

Assessing the Effects of Peer Suicide on Youth Suicide <sup>a</sup>

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## Assessing the Effects of Peer Suicide on Youth Suicide

### **Abstract:**

With data from all waves of the National Longitudinal Survey of Adolescent Health we investigated the short-term and long-term impact of an adolescent friend's suicide on an adolescent's depression and suicidality. Results suggested a friend's suicide was associated with heightened suicide thoughts and attempts and greater depression during the first year after loss. Yet, six years later, analyses showed concurrent behaviors most relevant to explain suicidality fluctuations. Findings suggest the importance of therapeutic availability, especially during the first year, for those losing a friend to suicide.

## Introduction

During the last decade there has been an outpouring of new research on the mental health concomitants of peer suicide among adolescents. Most all of these new studies have flowed from two sources: the goal to better identify adolescent mental health problems and suicide risks and to better understand the processes associated with adolescent suicide bereavement (Prigerson, Bridge, Maciejewski, Beery, Rosenheck, Jacobs, Bierhals, Kupfer, Brent, 1999; Bridge, Day, Day, Richardson, Birmaher, Brent, 2003; Melhem, Day, Shear, Day, Reynolds, Brent, 2004; Cerel, Roberts, & Nilsen, 2005; Bearman & Moody, 2004; Brent, Moritz, Bridge, Perper & Canobbio, 1996; Lewinsohn, Rohde & Seeley, 1994; Hazell & Lewin, 1993; Gould, Velting, Kleinman, Lucas, Thomas & Chung, 2004; Borowsky, Ireland & Resnick, 2001; Ho, Leung, Hung, Lee & Tang, 2000).

Most all of this research on the mental health problems and suicide risks of peer suicide has shown short-term adverse consequences in: greater depression, higher personal suicidal ideation and attempts (Borowsky et al. 2001; Hazell & Lewin, 1993; Ho, et al. 2000; Cerel, et al. 2005; Lewinsohn, et al. 1994). In addition, Gould, et al. (2004) has shown those with friends completing suicide were more likely to adopt maladaptive coping strategies following their losses. While some of these findings were derived with small or convenience samples many were obtained from larger national or locally representative samples. Thus, the immediate impact for those reporting the loss of a friend to suicide consistently points to heightened mental health problem and elevated suicidality for these adolescents.

Less often studied and less well known are the longer-term correlates of peer suicide loss, which we have chosen as the focus for this report. Brent et al. (1996) completed a three-year followup of 166 adolescent friends with a convenience sample in Pittsburgh concluding that “exposure to suicide does not result in an increased risk of suicidal behavior among friends and acquaintances, but it has a relatively long impact in terms of increased incidence of depression, anxiety and PTSD.” In a later research conducted by Prigerson et al. (1999), drawn from this same sample, 76 respondents who were followed up 6 years on average after the suicide loss of a friend reported elevated levels of complex grief and depression, with 20 percent reporting higher scores on these dimensions. Though the long-term exposure effects of a friend’s suicide was not the avowed focus of Prigerson’s study, these results suggest persisting adverse mental health risks following the loss of a friend to suicide. Thus, we were interested in further exploring whether evidence of persisting depression and suicidality would obtain in a long-term followup of adolescents reporting the loss of a friend to suicide.

An additional complicating factor, clouding assessments of mental health and the suicidal loss of a friend, that has not been successfully addressed in most available research, including the present one, is that previous authors have not examined peer suicide attempts and deaths separately, instead merging the two into a single variable. One study found different outcomes for friends of suicide attempters and those for whose friends had completed suicides. (Hazell & Lewin, 1993). Friends of suicide completers only and attempters only did not differ from one another; however, friends of attempters only reported significantly higher levels of current depression and suicidal behavior than a low exposure (to a friend’s suicidality) group. Like much of the previous research on this question, we, unfortunately, will not be able to separately gauge the significance of these variables with our data at hand.

In the present study we sought to establish whether the effects of a friend’s suicide were enduring as well as short-lived in affecting a young person’s depression and suicidality.

One existent study, drawing upon the same data set as we have (Cerel, et al, 2005), and utilizing the Wave 1 survey exclusively, has already found confirmation for higher depression, suicide thoughts and attempts, drug use and other acts of violence for those with a friend completing or attempted suicide, compared to their peers not having this experience.

The data source we employed was the National Longitudinal Survey of Adolescent Health. This data seemed to offer an ideal testing ground for investigating the question on the enduring impact of a suicide loss. With its large, nationally representative sample of approximately 20,000 respondents who were studied three times over a 6 to 7- year period there appeared to be ample opportunities to study fluctuations in depression, suicide thoughts and attempts over this extended time span. The study collected data on the suicide loss of a friend during the past year in its first wave survey, along with measures of depression, suicidal thoughts and suicide attempts collected at each wave survey.

### **Data Source & Methods**

The National Longitudinal Survey of Adolescent Health (Add Health) was conceived as a broad-based study of adolescent health. For a fuller description of the Add Health contents and methods than we are able to offer here, please see the Add Health website (<http://www.cpc.unc.edu/adhealth>).

