Teen Suicide Attempts in the 1990's

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I. Introduction

Suicide is a serious and increasing health problem in the United States. Every seventeen minutes in the U.S. another life is lost to suicide. Every day 86 Americans take their own lives and over 1,500 attempt suicide, which translates to more than 30,000 suicides and 650,000 attempts annually in the U.S. Suicide is the eighth leading cause of death for all Americans and the third leading cause of death for those aged 15–24.

The rise in teen suicide has caught the attention of U.S. Surgeon General David Satcher, who launched a national campaign to combat suicide by encouraging the creation of suicide prevention programs in schools (U.S. Department of Health and Human Services 2001). This plan seeks to provide suicide-risk screening at the primary health care level and to increase the number of states requiring health insurance plans to cover mental health and substance abuse care. It also calls for reduced access to "tools of death" such as lethal drugs and guns in order to prevent spur-of-the-moment suicides. Indeed, CDC statistics show that nearly three of every five suicides in 1998 were committed with a firearm, and that among teens aged 15-19 years, firearm suicides accounted for 62% of the increase in the overall rate of suicide from 1980-1997.

Suicide rates are highest among white males and the elderly (aged 65 and over), but the rate had tripled in the past 40 years among adolescents and young adults and doubled in the past twenty years among black males aged 15-29 (Cutler et al. 2000). From 1980 to 1998, the rate increased by 14% among persons aged 15-19 years and doubled among persons aged 10-14 years (U.S. Dept. of Health & Human Services 2001). More teenagers and young adults die from suicide than from cancer, heart disease, AIDS, birth defects, pneumonia and influenza combined.

If youth suicide is an epidemic, then attempted suicide is more so. For every teen that commits suicide, 400 report attempting suicide, 100 report requiring medical attention for a suicide attempt, and 30 are hospitalized for a suicide attempt. This paper analyzes teen suicide attempts during the 1990s. In particular, it examines whether evidence regarding behaviors correlated with teen suicide attempts is consistent with the theories that teen suicide attempts are "rational" and are increased by the availability of weapons. The paper analyzes biannual data on U.S. high school students during the years 1991–1999.

II. Theoretical Reasons for Attempting Suicide

Understanding the reasons why so many youths are attempting and completing suicide could possibly lead to actions that decrease their numbers. Cutler et al. (2000) examine the economic and social roots of youth suicide attempts and completions in an attempt to explain why have youth suicide rates increased so much, even as suicide among adults and the elderly have fallen. They begin with two basic facts. First, every human experiences periods of ultimate highs and bottomless lows, and evidence suggests that highs are higher and the lows are lower for youths than for adults. Second, youths do not have financial resources to use to influence others. These two facts suggest four different theoretical explanations for youth suicide attempts and completions.

The first theory is that suicide is means of "rationally" ending one's life when the expected future utility of being alive is below the value of death (Hamermesh and Soss 1974). The rational theory emphasizes unhappiness as the main reason for suicide attempts, and implies that suicide is more likely when the variability of happiness is high,

when unhappiness is correlated over time, and when people have high discount rates (Cutler et al. 2000). An important assumption of the rational suicide theory is that most suicides are planned rather than simply spontaneous acts of passion. Therefore, suicide attempts should be correlated with other behaviors that involve a high discount rate for the future, such as drug use, risky sexual behavior, fighting, and lack of involvement in sports or exercise programs. As Cutler et al. (2000) point out, activities such as illegal drug use or early sexual intimacy may result in short term happiness but long term despair, from turbulence in relationships between adolescent sexual partners or addiction/arrest because of drug use. Once this despair sets in, teens might "rationally" choose to attempt to end their lives because they so heavily discount the future in which the despair has dissipated.

