TAPPING INTO TEEN CONCERNS, PERCEPTIONS AND BEHAVIORS
2000-2001 Multi-Community Report
Appendix

A Report of the Teen Assessment Project (TAP)
University of New Hampshire Cooperative Extension

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An Exploratory Examination of Substance Use and Related Factors by Gender

The 2000-2001 TAP Multi-Community Report provides descriptive data on youth behaviors. This appendix report examines differences by gender in some of those behaviors, specifically substance use and the factors associated with substance use.

Research has documented that there are differences in health risk behaviors according to gender. The Monitoring the Future study indicated that adolescent males had higher rates of illicit drug use, smokeless tobacco use, steroid use, and heavy drinking than did adolescent females (Johnston et al., 2003). Cigarette smoking rates were similar for adolescent males and females. Are the factors related to these health risk behaviors different for males than for females? There is a strong relationship between problem behaviors and binge drinking for males (Barnes, Welte & Hoffman, 2002). A link between parental approval of smoking and teen smoking has been seen for girls (Griffin et al., 1999). Hops et al. (1999) have shown that some of these factors do vary by gender. This report will present an exploratory examination of substance use and the accompanying factors by gender.

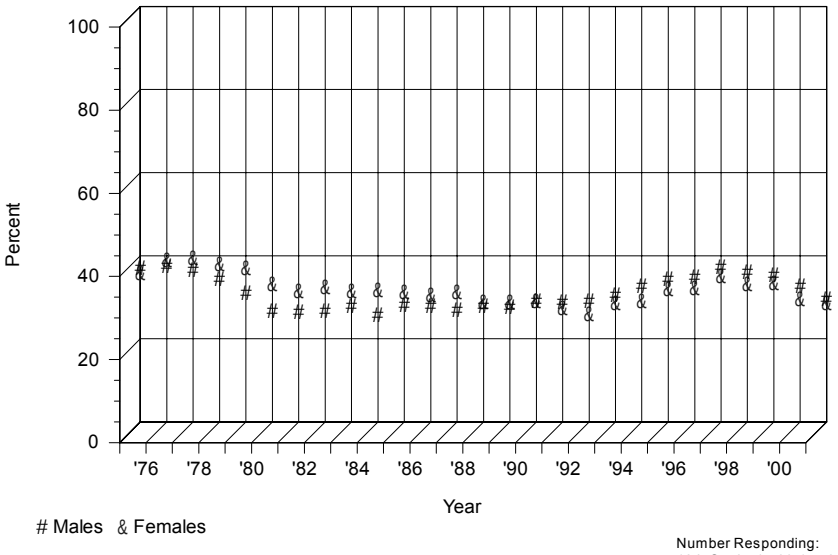
Substance Use

Background Information

As Figures A-1, A-2, and A-3 show, since the peak of substance use in the late 1970s, there has been an overall decrease in the percentage of adolescents reporting use of alcohol, tobacco and marijuana . Historically, there has been a 'gender gap' with boys reporting higher rates of substance use (SAMHSA, 2000). However, "...the traditional gender gap in substance use has decreased substantially, and it has disappeared completely for some substances, especially among younger cohorts." (Amaro et al., 2001, p. 256).

Figure A-1: Cigarettes: Trends in Thirty-Day Prevalence Use

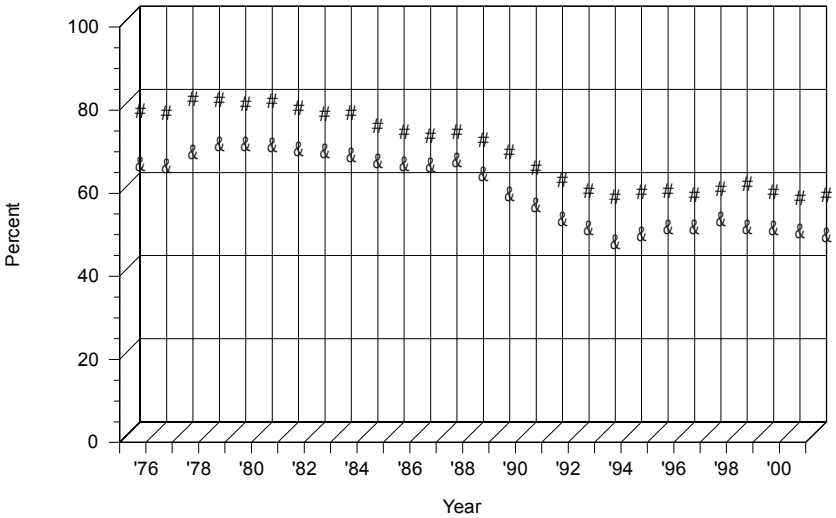
(Source: Monitoring the Future 1975-2001; National Institute on Drug Abuse)



Number Responding:
12th Grade: 9,400-17,700

Figure A-2: Alcohol: Trends in Thirty-Day Prevalence Use

(Source: Monitoring the Future 1975-2001; National Institute on Drug Abuse)



Males & Females

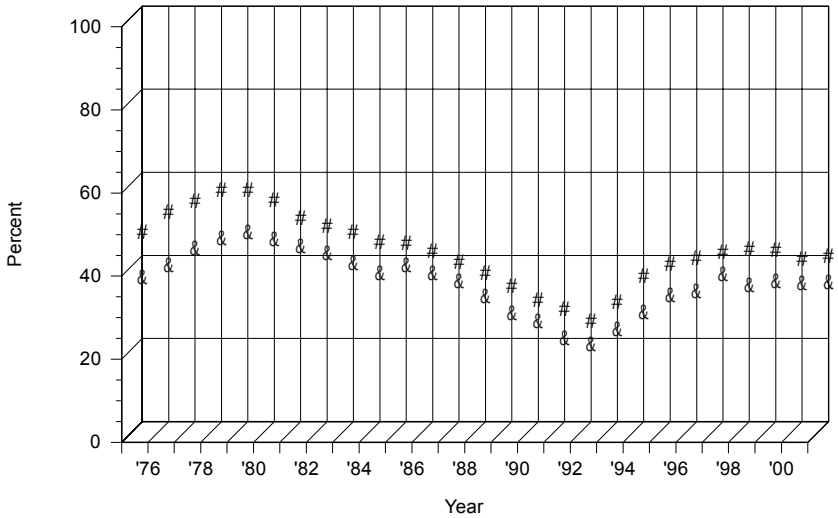
Note: In 1993, the question text was changed slightly in three of the six forms to indicate that "drink" meant more than a few sips.

Number Responding:
12th Grade: 9,400-17,700

Besides the 'gender gap' what other gender differences have been documented? A three-year investigation by the National Center on Addiction and Substance Abuse (2003) resulted in publication in February 2003 of a report entitled "The Formative Years: Pathways to Substance Abuse Among Girls and Young Women Ages 8-22." The report indicated that "...girls and young women use substances for reasons different than boys and young men, that the signals and situations of higher risk are different and that girls and young women are more vulnerable to abuse and addiction: they get hooked faster and suffer the consequences sooner than boys and young men." (National Center on Addiction and Substance Abuse, 2003, p. i).

Figure A-3: Marijuana: Trends in Annual Prevalence Use

(Source: Monitoring the Future 1975-2001; National Institute on Drug Abuse)



Males & Females

Number Responding:
12th Grade: 9,400-17,700

Research: Gender Differences in Substance Use

- Over the past forty years the percentage of girls who began using alcohol between the ages of 10-14 has increased (SAMHSA, 1997). This is important because of the link between age of initiation and later dependency (Grant & Dawson, 1997).

- Males are more likely to have a lifetime history of drug dependence (Warner et al., 1995).

- Male abusers of substances had higher rates of attention deficit with hyperactivity disorder (ADHD) or conduct disorders (CD); females had higher rates of major depressive disorder (Latimer et al., 2002)

- "...joint presence of ADHD and CD is associated with particularly high rates of substance use among early adolescents." "ADHD confers not a guarantee of negative outcome, but an increased vulnerability." (Molina, Smith & Pelham, 1999, p. 354).

- "ADHD symptomology may be the first indicator of liability toward early substance use and later abuse because it precedes the onset of aggression one of the earliest signs of conduct disorder (Molina, Smith & Pelham, 1999, p. 354).

- Females are more likely than males to report that they began using substances to cope with emotional pain (Cocoran & Cocoran, 2001).

- Girls were more likely to be diagnosed with abuse or dependence on one substance; boys with more than one (Latimer et al., 2002).

- Issues associated with substance abuse such as eating disorders, depression and sexual abuse are reported by more females than males (National Center on Addiction and Substance Abuse, 2003).

- "Girls who experience early puberty are at increased risk of using substances sooner, more often and in greater quantities than their later-maturing peers." (National Center on Addiction and Substance Abuse, 2003, p. 4).

- "Girls and boys get drugs for different reasons, get drugs from different sources, differ in their ease of obtaining substances and are targeted by the media in different ways." (National Center on Addiction and Substance Abuse, 2003, p. 57).

Teen Assessment Project (TAP) Results

Subtance Use Prevalence

Figure A-4 shows that similar percentages of males and females surveyed in NH in 2000-2001 are using at least one substance at the *any use* and at the *monthly or more use* levels. Only at the *weekly or more often* level is there a gender difference with a greater percentage of males than females reporting this.

