs?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) skipping school?  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
- 
44. Mark the word that best describes how you feel about each sentence below.
- |   | NO!                   | no                    | yes                   | YES!                  |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| a) My parents ask me if I've gotten my homework done.                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b) When I am not at home, one of my parents knows where I am and who I am with. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c) My parents would know if I didn't come home on time.                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d) My parents want me to call if I'm going to be late getting home.             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e) The rules in my family are clear.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| f) My family has clear rules about alcohol and drug use.                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| g) I feel very close to my mother.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| h) I share my thoughts and feelings with my mother.                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| i) I feel very close to my father.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| j) I share my thoughts and feelings with my father.                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| k) I enjoy spending time with my mother.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| l) I enjoy spending time with my father.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| m) My parents give me a lot of chances to do fun things with them.              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| n) My parents ask me what I think when making decisions that affect me.         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| o) If I had a personal problem, I could ask my mom or dad for help.             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
- 
45. How often do your parents tell you that you are doing a good job?
- |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Never or almost never | Sometimes             | Often                 | All the time          |
- 
46. How often do your parents tell you they're proud of you for something you've done?
- |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Never or almost never | Sometimes             | Often                 | All the time          |
- 
47. Have you ever used alcohol, tobacco (cigarettes), or other drugs in the past 12 months?
- No --> SKIP to #59. Do not answer Part G, 48-59  
If you have NOT used alcohol, tobacco (cigarettes), or other drugs in the past 12 months, please skip questions 48-59
- Please be sure to answer question #60 (last question on page 13)**
- Yes --> Please go to question 48 and answer all of the questions in PART G



**Part G:** These LAST questions ask you to think about your alcohol, tobacco (cigarettes), and drug use in the past 12 months. Follow the arrows when answering the questions.

Response Choices for PART G, Questions 48 - 58

NO	If the situation has <b>NEVER OCCURRED FOR YOU</b> during the past 12 months.
YES, BUT ONLY ONCE	If the situation has <b>OCCURRED ONLY ONCE FOR YOU</b> in the past 12 months.
YES, SEVERAL TIMES	If the situation has <b>OCCURRED MORE THAN ONCE IN A SINGLE MONTH OR SEVERAL TIMES WITHIN THE LAST YEAR FOR YOU.</b>

48a. Have you ever found that you used more drugs or drank more and more without getting high or drunk, or smoked more cigarettes without feeling the effects?

<input type="radio"/> No	<input type="radio"/> Yes			
↓	↓			
	48b. If YES, did this occur with:	No,	Yes, but only once	Yes, several times
	1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

49a. Have you ever spent a lot of time or energy to get drugs, alcohol, or cigarettes?

<input type="radio"/> No	<input type="radio"/> Yes			
↓	↓			
	49b. If YES, did this occur with:	No,	Yes, but only once	Yes, several times
	1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



61664

1 4 0 0 4 1 2 4 0 4

50a. Have you ever spent a lot of time or energy recovering from the effects of drugs, alcohol, or cigarettes?

No



Yes



50b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

51a. Have you ever been drunk or high on alcohol or drugs (including cigarettes) or suffered the after effects while at school or work, or while taking care of children?

No



Yes



51b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

52a. Have you ever been drinking or using drugs (including cigarettes) when involved in activities that could have increased your chances of getting hurt - for instance, using a knife, climbing, swimming, or driving a vehicle?

No



Yes



52b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



61664

1 4 0 0 4 1 2 4 0 4

53a. Have you ever found that your use of alcohol, cigarettes, or other drugs caused problems for you at school, home, work, or with friends - for instance, caused you to get lower grades, fight with parents or friends, get in trouble at work, have problems concentrating, or caused you physical problems?

No

Yes



53b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

54a. Did you ever drink more, smoke more cigarettes, or use more drugs than you thought you would?

No

Yes



54b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

55a. Has your drinking, smoking cigarettes, or using drugs ever caused you to give up things you liked - for instance, sports, work, or spending time with friends and relatives?

No

Yes



55b. If YES, did this occur with:

- 1. Alcohol
- 2. Cigarettes
- 3. Marijuana
- 4. Stimulants
- 5. Depressants or Downers
- 6. Hallucinogens
- 7. Ecstasy or other Club Drugs
- 8. Prescription Drugs

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



61664

1400412404

56a. When you stopped drinking, smoking cigarettes, or using drugs, did you ever "shake", tremble, have trouble sleeping, feel anxious or depressed, or sweat?

No



Yes



56b. If YES, did this occur with:

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

57a. Have you ever taken a drink, smoked a cigarette, or used drugs to get rid of a sick or uncomfortable feeling you got after stopping?

No



Yes



57b. If YES, did this occur with:

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

58a. Did you ever want or try to give up drinking, smoking cigarettes, or using drugs but couldn't quit?

No



Yes



58b. If YES, did this occur with:

	No,	Yes, but only once	Yes, several times
1. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Cigarettes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Marijuana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Stimulants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Depressants or Downers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Hallucinogens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Ecstasy or other Club Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Prescription Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



61664

1 4 0 0 4 1 2 4 0 4

- |  | No  | Yes   | Doesn't<br>Apply to Me                 |
|--|---|---|--|
| 59. In the past 12 months, have you EVER:  |   |   |  |
| a) received help for alcohol or other drug use from a school program or at school? | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| b) received help for alcohol or other drug use from some place other than school?  | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| c) thought you should get help for your alcohol or drug use, but didn't?           | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| d) received help for cigarette smoking from a school program or at school?         | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| e) received help for cigarette smoking from some place other than school?          | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| f) thought you should get help for your cigarette smoking, but didn't?             | <input type="radio"/>                               | <input type="radio"/>                                   | <input type="radio"/>                  |
| 60. How honestly did you answer the questions on this survey?                      |   |   |  |
| <input type="radio"/> I was very honest  | <input type="radio"/> I was honest most of the time | <input type="radio"/> I was honest only once in a while | <input type="radio"/> I was not honest |

**THANK YOU FOR  
COMPLETING  
THE SURVEY!!!**