The second theory, called the instrumentality hypothesis, is that access to lethal means increases suicides. According to this theory, suicide is impulsive, and access to the appropriate method at the right time can determine whether a suicide occurs or not (Cutler et al. 2000). This theory stresses the immediate costs and benefits of suicide rather than the long-term forward thinking behavior of the rational theory. It predicts that suicides and attempts will be more likely among teens having access to guns and other weapons and in urban areas with high amounts of poverty where guns have become increasingly common. Brent et al. (1993) show that adolescents who committed suicide were about four times as likely to live in home with a gun, and thirty-two times more likely to have lived in a home where a gun was kept loaded. However, Cutler et al. (2000) find that states with the largest increase in teen suicide between 1950 and 1990 are predominantly rural states: Wyoming, South Dakota, Montana, New Mexico, and Idaho.

The third theory is that suicide attempts are strategic in the sense that they are not designed to produce death but simply to signal unhappiness to family and friends. This implies a fundamental distinction between suicide attempts and suicide completions: suicide is usually the result of a strongly held intent to end one's life, but most suicide attempts are not (Cutler et al. 2000). Because most teens have little economic power, self-injury can act as a powerful distress signal. In some cases, the signal will convince adults that children are truly unhappy, and thus parents will devote more monetary or time resources to the child. The main prediction of the strategic theory is that suicide attempts are positively related to parental resources.

The final suicide theory is the contagion theory, which holds that teen suicides and attempts are particularly influenced by suicides and attempts to which they have been exposed. Friends of a suicide victim may learn about the pain or discomfort of a particular suicidal action, and the probable effectiveness of that action. Also, attempts by one person may be more credible following a completed suicide by another. In support of this theory, (Cutler et al. 2000) find that teenagers are more likely to attempt suicide when they know someone else who has attempted suicide, and that suicides are 'clumped' across counties to an extent that suggests local spillovers.

Empirically, the authors find that the most important variable explaining the rise in youth suicide over time is the increased number of youths living with a divorced parent. Divorce rates at the county, state, and national level are highly correlated with youth suicide rates. However, whether this relationship is a manifestation of strategic or rational motivations is unclear.

III. Data and Regression Model

The data for my paper is from the biannual Youth Risk Behavior Surveys (YRBS) administered in odd years between 1991 and 1999. These surveys were established by the Centers for Disease Control and Prevention to monitor the prevalence of youth behaviors that most influence health. The surveys employ a three-stage cluster sample design to produce a nationally representative sample of students in grades 9–12. Survey participation is anonymous and voluntary, with students completing the self-administered questionnaire on a computer scanable booklet in their classrooms during a regular class period.

The number of observations in the pooled 1991–1999 data set is 49,644, representing 26,140 females and 23,504 males. Females and males are analyzed separately because the results of the Chow test indicated that female and male coefficient estimates are significantly different. The regressions use sample weights, which adjust for nonresponse and for the varying probabilities of selection including those resulting from the oversampling of black and Hispanic students.

The regression equations are of the form:

$$Y = \beta_0 + \beta_1 X + \beta_2 D + \beta_3 S + \beta_4 F + \beta_5 W + \beta_6 A + E,$$

where Y is the dependent variable, X, D, S, F, W, and A are vectors of explanatory variables, and E is the error term. Y represents two distinct binary dependent variables: whether the teen attempted suicide and whether the teen required medical treatment for a suicide attempt, both during the past year. For clarification, the only difference between the two measures is that those reporting a suicide attempt but not needing medical treatment for that attempt are coded as 1 by the former measure but 0 by the latter. I

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estimate the regressions with a probit model rather than ordinary least squares because both of these dependent variables are binary.

The X vector contains dummy indicators representing time and various demographic measures. These include indicators for each survey year between 1993–1999, each age between 14–18 (ages 12 and 13 are excluded because there are very few students of those ages), each grade level between 10–12, and whether race of the teen is black, Asian, Hispanic, or other non-white.

The D vector consists of variables that control for various forms of drug use. Alcohol consumption is measured by four variables: the age of first alcoholic drink, whether the teen ever drank alcohol and did so in the past month, and whether the teen had five or more drinks in one sitting during the past month. Cigarette and marijuana consumption are each represented by three variables analogous to the first three for alcohol above. The cocaine use controls are indicators for whether the teen used cocaine ever and in the past month. There is also an indicator for whether the teen ever injected an illegal drug.