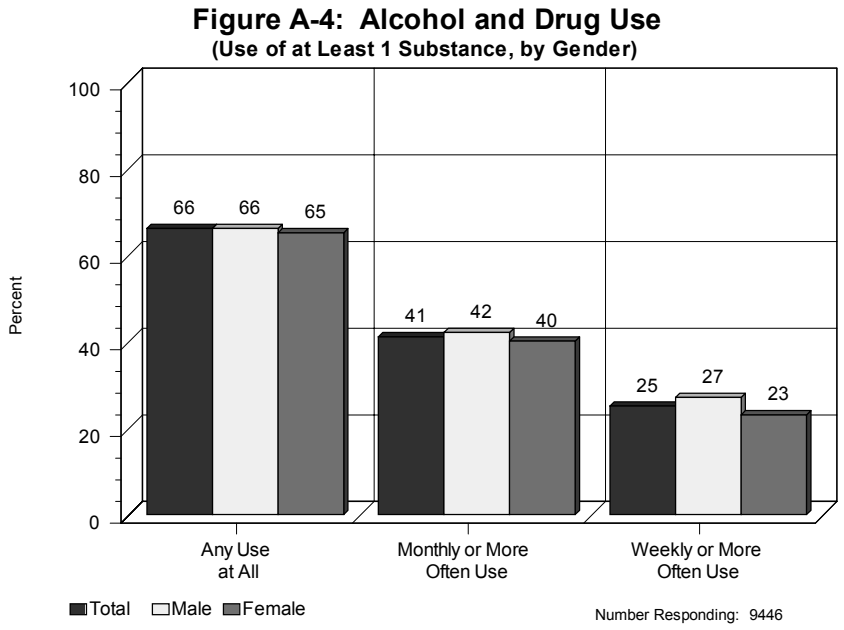


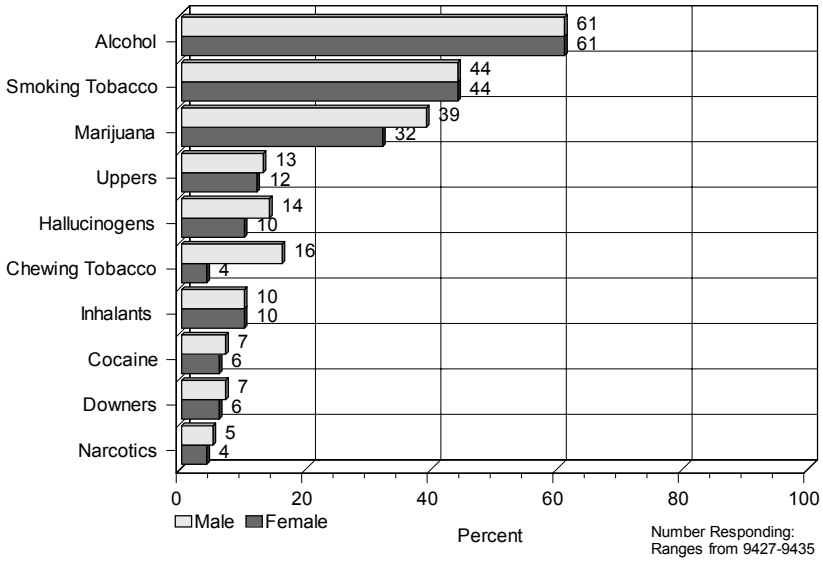
Table A-1 shows data from the Monitoring the Future Study (Johnston, O'Malley & Bachman, 2003).

Table A-1: 2002 Monitoring the Future Data: Illicit Drug Use

		Lifetime Use 2002 %			Current Use 2002 %		
	Grade	Total	Males	Females	Total	Males	Females
Any illicit drug use	8th	24.5	26.0	23.0	10.4	11.2	9.5
	10th	44.6	46.0	42.9	20.8	21.7	19.8
	12th	53.0	54.9	50.6	25.4	28.5	21.8
Illicit drug use other than marijuana	8th	13.7	12.5	14.6	4.7	4.3	4.9
	10th	22.1	20.9	23.1	8.1	7.7	8.3
	12th	29.5	30.1	27.8	11.3	11.9	10.0

Figure A-5 shows gender differences at the *any use* level. A greater percentage of males than females reported *any use* of marijuana, hallucinogens, and chewing tobacco.

Figure A-5: Alcohol and Drug Use
(Any Use at All, by Gender)



At the *monthly or more often use* level, a greater percentage of males than females report using all substances except alcohol and smoking tobacco. Figure A-6 shows these responses.

Figure A-6: Alcohol and Drug Use
(Monthly or More Often, by Gender)

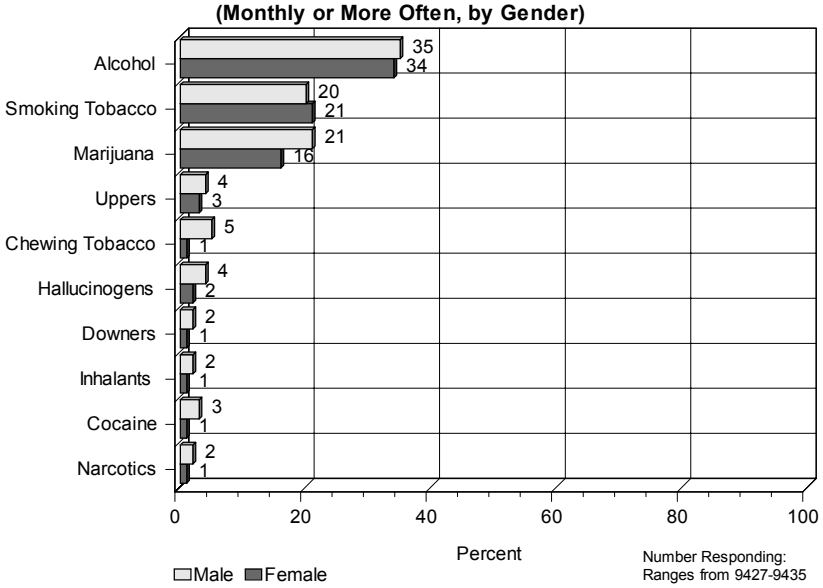
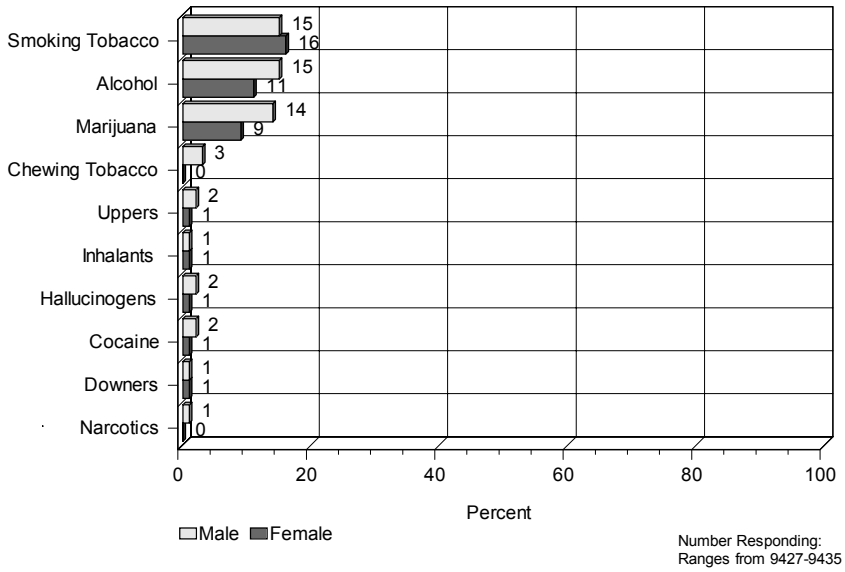


Figure A-7 shows gender differences at the *weekly or more often use* level. A greater percentage of males than females indicated that they used alcohol, marijuana, chewing tobacco, hallucinogens and cocaine at the *weekly or more often* level.

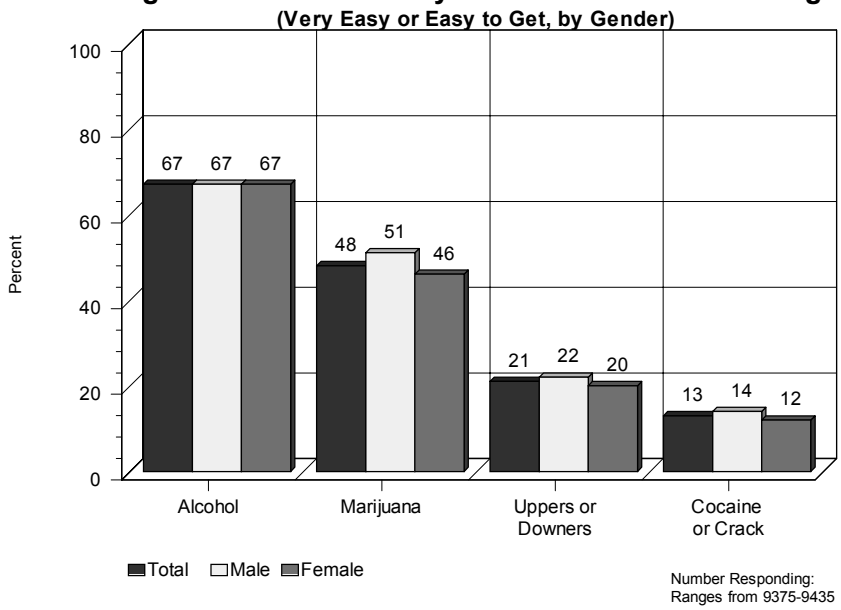
Figure A-7: Alcohol and Drug Use
(Weekly or More Often, by Gender)



Obtainability of Substances

Figure A-8 shows the percentages of youth who report getting a substance is *easy* or *very easy.* An equal percentage of males and females reported that alcohol was *easy* or *very easy* to get (males, 67%; females, 67%). A greater percentage of males than females reported that obtaining marijuana, uppers/downers, or cocaine/crack was *easy* or *very easy*.