S is a vector of four sexual activity measures: whether the teen ever had sex and had sex in the last three months, age of first sexual activity, and whether the teen ever impregnated someone or had been pregnant. F includes four indicators that control for fighting and weapons carrying: whether the teen had been in a fight and injured in a fight in the past year, and whether the teen carried a gun or any weapon in the past month. The W vector is made up of seven indicators related to weight: whether the teen is trying to gain, lose, or maintain weight (the omitted category is none of those), and whether the teen thinks he/she is very overweight, overweight, underweight, or very underweight.

Finally, the A vector includes three activity variables: the number of days in the past week the teen exercised at least twenty minutes and lifted weights, and whether the teen played on a sports team.

Since all variables other than those in the X vector are endogenous choice variables, they are likely to be determined simultaneously with suicide attempts. Thus the estimated coefficients must be interpreted as correlations between these variables and suicide attempts rather than causal effects of the explanatory variables. In addition, I observe neither parental resources nor the suicide behavior of peers. Therefore I am restricted to testing the rational and instrumentality theories. The former implies that measures of unhappiness and activities with high discount rates will have positive coefficients, while the latter suggests that weapons measures in the F vector will have positive coefficients.

IV. Results

Summary statistics, weighted according to the YRBS sample weights, are found in table 1. The percentage of respondents that attempted suicide is approximately 11% among females and 4% among males. The analogous percentages for medically treated attempts are 3% for females and 1% for males. This agrees with evidence from Cutler et al. (2000) that females are much more likely than males to attempt suicide (even though completions are higher for males). Also seen in table 1, males tend to initiate risky behavior a year earlier than females.

Table 2 is a cross-tabulation, for each gender, of suicide attempts with a separate indicator of whether a suicide attempt was planned in the past year. The corresponding

"Did" (attempt suicide) row indicates that of respondents who attempted suicide (and answered the question on planned attempts), 86% of females and 84% of males planned an attempt. Looking at table 2 by the "Did not plan" columns instead, only 2.1% of females and 0.8% of males who did not plan a suicide attempt actually attempted suicide. In contrast, of those who planned an attempt, 51% of females and 33% of females actually attempted. This suggests that suicide involves forward-looking behavior and is typically not impulsive, giving preliminary support to the rational theory.

If suicide attempts are indeed rational, then those who plan suicide must have a high discount rate for future life. This hypothesis is examined in tables 3 and 4, which gives probit marginal effects coefficients for having attempted suicide and receiving medical treatment for a suicide attempt as the dependent variable, respectively. These tables show that many of the right-hand side measures correlated with high future discount rates are also highly correlated with teen suicide attempts.

To begin with, the probability of attempting suicide is significantly lower in grades 11 and 12. This is particularly important for females. One possible reason for this purely related to the discount rate is that most students in these grades are beyond the mandatory age for being enrolled in school and therefore have chosen to stay in school, while some students in grades 9 and 10 are enrolled only because they have not yet reached the mandatory age and will choose to drop out once they do so. A related reason might be that that those in grades 11 and 12 have higher earnings potential than those in earlier grades. This is particularly true for students in grade 12, who will likely graduate from high school since the interviews are conducted between February and May. Either explanation is consistent with these results indicating that lower discount rates are

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associated with lower suicide attempt probabilities. These results are especially

convincing because a direct causal effect of education on suicide attempt probability is

unlikely.

Cigarette use is also positively correlated with teen suicide attempts. In table 3,

females who have ever smoked are 7 percentage points more likely to attempt suicide.

For males the effect is also significant but not as high. Those who smoked in the past

month and who started earlier are also more likely to attempt suicide, with effects again

being larger for females than males. However, the effects of cigarette smoking on treated

suicide attempts, as seen in Table 4, are significant only for females. Again, since

cigarette smoking is unlikely to cause suicide attempts but is a standard example of an

activity involving high future discounting, this is strong evidence that those with less

concern for the future have a higher propensity to attempt suicide.