Figure A-8: Obtainability Of Alcohol and Other Drugs
(Very Easy or Easy to Get, by Gender)



Risk Perception of Substance Use

The perception of substance use risk did vary by gender. Figure A-9 shows that a greater percentage of males than females reported *no risk or slight risk* to all the behaviors: *smoke 1 or more pack of cigarettes a day, try marijuana once or twice, smoke marijuana regularly, use inhalants, take 1-2 drinks nearly every day, and have 5 or more drinks one time each weekend.*

Figure A-9: Perceived Risk of Alcohol and Other Drug Use
(No Risk or Slight Risk, by Gender)

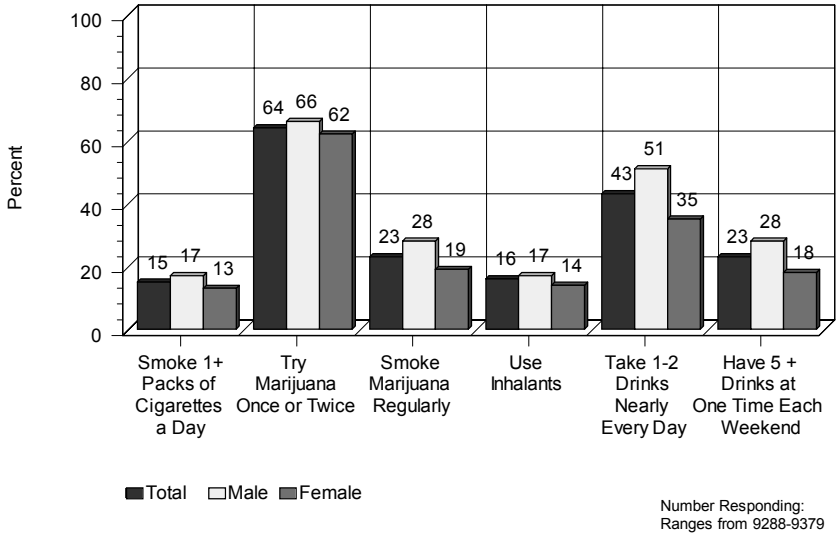
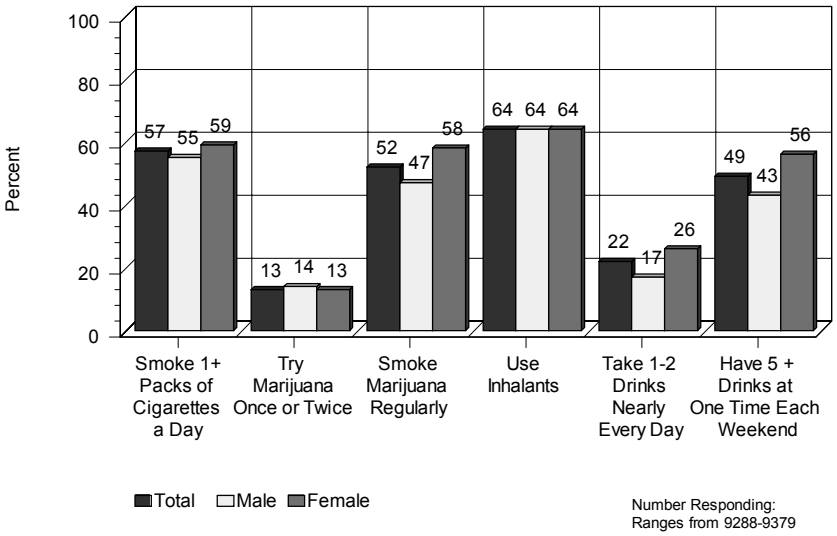


Figure A-10 shows a greater percentage of females than males indicated that such behaviors carried *great risk* with the exception of *try marijuana once or twice* and *use inhalants*. Knowledge of teen perception of risk is important. According to the Monitoring the Future results, a decrease in substance use is usually preceded by an increase in perceived risk (Johnston et al., 2003). This was specifically documented by the Monitoring the Future study when the reported percentages of 12th graders binge drinking and driving after drinking decreased during the same period that perception of risk increased.

Figure A-10: Perceived Risk of Alcohol and Other Drug Use
(Great Risk, by Gender)



Specific Substances

Alcohol

Research: Gender Differences with Alcohol

- "Boys in general had greater usual frequency and quantity of alcohol consumption than girls and began drinking at an earlier age; girls with a diagnosis of alcohol abuse/dependence had a significantly earlier mean age of alcohol disorder onset..." (Lewinsohn, Rohde & Seeley, 1996, p. 375.)

- "Female alcohol abusers are more susceptible than male alcohol abusers to health disorders, such as liver disease, cardiac problems and brain damage, which occur more quickly and with lower levels of alcohol consumption than in males."(National Center on Addiction and Substance Abuse, 2003, p. 3).

- "...one drink has the impact on women that two drinks have on men." (National Center on Addiction and Substance Abuse, 2003, p. ii).

Teen Assessment Project Results

The TAP 2000-2001 Multi-Community Report documented that the percentages of males and females who used alcohol *ever and monthly* were similar as seen in Figure A-11. However, a greater percentage of males than females reported using alcohol *weekly or more often* (males, 15%; females, 11%). Similar percentages of males and females reported that they had engaged in binge drinking (males, 35%; females, 31%).

Figure A-11: Alcohol Use
(By Gender)

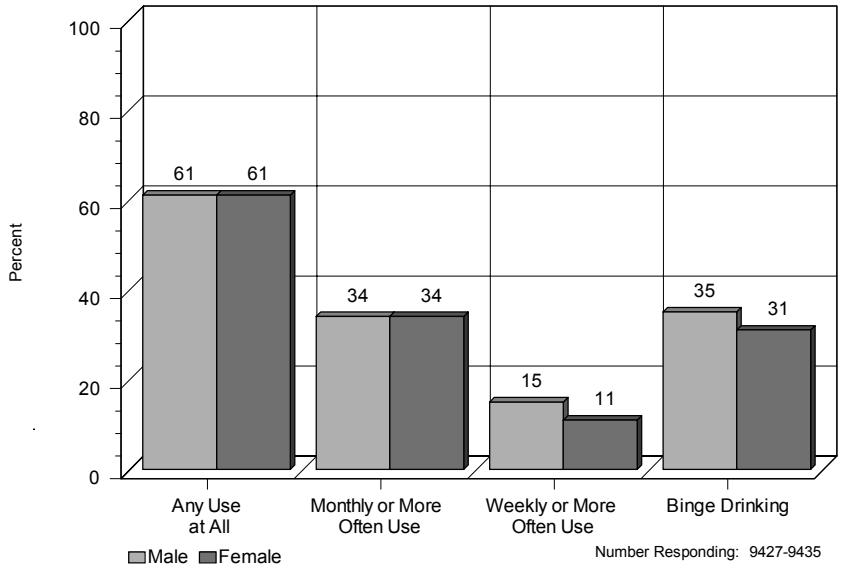


Table A-2 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table A-2: 2001 YRBS Data: Alcohol Use
(Grades 9-12 only)

Behavior	YRBS National 2001 %			YRBS N.H. 2001 %		
	Total	Male	Female	Total	Male	Female
Lifetime alcohol use (Ever had ≥ 1 drink of alcohol)	78.2	78.6	77.9	78.9	77.3	80.4
Current alcohol use (Drank alcohol on >1 of the 30 days preceding the survey)	47.1	49.2	45.0	52.5	51.9	52.9
Episodic heavy drinking (Drank ≥ 5 drinks of alcohol on ≥ 1 of the 30 days preceding the survey.)	29.9	33.5	26.4	32.1	33.7	30.7

There were differences in when males and females had their first drink of alcohol. A greater percentage of males reported their first drink at *age 10 or younger* while a greater percentage of females reported first use of alcohol at *age 13 and 14* as shown in Figure A-12.

Figure A-12: Age Students Had Their First Drink of Alcohol
(Of Those Who Drink, By Gender)