The consumption of alcohol and illegal drugs other than marijuana is also

positively correlated with attempting suicide, although it is possible that the effects of

these behaviors are causal to the extent that their pharmacological effects directly lead to

suicide attempts. In table 3, females and males that have ever consumed alcohol

significantly increase their probability of attempting suicide by 5.8 and 1.8 percentage

points, respectively. However, results are insignificant for other alcohol measures except

past month consumption for males. Similarly, only past month binge drinking (5 or more

drinks consecutively) is significantly correlated with treated attempts in table 4. Any

previous cocaine use and illegal drug injection is highly correlated with attempts for both

females and males, with a larger cocaine effect for females and identical injection effects

for each gender, but past month use is not related to attempts. Meanwhile, for treated

attempts, lifetime cocaine use is important for females but not males, the reverse is true for past drug injection, and current drug use is important for both males and females.

Exercise measures are also correlated with suicide attempts. Each day exercising 20 minutes or more is associated with reduced suicide attempts for males but not for females. Conversely, additional days lifting weights are positively associated with attempting suicide. This may be because those who lift regularly are very self-conscious and put a lot of stress on themselves trying perfect their bodies. Another explanation is that serious lifters are oriented towards the present at the expense of the future, which is consistent with evidence that some weightlifters and bodybuilders take performance-enhancing drugs despite their possible future harm.

The rational theory also embodies the conventional wisdom that teenager unhappiness is a motive for attempted suicide. To the extent that they cause longer-term unhappiness because of association with addiction, health, and legal problems, the previously mentioned results for drug use are all consistent with this aspect of the theory even though drug use may make teens happier in the short term. Also, involvement and being injured in a fight significantly increases the probability of attempting suicide. In table 3, past year fighting increases attempt likelihood by 3.5 percentage points for females and 1.1 percentage points for males.

Other happiness variables in the model include self-perception of weight and sports team involvement. Results indicate that teens who are trying to lose weight and who believe they are very underweight or very overweight are more likely to attempt suicide. In table 3, the increased likelihood of a suicide attempt is almost 3 percentage points for females who want to lose weight and nearly 6 percent for females who believe

they are very overweight. For males being very underweight has a similar effect to being very over weight for females. Past year sports team involvement is negatively correlated with suicide attempts for males, supporting the idea that teens more involved in group or team activities are happier. However there is no relation with female attempts and treated attempts for both genders, which may be because teens who play sports put pressure on themselves to win.

The final set of happiness measures is those representing teen sexual activity and pregnancy. Of the three sex variables, only previous sexual activity for males affects suicide attempt probability. However, in table 4, previous sexual activity increases the likelihood of a treated suicide attempt by 7.6 percentage points for females and 1.5 percentage points for males. Similarly, for every year a teen waits to have sex, the probability of a treated attempt falls by .3 percentage points for females and .1 percentage points for males. Current sexual activity also increases treated attempt likelihood. Lastly, having been pregnant increases the probability of both attempts and treated attempts, while impregnating a female has much smaller effects on both but is still significant for attempts.

The results for two variables, carrying a weapon and a gun in the past month, pertain to the instrumentality theory that greater access to lethal means increases suicide attempt likelihood. In table 3, carrying a weapon increased the probability of attempting suicide by 6.6 percentage points for females and by 1.9 percentage points for females. The insignificance of the gun measure means that the type of weapon carried was not important. The table 4 results are similar but lower in magnitude, and carrying a gun is especially important for females. These results do not provide direct evidence for the

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instrumentality theory because, again, these variables are endogenous. However, the evidence is consistent with the prediction of the instrumentality theory.

The results for the year and race variables are as follows. For females, the only significant year dummy was for 1993, in which suicide attempts were higher than in 1991. For males, attempts were also higher in 1995 and (for medically treated attempts) in 1997. Asians are more likely than whites to attempt suicide but not to need treatment. Black males are slightly less likely to need treatment but otherwise blacks and whites are similar. Hispanic females are more likely to engage in both types of attempts, while Hispanic males are no more likely to attempt suicide and are less likely to need treatment. Finally, other non-whites are more likely to attempt and need medical treatment for attempts.