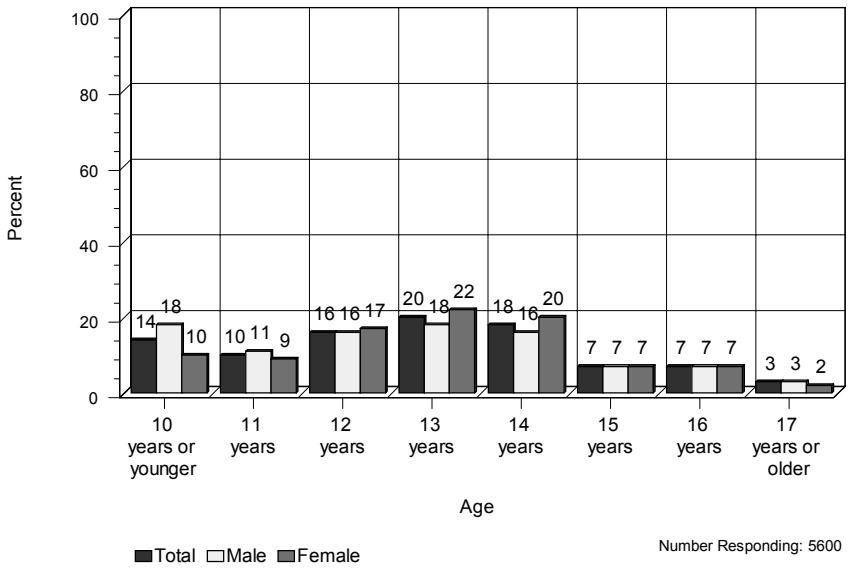
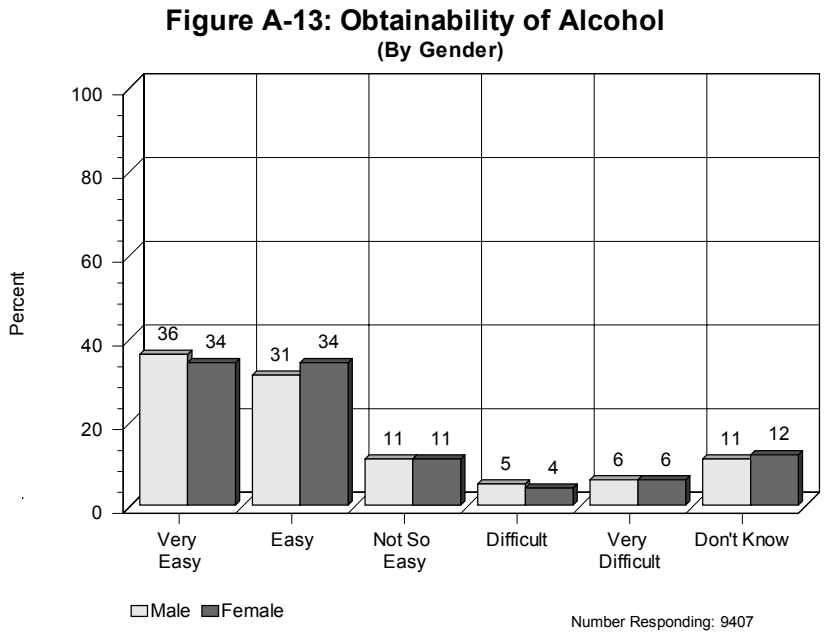


Table A-3 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table A-3: 2001 YRBS Data: Age of First Alcohol Use
(Grades 9-12 only)

Behavior	YRBS National 2001 %			YRBS N.H. 2001 %		
	Total	Male	Female	Total	Male	Female
Drank alcohol before age 13 years (other than a few sips)	29.1	34.2	24.2	28.3	33.6	23.3

Figure A-13 shows perception of obtainability of alcohol by gender. Males and females have similar perceptions of the ease of obtaining alcohol.



Some gender results around the issue of alcohol noted in the TAP 2000-2001 Multi-Community Report were:

- A greater percentage of males than females reported both that taking 1 or 2 drinks of an alcoholic beverage a day and binge drinking had *no risk* (p. 23, 26).

- Females reported getting alcohol from older friends; males indicated that they asked someone of legal age to purchase it for them (p. 31).

- The most common place for both genders to drink was at a party (p. 32).

- A greater percentage of males than females reported having driven a motorized vehicle after drinking or using drugs (p. 34).

- Males and females who indicated that *"having 5 or more drinks at one time once or twice each weekend"* carried "*great risk*" were less likely to report binge drinking in the past month (p. 27).

- Teen perception of parental consequences, values and monitoring were all related to teen monthly alcohol use for both males and females (p. 35-37).

Smoking Tobaccco
Research: Gender Differences with Smoking Tobacco

- According to the 2000 National Household Survey on Drug Abuse at least 2,000 youth become smokers every day (SAMHSA, 2002).

- The smoking rates for boys between 1965 to 1980 did not change much; for girls the rates went from 21.7 percent in 1965 to 36.2 percent in 1980. Since that time the rates have been similar for boys and girls. (SAMHSA, 2003)

- "In girls younger than 18 years, smoking initiation increased abruptly around 1967, when tobacco advertising aimed at selling specific brands to women was introduced." (Pierce, Lee & Gilpin, 1994, p. 608).

- Females are more likely to become dependent on tobacco more quickly than males (DiFranza et al., 2002).

- Girls are less likely than boys to be asked to show proof of age when buying cigarettes. (National Center on Addiction and Substance Abuse, 2003).

- More female than male middle school and high school teens reported trying to quit smoking in the past year. The majority of teens who tried to quit did not use available school or community programs (Holden et al., 2002).

- Some research suggests that adolescent girls may be more responsive to smoking cessation programs with social supports than are boys (U.S. Department of Health and Human Services, 2001).

- "Although women and men who smoke share excess risks for diseases such as cancer, heart disease, and emphysema, women also experience unique smoking-related disease risks related to pregnancy, oral contraceptive use, menstrual function and cervical cancer." (U.S. Department of Health and Human Services, 2001, p. 1).

Teen Assessment Project Results

The TAP 2000-2001 Multi-Community Report documented that the percentages of males and females who smoked tobacco *ever*, *monthly*, or *weekly* were similar as Figure A-14 shows.

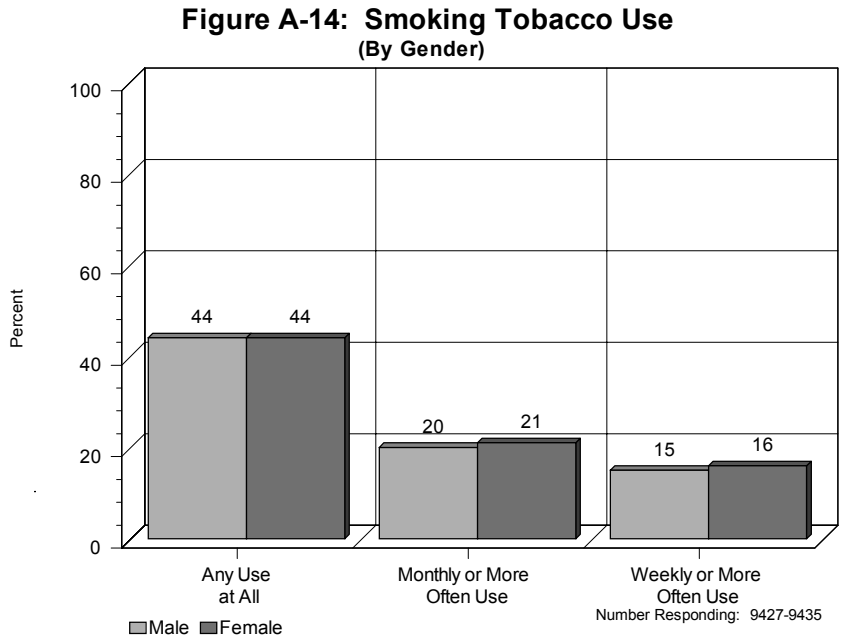


Table A-4 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table A-4: 2001 YRBS Data: Cigarette Use
(Grades 9-12 only)

Behavior	YRBS National 2001 %			YRBS N.H. 2001 %		
	Total	Male	Female	Total	Male	Female
Lifetime cigarette use (Ever tried cigarette smoking even one or two puffs)	63.9	66.3	61.6	Not Available (NA)	NA	NA
Current cigarette use (Smoked cigarettes on >1 of the 30 days preceding the survey)	28.5	29.2	27.7	Not Available (NA)	NA	NA

There were were differences in when males and females first smoked a whole cigarette as Figure A-15 shows. A greater percentage of males first smoked a whole cigarette at age 10 or younger while a greater percentage of females reported first smoking a whole cigarette at age 14.

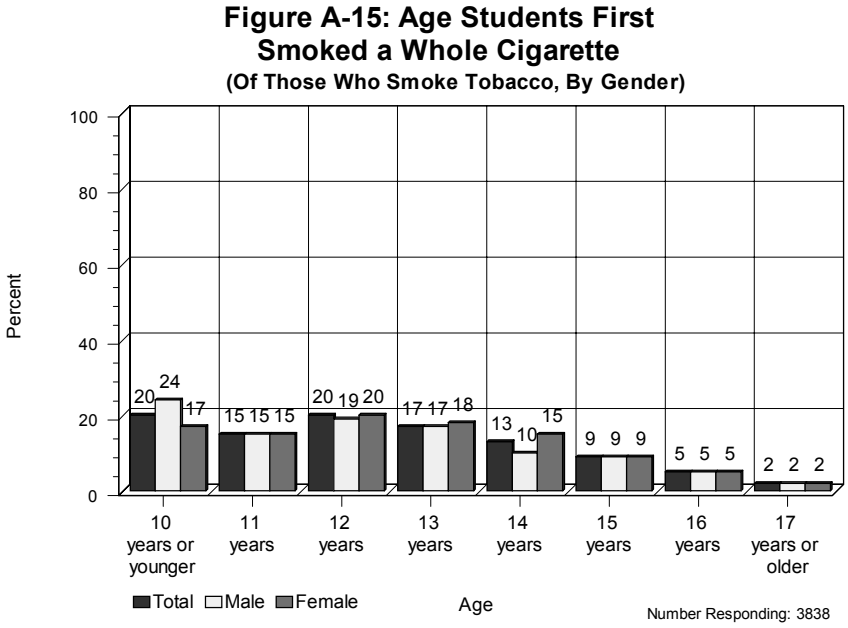


Table A-5 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table A-5: 2001 YRBS Data: Smoked A Whole Cigarette Before Age 13 (Grades 9-12 only)

Behavior	YRBS National 2001 %			YRBS N.H. 2001 %		
	Total	Male	Female	Total	Male	Female
Smoked a whole cigarette before age 13	22.1	24.5	19.8	22.7	24.7	20.6

Some gender results around the issue of tobacco noted in the TAP 2000-2001 Multi-Community Report were:

- Risk perception of substance use was related to teen monthly smoking for both males and females. Teens who indicated that smoking one or more packs of cigarettes a day carried "*great risk*" were less likely to smoke *monthly or more often* (p. 43).

- Teen perception of parental consequences, values and monitoring were all related to teen monthly smoking for both males and females (p.44-46).