V. Conclusion

The objective of this project was to determine which behavior and attitudinal variables that are correlated with high discount rates for the future and/or unhappiness are also correlated with attempting suicide, and thereby test the rational and instrumental theories for teen suicide. The results of the analysis indicate that involvement in risky activities is highly correlated with teen suicide attempts. In particular, teens who use drugs and are sexually active are more likely to attempt suicide. Since these behaviors are most likely engaged in by teens with high future discounting, these results are consistent with the hypothesis that suicide attempts are rational. Also as predicted, unhappiness, as reflected here by dissatisfaction with weight, are at higher risk for

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attempting suicide. Evidence that most attempts are planned and not just acts of passion provides further support for the rational theory.

This study has three main limitations. First, because I did not control for the endogeneity of the right-hand side behavioral and attitudinal variables, the coefficients only imply correlation with rather than causal effects on attempted suicide. Second, data were insufficient to examine either the contagion or strategic suicide hypotheses. Third, survey data is clearly unable to examine completed suicides.

These limitations suggest directions for future research. Instrumental variable analysis could control for the endogeneity of selected behaviors highly correlated with teen suicide, such as sexual activity, drug use, and carrying weapons, in order to estimate a causal effect. Since the YRBS has state identifiers, state-level variables such as teen suicide rates and per capita income can be added in order to provide tests of the contagion and strategic suicide theories. Direct analysis of panel data on state suicide rates could provide further tests of all four theories as they relate to suicide completions rather than attempts.

References

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Table 1
Teen Suicide
Summary Statistics

Variable	Females (n = 26,140)		Males (n = 23,504)	
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**
Attempt suicide	.11	.31	.04	.20
Medically treated attempt	.03	.17	.01	.12
Year 1993	.24	.43	.24	.43
Year 1995	.15	.36	.16	.36
Year 1997	.22	.42	.25	.43
Year 1999	.20	.40	.19	.39
Age 14	.10	.30	.09	.28
Age 15	.23	.42	.21	.41
Age 16	.26	.44	.27	.44
Age 17	.27	.44	.26	.44
Age 18	.14	.35	.17	.37
Grade 10	.24	.43	.24	.43
Grade 11	.25	.43	.26	.44
Grade 12	.27	.45	.27	.44
Asian	.03	.17	.03	.18
Black	.12	.33	.10	.30
Hispanic	.08	.28	.08	.27
Other	.08	.27	.07	.26
Age of 1st alcohol drink	13.03	2.51	12.29	2.82
Ever consumed alcohol	.80	.40	.80	.40
Consumed alcohol in past month	.50	.50	.54	.50
5+ drinks in a row past month	.29	.45	.37	.48
Age of first cigarette	12.89	2.33	12.43	2.55
Ever smoked a cigarette	.57	.50	.58	.49
Smoked in the past month	.33	.47	.33	.47
Age first tired marijuana	14.15	1.94	13.70	2.24
Ever smoked marijuana	.37	.48	.44	.50
Used marijuana past month	.19	.39	.25	.43
Ever tried cocaine	.06	.24	.08	.28
Used cocaine past month	.02	.13	.03	.18
Ever injected illegal drug	.01	.09	.02	.14
Ever had sex	.49	.50	.51	.50
Age first had sex	14.62	1.46	14.11	1.78
Had sex in last 3 months	.37	.48	.34	.47
Been/gotten someone preg.	.08	.26	.06	.24
Been in a fight past year	.29	.45	.46	.50

Ever injured in a fight	.02	.15	.05	.21
Carried weapon past month	.07	.26	.31	.46
Carried gun past month	.01	.11	.10	.30
Trying to gain weight	.06	.25	.32	.47
Trying to lose weight	.61	.49	.23	.42
Trying to maintain weight	.17	.37	.19	.39
Think you are very overweight	.05	.23	.02	.16
Think you are overweight	.34	.47	.20	.40
Think you are underweight	.11	.32	.19	.40
Think you are very underweight	.02	.12	.02	.14
# of days you exercised in the past twenty days	3.07	2.38	4.28	2.36
# of days lifted weights in past week	2.34	2.35	3.28	.247
Played on sports team in past year	.49	.50	.67	.47

Note: statistics for ages of first alcohol drink, sexual experience, cigarette use, and marijuana use are for those who have ever engaged in the corresponding activity.
Source: YRBS from years 1991-1999.