Marijuana

Research: Gender Differences with Marijuana

There was little research literature examining gender differences specifically with marijuana.

- Since the 1970s rates of marijuana initiation have consistently declined among females and males in every age group except 10-14 year olds. (SAMHSA, 1997)

- High school girls who use marijuana are more likely to have considered or attempted suicide. (National Center on Addiction and Substance Abuse, 2003)

- Early onset of puberty for females is associated with early initiation of substance use, including marijuana, and continued use of substances. (Lanza & Collins, 2002)

Teen Assessment Project Results

The TAP 2000-2001 Multi-Community Report documented that a greater percentage of males than females used marijuana *ever*, *monthly*, or *weekly* as Figure A-16 shows..

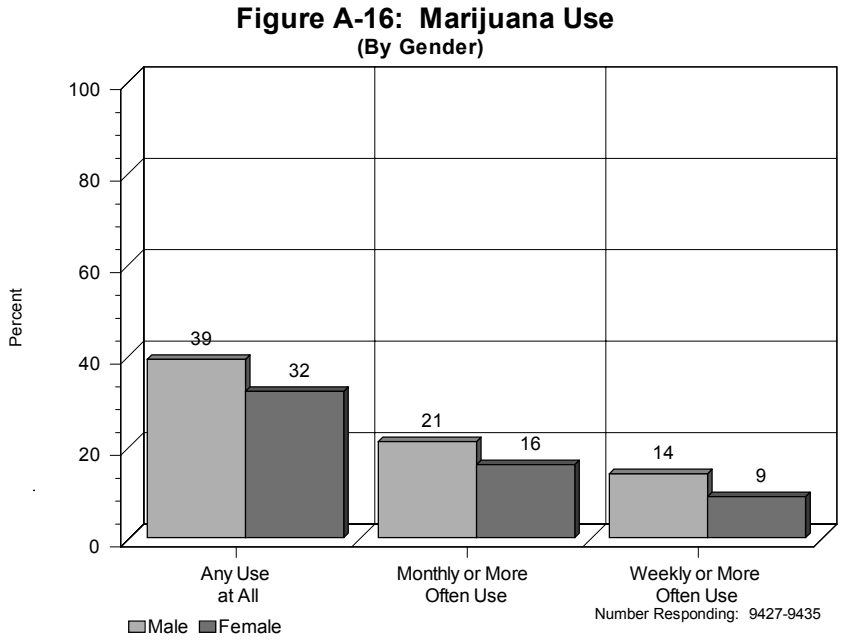
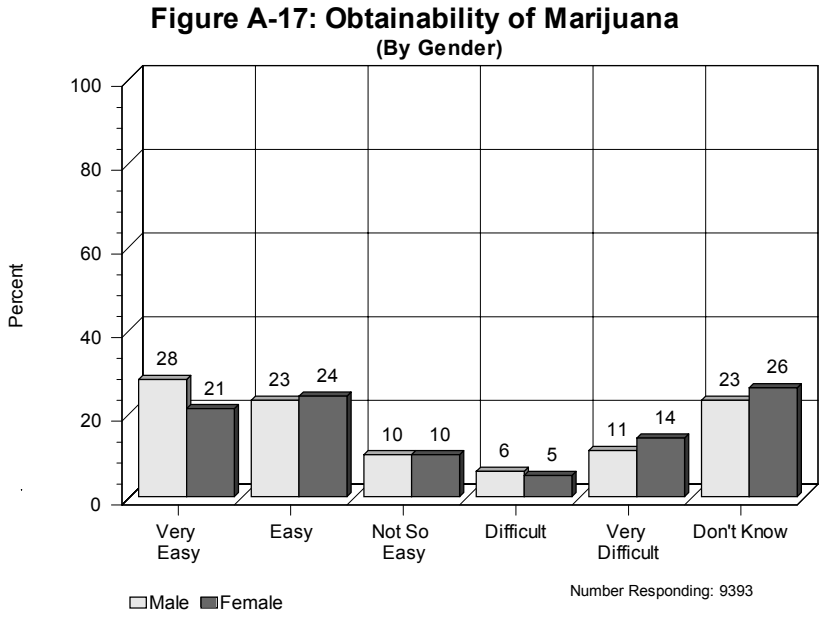


Table A-6 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table A-6: 2001 YRBS Data: Marijuana Use
(Grades 9-12 only)

Behavior	YRBS National 2001 %			YRBS N.H. 2001 %		
	Total	Male	Female	Total	Male	Female
Lifetime marijuana use (Ever used marijuana)	42.4	46.5	38.4	44.6	47.1	42.4
Current marijuana use (Used marijuana ≥ 1 times during the 30 days preceding the survey)	23.9	27.9	20.0	28.4	31.6	25.4

Figure A-17 shows gender differences in obtainability of marijuana. A greater percentage of males than females reported that marijuana was *very easy* to get whereas a greater percentage of females chose the responses *very difficult* and *don't know*.



Some gender results around the issue of marijuana noted in the TAP 2000-2001 Multi-Community Report were:

- Risk perception was related to teen monthly marijuana use for both males and females. Both males and females who indicated that *trying marijuana once or twice* carried *great risk* were less likely to try marijuana.

- Both males and females who reported that *smoking marijuana regularly* had *great risk* were less likely to use marijuana on a *monthly or more often* basis.

Multivariate Model of Substance Use

In Chapter 12 a multivariate model was created to predict use of a combination of substances: alcohol, smoking tobacco, marijuana and binge drinking. In examining gender differences in this model, the same factors will be used:

- ***Community*** (Neighborhood Support, Neighborhood Monitoring);
- ***Family*** (Parental Monitoring, Mother Support, Father Support, Mother Communication, Father Communication, Parental Attitudes, and Parental Consequences); and
- ***Youth*** (Attachment to School, Social Responsibility, Risk Perception, Worries, and Time Spent Alone or Working For Pay).

Figure A-18 shows the model for middle school males; Figure A-18 shows the model for middle school females. Generally the models are similar with the ***Family*** factor accounting for 23% of the variance for both males and females. Within that factor strong predictors for both males and females are parental monitoring, parental attitudes, and parental consequences. Higher levels of parental monitoring are related to lower levels of teen substance use. Knowing that there are consequences (e.g. getting in trouble at home) to specific behaviors such as drinking, smoking and having sexual intercourse also is related to lower levels of substance use.

The ***Youth*** factor (see components listed above) explains more variance for males than for females. This is due to the association of *time spent working for pay* that is strongly related to substance use for males but not for females. Higher levels of working for pay are associated with higher levels of substance use.

Figure A-18: Multivariate Model Predicting Substance Use
(Alcohol, Binge Drinking, Smoking, Marijuana)
(For Middle School Boys)

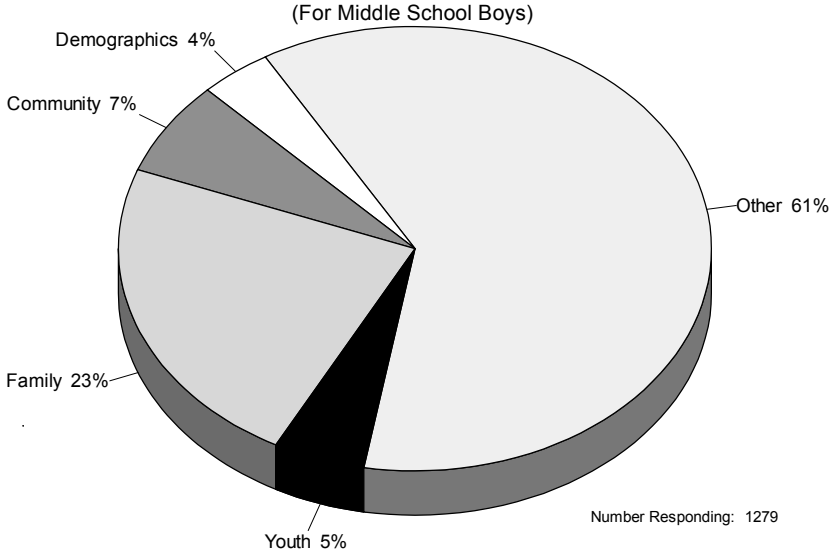
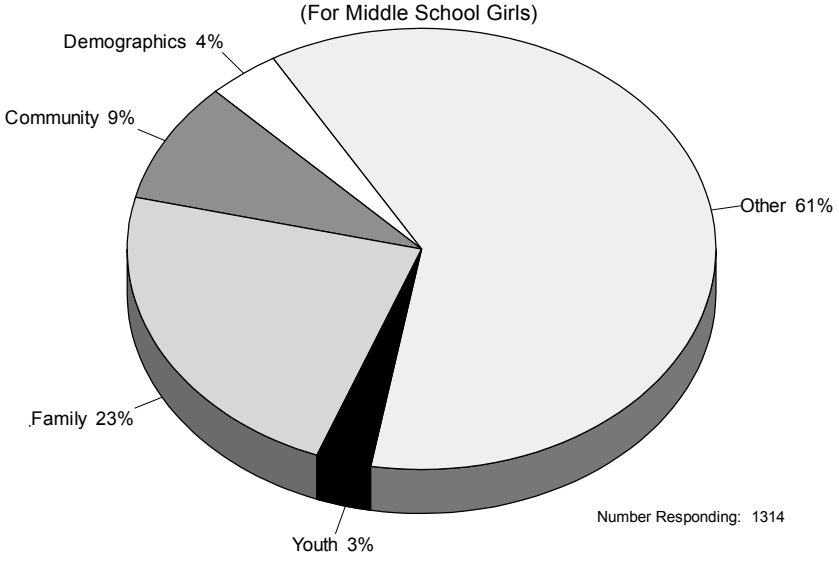


Figure A-19: Multivariate Model Predicting Substance Use
(Alcohol, Binge Drinking, Smoking, Marijuana)
(For Middle School Girls)



Models for high school youth are shown in Figures A-20 and A-21. Here the model for females explains a little more variance than does the model for males. Again, for both genders the strongest factor for prediction of substance use is the ***Family*** factor. Within that factor the strongest predictors are parental monitoring, parental attitudes, and parental consequences. Higher levels of parental monitoring are related to lower levels of teen substance use. Knowing that there are consequences (e.g. getting in trouble at home) to specific behaviors such as drinking, smoking and having sexual intercourse also was related to lower levels of substance use for both genders.

Social responsibility within the ***Youth*** factor (see components listed on page 163) is more strongly related to substance use for girls than for boys.

Figure A-20: Multivariate Model Predicting Substance Use
(Alcohol, Binge Drinking, Smoking, Marijuana)
(For High School Boys)

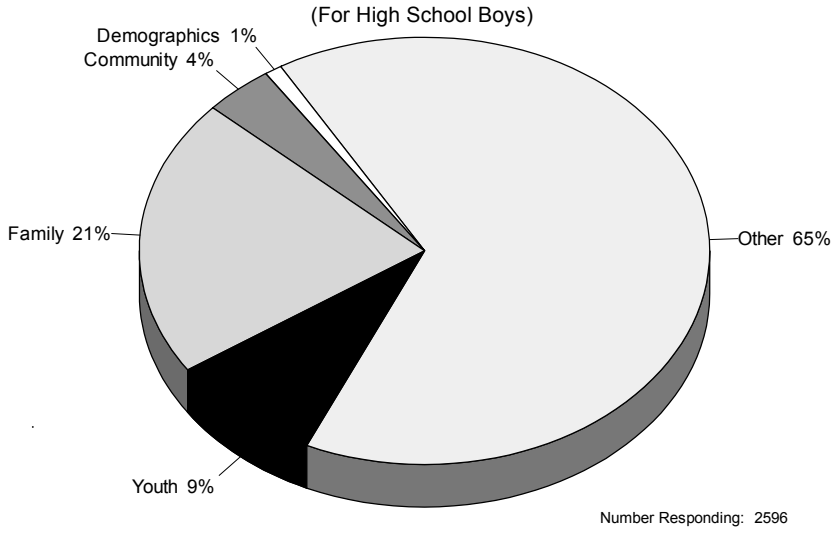
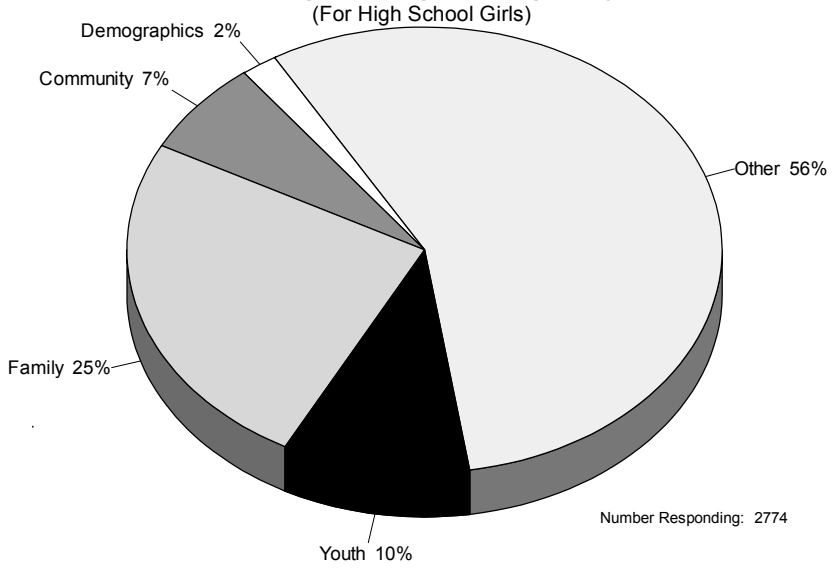


Figure A-21: Multivariate Model Predicting Substance Use
(Alcohol, Binge Drinking, Smoking, Marijuana)
(For High School Girls)



Again, this in keeping with Bronfenbrenner's (1977) work on the development of behavior within many contexts, this analysis confirms the notion that all levels of the ecological model are associated with positive adolescent behaviors. In this dataset the factors of ***Youth, Family, and Community*** were all related to teen behavior. This was true for both males and females.

For both males and females at both school levels the strongest factor related to substance use was ***Family***. This factor contained parental consequences, parental monitoring and parental attitudes. As parental monitoring increased and as certainty of parental consequences and parental attitudes about behaviors increased, substance use decreased.

These analyses are limited by the information collected. Other important variables to be included would be peer influences and how they operate with parental influences to effect behavior. Family variables such as smoking status of parents, drinking status of parents, etc. would be critical to collect. In addition, there are other youth characteristics and information about the community that would be useful in examining the question of substance use. Although this model has limitations, it does give us confirmation that the factors we looked at do make a difference. Parental monitoring and knowledge of parental consequences can be strengthened as positive youth development factors.

These analyses affirm the importance of all levels of the ecological model and identify specific positive factors for both genders. Continued examination of these issues by gender will assist in the development of appropriate prevention and intervention programs.

The Use of an Index

There is currently much research relating risk and protective factors to various adolescent behaviors. However, there is also controversy about this. The data on risk and protective factors come from non-experimental studies and thus there is no clear causal relationship. There is disagreement in how risk and protective factors are defined and measured. Bowen and Flora (2002) comment that "The potential impact on practice of this extensive and valuable body of empirical findings (on risk and protective factors), however, is weakened by inconsistent conclusions across studies. Inconsistencies are fueled by the examination of different outcomes and populations in studies, divergent conceptual and statistical definitions of risk and protection, and a failure to acknowledge that implications for prevention and intervention may differ." (Bowen & Flora, 2002, p. 526). In the development of their Student Survey of Risk and Protective Factors, and Prevalence of Alcohol Tobacco, and Other Drug Use (SSRP), Pollard et al. (1999) included risk and protective factors only if they had been used to predict drug use in at least two longitudinal studies and if they demonstrated adequate validity and reliability.

Also in debate is the importance of risk vs. protective factors. Some researchers suggest the emphasis needs to be on risk factors; others support the primary importance of protective factors, and still others use a combination of each in research. Again Bowen and Flora contend "Claims about the value of emphasizing either risk or protection over the other must be qualified by the context of the research that leads to the claims." (Bowen & Flora, 2002, p. 526).

Given those constraints then, we wanted to look more closely at the association of substance use with the positive side of the multivariate factors without calling them protective factors. This was done by creating an index of the factors, then adding the number of positive factors to examine whether the number of positive factors was related to monthly or more often substance use. Research has shown that an accumulation of protective factors can be related to positive development (Pollard et al. 1999). The usefulness of index methodology has been substantiated by research (Burchinal, Roberts, Hooper, & Zeisel, 2000). Factors chosen had been shown to be related to adolescent substance use in the multivariate model. As suggested by the 'gold standard' of adolescent research, The National Longitudinal Study of Adolescent Health (ADD Health), factors were chosen based on whether they could be "...used for assessment or are amenable to prevention and intervention efforts." (Resnick et al., 1997, p. 825).

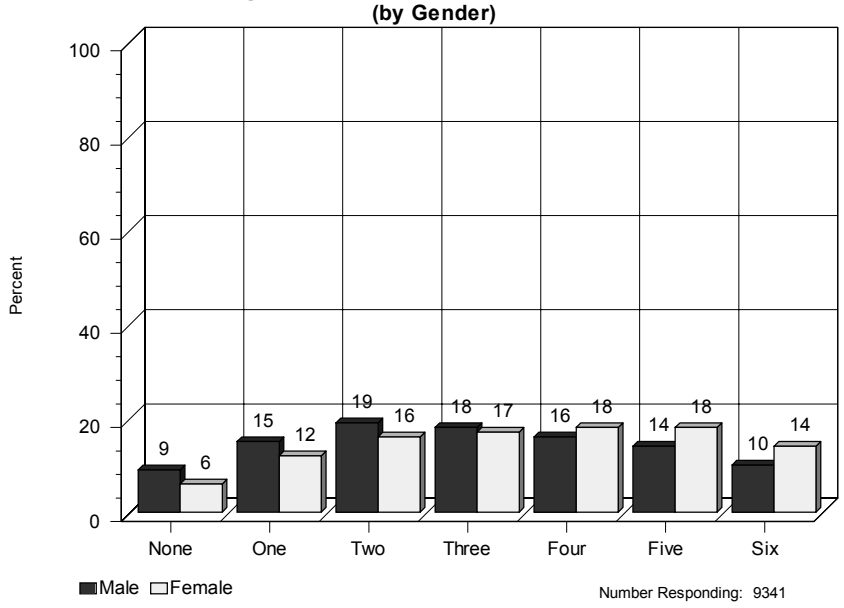
. These factors used to create the index came from each level of the ecological model:

- ***Community*** - neighborhood support;
- ***Family*** - parental monitoring, parental consequences, parental attitudes
- ***Youth*** - school attachment and risk perception of substance use.

The scores on the composites were divided using the median as the cutoff, so that each student was coded 0=below the median and 1 = above the median for each factor. The factor index was created by adding the scores on the 6 composites. Thus a student who scored above the average on all 6 factors would have a score of 6; one who scored below the average on all 6 factors would have a score of 0. The goal is to examine the association between the number of positive factors and monthly use of at least one illicit substance.