Table 2
Teen Suicide
Plan and Attempts

Females

Attempted Suicide	Did not Plan	Planned past year	Total
Did Not	20,315	2,566	22,881
Did	444	2,650	3,094
Total	20,759	5,216	25,975

Males

Attempted Suicide	Did not Plan	Planned past year	Total
Did Not	20,515	1,771	22,286
Did	174	886	1060
Total	20,689	2,657	23,346

Table 3
Probit Marginal Effects for Teen Suicide Attempts

Independent Variable	Females	Males
Year 1993	.018**	.007*
	(.010)	(.004)
Year 1995	.0111	.019**
	(.009)	(.007)
Year 1997	.001	.006
	(.010)	(.005)
Year 1999	-.004	.006
	(.010)	(.005)
Age 14	-.025	-.011
	(.046)	(.013)
Age 15	-.036	-.004
	(.046)	(.017)
Age 16	-.032	-.005
	(.050)	(.018)
Age 17	-.029	.004
	(.052)	(.021)
Age 18	-.031	.004
	(.047)	(.022)
Grade 10	-.005	-.003
	(.009)	(.005)
Grade 11	-.039***	-.012**
	(.010)	(.005)
Grade 12	-.067***	-.013*
	(.011)	(.007)
Asian	.068***	.024***
	(.019)	(.010)
Black	-.007	.004
	(.008)	(.005)
Hispanic	.042***	.006
	(.010)	(.005)
Other	.050***	.024***
	(.016)	(.010)
Age of 1st alcohol drink	-.002**	-.001**
	(.001)	(.001)
Ever consumed alcohol	.058***	.018**
	(.012)	(.006)
Consumed alcohol in past month	.001	-.008*
	(.007)	(.005)
5+ drinks in a row past month	.001	.006
	(.007)	(.005)
Age of first cigarette	-.003**	-.001**
	(.001)	(.001)
Ever smoked a cigarette	.070***	.018**
	(.018)	(.009)
Smoked in the past month	.024***	.012***
	(.007)	(.005)
Age first tried marijuana	.001	-.012
	(.002)	(.001)

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Ever smoked marijuana	-.015	.020
	(.034)	(.016)
Smoked marijuana in the past month	.009	-.005
	(.010)	(.003)
Ever tried cocaine	.059***	.019**
	(.017)	(.011)
Used cocaine in the past month	.011	.003
	(.019)	(.008)
Ever injected illegal drug	.067**	.067***
	(.037)	(.017)
Ever had sex	.052	.030*
	(.051)	(.019)
Age first had sex	-.001	-.001
	(.051)	(.001)
Had sex in last 3 months	.006	.001
	(.009)	(.004)
Ever been pregnant	.034***	.005***
	(.012)	(.005)
Been in a fight past year	.035***	.011***
	(.007)	(.004)
Ever injured in a fight	.034*	.016*
	(.020)	(.007)
Carried weapon past month	.066***	.019***
	(.013)	(.005)
Carried gun past month	-.012	.004
	(.017)	(.005)
Trying to gain weight	.025*	-.008**
	(.014)	(.004)
Trying to lose weight	.026***	.004
	(.007)	(.006)
Trying to maintain weight	.006	-.002
	(.011)	(.004)
Think you are very overweight	.057***	.029**
	(.016)	(.006)
Think you are over weight	.007	.010**
	(.006)	(.006)
Think you are underweight	.023**	.020***
	(.010)	(.006)
Think you are very underweight	.040*	.047***
	(.023)	(.023)
# of days exercised 20+ min. in past month	-.001	-.002***
	(.002)	(.002)
# of days lifted weights in past week	.003**	.001
	(.001)	(.001)
Played on sports team in past year	-.003	-.008**
	(.006)	(.004)
Sample Size	26,140	23,504
Log Likelihood	-7,726	-3,304

Note: Standard errors are in parentheses.
*, **, *** indicate significance at the 90%, 95%, and 99% levels, respectively.
Source: YRBS for years 1991-1999.