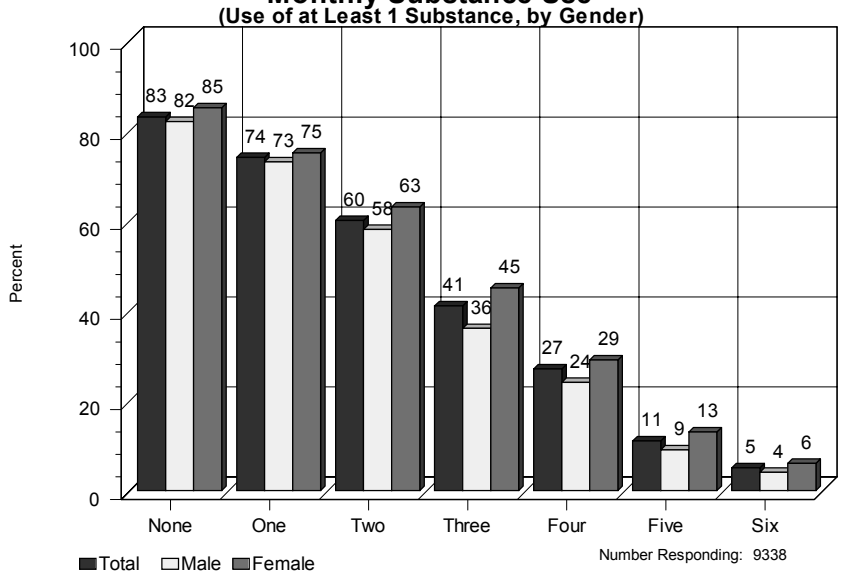
Figure A-22 shows the number of positive factors by gender. There was a difference seen here between males and females. A greater percentage of males had fewer positive factors; a greater percentage of females had 4 or more positive factors.

Figure A-22: # Positive Factors
(by Gender)



Does the number of positive factors make a difference with teen substance use? Figure A-23 shows there is an association. The percentage of teens using at least one illicit substance per month decreases as the number of positive factors increases. This is true for both genders.

Figure A-23: Link Between # Factors and Monthly Substance Use
(Use of at Least 1 Substance, by Gender)



Further examination of only the three positive family factors (parental consequences, parental attitudes and parental monitoring) and the link to monthly substance use is shown in Figure A-24. As the number of positive family factors increase, the percentage of youth using at least one substance monthly decreases. Seventy-one percent (71%) of teens with none of the three positive family factors (consequences, attitudes and monitoring) reported monthly use of at least one substance. Eleven percent (11%) of teens with all three positive family factors reported this. This result is seen for both genders.

Figure A-24: Link Between # Factors and Monthly Substance Use
(Only 3 Positive Parental Factors, by Gender)

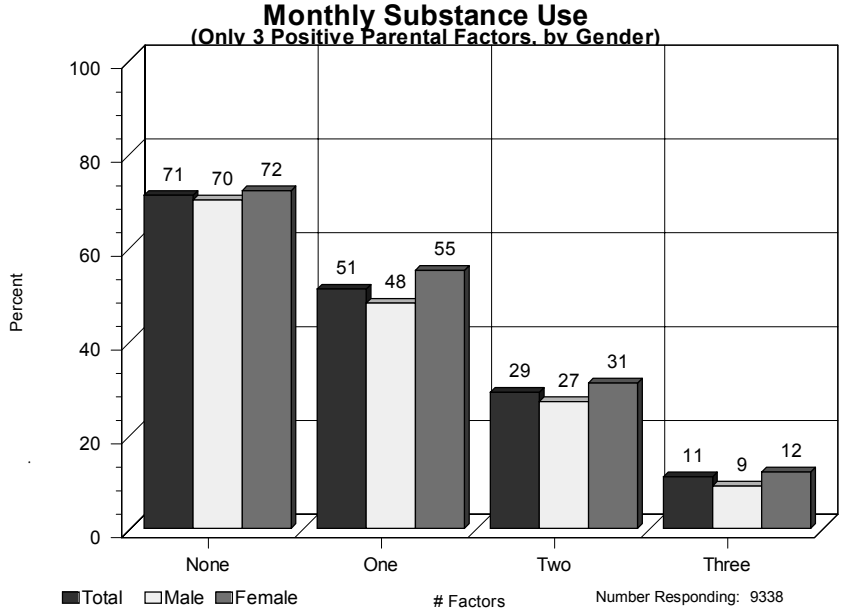
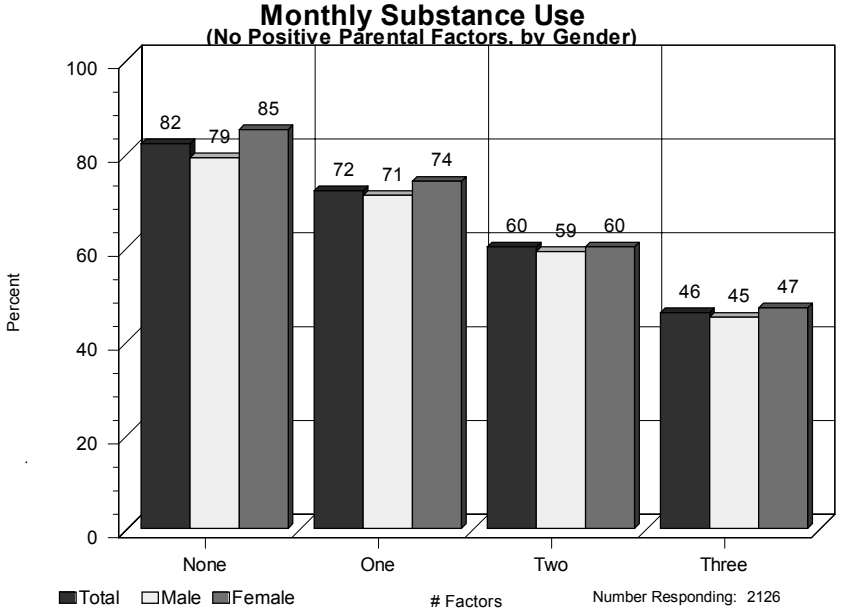


Figure A-25 shows that even when none of the three positive family factors exist, the other positive factors of neighborhood support, school attachment, and teen perception of substance use risk still matter. As the number of positive factors increases, the percentage of teens using at least one substance monthly or more often decreases. Eighty-two percent (82%) of teens with no positive factors reported use of at least one illicit substance on a *monthly or more often* basis. Forty-six percent (46%) of youth who reported none of the three positive family factors (parental consequences, parental attitudes, and parental monitoring) but three factors of neighborhood support, school attachment, and perception of substance use risk reported use of at least one illicit substance on a monthly or more often basis.

Some research suggests that cumulative protective factors may be more important to the subgroup of adolescents who are at high risk (Bowen & Flora, 2002; Vance et al., 2002). This result with TAP Multi-Community data supports the importance of other positive factors for youth even when some positive family factors are not present.

Figure A-25: Link Between # Factors and Monthly Substance Use
(No Positive Parental Factors, by Gender)



Conclusions

This exploratory examination of the issue of gender and substance use in the 2000-2001 Teen Assessment Project Multi-Community dataset reaffirms the importance of gender. The research literature has suggested the 'gender gap' in substance use has decreased. This is confirmed in the TAP dataset. Similar percentages of males and females reported using at least one illicit substance at the *any use* at all and *monthly or more often use* levels. However, a greater percentage of males reported use of alcohol and marijuana at the *weekly or more often* level. Males and females had different perceptions of risk associated with substances. Males were more likely to begin using alcohol or smoking tobacco under the age of 12; females were more likely to initiate use above the age of 12. Females reported getting alcohol from older friends; males reported asking someone of legal age to purchase it for them. A greater percentage of males than females reported driving after drinking or using drugs.

The multivariate model of examining factors at all ecological levels showed that at least in this dataset with these variables, the models for males and females looked similar. The strongest predictive factor for decreased substance use for both males and females at the middle school and at the high school level was ***Family.*** Within that factor, the characteristics of parental monitoring, parental attitudes, and parental consequences were important predictors of lower substance use.

An examination of the relationship between the number of positive factors a teen reports and *monthly or more often* substance use confirmed the importance of each level of the ecological model. By using an index of positive factors we can see that the number of positive factors a teen has is related to lower levels of *monthly or more often* substance use. This is true for both males and females. It was shown that even when a teen reports none of the positive ***Family*** factors - parental attitudes,parental monitoring, or parental consequences, lower substance use is related to the number of other positive factors present: neighborhood support, school attachment, and substance use risk. These latter factors are ones that are amenable to change, that can be addressed by prevention and intervention efforts.

Thus, although this descriptive report is not definitive, it supports the need to conduct and report data analyses by gender and to examine variables at all levels of the ecological model. The research literature suggests that there are different etiologies for initiation of substance use by gender - certain subgroups of teens who are particularly vulnerable to substance use (e.g. males with ADHD, females with depression) and that this has implications for prevention and treatment efforts. What follows are suggestions from researchers on future directions in the examination of adolescent substance use.