Table 4
Probit Marginal Effects for Medically Treated Suicide Attempts

Independent Variable	Females	Males
Year 1993	.011***	.004***
	(.004)	(.002)
Year 1995	.006	.006***
	(.005)	(.004)
Year 1997	.005	.006***
	(.004)	(.003)
Year 1999	.005	.001
	(.004)	(.002)
Age 14	-.007	-.002
	(.011)	(.002)
Age 15	-.011	-.002
	(.117)	(.002)
Age 16	-.003	-.002
	(.016)	(.003)
Age 17	-.002	-.002
	(.017)	(.003)
Age 18	-.002	.001
	(.016)	(.004)
Grade 10	-.003	-.002
	(.004)	(.001)
Grade 11	-.012***	-.001
	(.003)	(.002)
Grade 12	-.017***	-.003*
	(.004)	(.001)
Asian	.002	-.001
	(.006)	(.003)
Black	.002	-.002*
	(.004)	(.001)
Hispanic	.008**	-.002*
	(.004)	(.001)
Other	.015***	.005***
	(.007)	(.003)
Age of 1st alcohol drink	-.001	-.001
	(.001)	(.001)
Ever consumed alcohol	.007	.002
	(.006)	(.002)
Consumed alcohol in past month	.002	-.001
	(.003)	(.001)
5+ drinks in a row past month	.008***	.001***
	(.003)	(.001)
Age of first cigarette	-.001	-.001**
	(.001)	(.001)
Ever smoked a cigarette	.005	.005**
	(.007)	(.003)
Smoked in the past month	.005	.003**
	(.004)	(.001)
Age first tried marijuana	.001	-.001
	(.002)	(.001)
Ever smoked marijuana	-.004	.005
	(.011)	(.004)

Smoked marijuana in past month	.004	-.001
	(.005)	(.001)
Ever tried cocaine	.011*	.003
	(.007)	(.003)
Used cocaine in the past month	.013*	.005**
	(.010)	(.004)
Ever injected illegal drug	.006	.017***
	(.008)	(.007)
Ever had sex	.076***	.015**
	(.029)	(.010)
Age first had sex	-.003***	-.001**
	(.001)	(.001)
Had sex in last 3 months	.003	.002*
	(.033)	(.001)
Ever been pregnant	.015***	.001
	(.005)	(.001)
Been in a fight past year	.006**	.002
	(.003)	(.001)
Ever injured in a fight	.018***	.006***
	(.009)	(.001)
Carried weapon past month	.011***	.004***
	(.005)	(.001)
Carried gun past month	.019**	-.001
	(.010)	(.001)
Trying to gain weight	.003	.001
	(.005)	(.001)
Trying to lose weight	-.001	.001
	(.004)	(.002)
Trying to maintain weight	-.002	.003**
	(.004)	(.002)
Think you are very overweight	.008	.001***
	(.007)	(.002)
Think you are over weight	.002	.001
	(.003)	(.002)
Think you are underweight	.003	.002*
	(.004)	(.001)
Think you are very underweight	.012	-.001
	(.013)	(.001)
# of days exercised 20+ min past month	.001	-.001**
	(.002)	(.001)
# of days lifted weights in past week	.001**	.001**
	(.001)	(.001)
Played on sports team in past year	.002	.001
	(.002)	(.001)
Sample Size	26,140	23,504
Log Likelihood	-2,898	-1,153

Note: Standard errors are in parentheses.
*, **, *** indicate significance at the 90%, 95%, and 99% levels, respectively.
Source: YRBS for years 1991-1999.