Future Research

"Researchers need to attend to those emerging gender trends in alcohol, tobacco, and drug use when they report epidemiologic data, and systematically to report drug use patterns by gender among youth of various age and racial and ethnic groups." (Amaro, Blake, Schwartz & Flinchbaugh 2001, p. 279)

"The public policy and research community has failed to pay sufficient attention to this population, too often focusing only on boys or failing to examine the unique motivations that prompt girls and young women to abuse substances and the accelerated consequences of such abuse."
(National Center on Addiction and Substance Abuse, 2003, p. ii)

"One reason for the limited effectiveness of prevention and treatment programs for girls and young women is that policymakers and researchers too often focus only on boys or lump girls and boys together in their studies."(National Center on Addiction and Substance Abuse, 2003, p.v)

"Researchers should routinely explore gender differences in all studies related to youth substance use; conduct more research on gender differences in biological/genetic risks and health and social consequences of all types of substance abuse; and evaluate the effectiveness of prevention and treatment programs for girls and young women." (National Center on Addiction and Substance Abuse, 2003, p. 10)

"Many studies of smoking behavior and of the health consequences of smoking have included both females and males but have not reported results by gender. Investigators should be encouraged to report gender-specific results in the future." (U.S. Department of Health and Human Services, 2001, p. 2)

Prevention and Treatment

"Substance use established by ages 14-15 can be predicted by academic and social behavior displayed at ages 7-9. This suggests that prevention efforts for alcohol and other drugs may be more effective if directed at earlier antecedent behaviors rather than those that are concurrent with substance use." (Hops et al., 1999, p. 22) *Note: Examples of pertinent academic variables included less on-task behavior and poor school adjustment/achievement. Some of the social behaviors examined were: negative interactions with peers, aggression, and less mature reaction to conflict.*

"Unisex prevention programs - largely developed without regard to gender, often with males in mind - fail to influence millions of 8- to 22- year-old females." (National Center on Addiction and Substance Abuse, 2003, p. i.) *Note: The recommendation is for promotion of programs that recognizes differences in substance use by gender, for example that girls use substances for different reasons than do boys.*

"Greater attention to gender differences in clinical trial outcomes and to addressing concerns of women smokers may aid in the development of substantially improved smoking cessation interventions for women." (Perkins, 2001, p. 392)

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An Exploratory Examination of Teen Suicide and Related Factors by Gender

The 2000-2001 TAP Multi-Community Report provides descriptive data on youth health risk behaviors. This appendix section provides an exploratory examination by gender of the health risk behavior of suicide and the factors from this dataset associated with it.

Some research suggests that important risk factors for adolescent suicide are: "...youth psychiatric disorder, a family history of suicide and psychopathology, stressful life events, and access to firearms..." (Gould et al 2003, p. 399). Child sexual abuse and same-sex sexual orientation have also been associated with adolescent suicide (Blake et al, 2001; Fergusson et al., 1996). Less information is known about possible protective factors. This appendix section will provide an exploratory examination of data on suicide and potential factors available in the Teen Assessment Project Multi-Community dataset. However, it is recognized that the first and foremost factor in adolescent suicide is an untreated or unrecognzed mental illness (Brent et al., 1999; Groholt et al., Shaffer et al., 1996).

Research: Gender Differences in Depression/Suicide

- Epidemologicaly studies suggest that approximately 2.5% of prepubertal children and up to 8.3% of adolescents in the United States have depression." (Birmaher et al., 1996)

- Before puberty more boys report depressive feelings; after puberty more females have depressive disorder (Angold & Rutter, 1992).

- Reactions to stress differ by gender with females more likely to internalize their reactions and males more likely to externalize their reactions (Leadbeater et al., 1995).

- Twice as many adolescent females as adolescent males experience major depressive disorders (Hoffman, Baldwin & Cerbone, 2003).

- One hypothesis explaining increased female adolescent prevalence of depression suggests "...the greater prevalence of preexisting risk factors for depression in girls, in combination with the greater number of social and biological challenges that girls face beginning in early adolescence, leads to the emergence of substantial gender differenes in depression." (Nolen-Hoeksema & Gircus, 1994, p. 438).

- Depressed affect is related to suicide attempts (Overholser, Freiheit & DiFilippo, 1997).

- Females are more likely to think about and to attempt suicide (Grunbaum et al, 2002).

- Five times more adolescent males than females complete the act of suicide (Anderson, 2002).

- Two factors associated with completed suicide are aggression and substance use, both more prevalent with males (Shaffer et al., 1996).

- The National Teen Suicide Audit revealed that 60% of adolescents surveyed knew of teens who had attempted suicide. (Gallup Organization, Inc., 1991).

- More adolescents who try to harm themselves do so by self-cutting than by self-poisoning. Female self-cutters were more likely than male self-cutters to explain the behavior as an attempt to punish themselves and to ease a painful state of mind. (Rodham, Hawton & Evans, 2004).

- "Most adults with a probable depressive or anxiety disorder did not receive appropriate care for their disorder." (Young, Klap, Sherbourne, & Wells, 2001).

- Exploratory research suggests regional increase in the use of antidepressants for adolescents is related to decrease in adolescent suicide. (Olfson, Shaffer, Marcus & Greenberg, 2003).

Teen Assessment Project (TAP) Results

Chapter 6 'Physical and Mental Health Issues' of the Teen Assessment Project's 2000-2001 Multi-Community Report documents some differences by gender for adolescents in grades 7-12. Figure B-1 shows some of these results. These results include:

- A greater percentage of females than males reported **ever** actually attempting suicide (p.86). Equal percentages of males and females reported having done this in the month preceding the survey (p. 87).

- A greater percentage of females than males reported worrying about getting good grades, how they look, and fitting in. Equal percentages of males and females worried about getting along with their parents (p. 78).

- The number one response when asked who they would go to with a personal problem for females was "Boyfriends/girlfriends or one of their friends". Equal percent of males chose this response or "Parent or Step-Parent' (p. 80).

- A greater percentage of females than males reported feeling depressed or very sad during the month preceding the survey (p. 81).

- Serious thoughts about suicide in the month preceding the survey were reported by a greater percentage of females than males (p. 82).

- A greater percentage of females than males reported **ever** making a plan for suicide (p. 83). Equal percentages of males and females reported having done this in the month before the survey (p. 85).

Figure B-1: Mental Health Issues

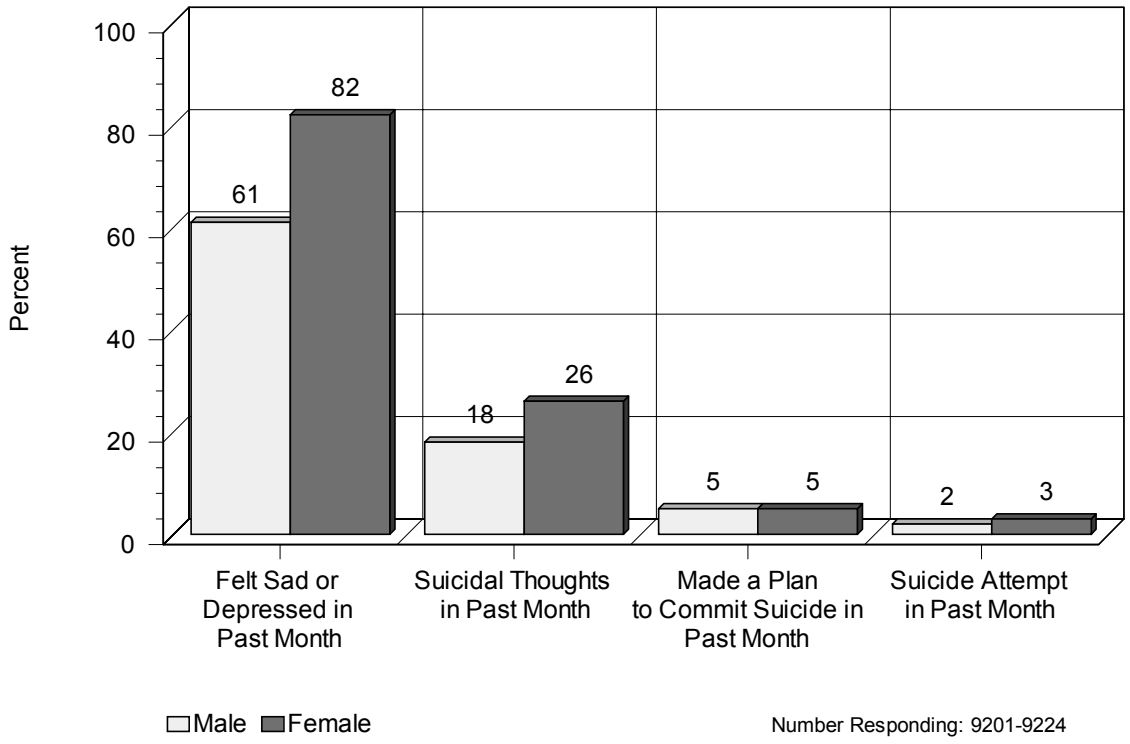

Table B-2 shows data from the Youth Risk Behavior Surveillance Survey (YRBS) published by the Centers for Disease Control and Prevention (CDC, 2002).

Table B-1: 2001 YRBS Data: Suicide
(Grades 9-12 only)

Behavior	**YRBS National 2001 %**			**YRBS N.H. 2001 %**		
	Total	Male	Female	Total	Male	Female
Seriously considered attempting suicide during the 12 months preceding the survey	19.0	14.2	23.6	21.9	17.1	26.3
Made a suicide plan (during the 12 months preceding the survey)	14.8	11.8	17.7	16.8	15.0	18.3
Attempted suicide (one or more times during the 12 months preceding the survey)	8.8	6.2	11.2	Not Available	NA	NA

Multivariate Model of Substance Use

In Chapter 12 a multivariate model was created to predict use of a combination of substances. The 2000-2001 TAP Multi-Community data was examined for predictors of teen suicide. A logistic regression model was used to examine predictors of teen suicide. However, data analysis revealed the model showed weak relationships. More useful would be a model that would include variables such as rating of clinical depression and other such risk factors that are not measured in this dataset.

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