For this study, data were derived from all Add Health data collection points. Wave I at-home interviews, with adolescents and their parents, were collected between April and December of 1995 (N=20,745). The Wave II interviews were conducted approximately one year later at respondents' homes from 14,738 respondents. Wave III data were collected six years later, during 2001 and 2002, from 15,197 respondents. Each survey interview was conducted with automated computer-assisted interviewing technology for all psychologically-sensitive questions. Adolescents listened to questions through earphones and entered their responses directly into laptop computers, thereby minimizing interviewer or parental influences on responses.

With its many aims to study a diversity of adolescent populations and problems, Add Health purposively oversampled various groups of research interest such as: twins, adoptees with siblings who were biologically related to parents, disabled children, Black middle-class youth, Chinese, Cuban and Puerto Rican youths, among other groups. Because of these oversamplings, it was important to apply the Add Health weights to attain a nationally representative sample of US adolescents (Chantala, & Tabor, 1999; Tourangeau, & Shin, 1999). Applying the Add Health weights reduced the Wave I sample size from over 20,000 cases to 18,910. The weighted Wave II total was 13,570. Wave III weights, in turn, reduced case numbers to 14,322.

Add Health survey participation rates were high with approximately 80 percent cooperating with the Wave I hour-and-a-half long home interview. Interview participation rates dipped somewhat for Wave II, dropping to 72 percent. Yet, when one eliminates the respondents who were intentionally excluded by study design from the analysis, the Wave II interview completion rate was 90 percent. Seventy-five percent of the original weighted sample participated at Wave III (National Longitudinal Study of Adolescent Health, 2003).

The specific questions on suicidality asked at each interview consisted of the following: "During the past 12 months have you ever seriously thought about committing suicide?" "During the past 12 months how many times have you actually attempted suicide?"

Depression was measured with a 19-item CES-D depression scale (Radloff, 1977), assessing

past year experiences of depression-related phenomena, such as: *feeling the blues, experiencing loss of appetite, feeling depressed, too tired, fearful, feeling your life was a failure, not feeling happy, not feeling hopeful about the future, not feeling you were as good as other people*, and similar questions. In each wave, depression responses were highly inter-correlated. The Wave I depression scale yielded a Cronbach's alpha of .86. The Wave II depression instrument was identical to the Wave I instrument. And for Wave III, the depression scale was reduced to 10, highly inter-correlated items.

The key independent variable in this study was the experience of the loss of a friend to suicide. The friend's suicide question was divided into two parts. In the first part respondents were asked "Have any of your friends tried to kill themselves during the past 12 months. 3551 respondents answered "yes" to this question and 16,903 answered "no." In the second part, respondents were asked "have any of them succeeded?" 615 gave an affirmative answer to this question. Thus, our analysis contrasted the responses of the 615 respondents who reported losing a friend to suicide during the past 12 months against the 20,126 others who reported not having this experience. Though this question was asked in all three waves, our attention focused upon the Wave I responses.

To examine the importance of peer suicide on an adolescent's suicidality it was necessary to create multivariate models of all closely related variables likely to be associated with suicidal inclinations. Only by having such a model and testing it in a logistic regression analysis, would it be possible to adequately judge the singular importance of a friend's suicide. Otherwise, we might mistakenly conclude that a friend's suicide was related to an adolescent's suicidal thoughts when it could have been related to other closely related factors, such as their levels of depression or self-esteem.

We created our model from a number of well-known and well-documented suicide risk factors: *depression* (Resnick, Bearman, Blum, Bauman, Harris, Jones, Tabor, Beuhring, Sieving, Shew, Ireland, Bearinger, Udry, 1997; Morano, Cisler, Lemerond, 1993); *substance abuse* (Brent, 1995; Wright, 1985); *low self-esteem* (Laye-Gindu, & Schonert-Reichl, 2005); *delinquency* (Ruchkin, Schwab-Stone, Kopolov, Vermeiren, King, 2003; Langhinrichsen-Rohling, Arata, Bowers, O'Brien, Morgan, 2004); *running away from home* (Choquet & Menke, 1990); *school problems* (Richardson, Bergen, Martin, Roeger, Allison, 2005); *strained relations & conflict with parents* (Lowenstein 2005; Cassorla, 1984); *attempted suicide by a family member* (Grossman, Milligan, Deyo, 1991; Rubenstein, Halton, Kasten, Rubin, Stechlerl, 1998); *parental separation or divorce* (Wagner, Silverman, Martin, 2003).

Each of these items were included in the Add Health Survey. Depression was measured by the already described CES-D scale. We defined substance abuse as any use of illegal drugs. Self-esteem consisted of showing agreement or disagreement to a six item scale consisting of such statements as: *I have a lot to be proud of; I like myself; I feel loved and wanted; I feel as good as other people*; etc. The self-esteem scale yielded an alpha score of .83. Having run away from home was assessed by asking respondents directly if they had run away from home during the past 12 months. Delinquency was measured by a 15-point scale consisting of such items as: past year engagement in vandalism, stealing something, driving someone's car without permission, getting into a serious physical fights, selling drugs, etc; this scale yielded a Cronbach's alpha of .83. School problems were defined in two ways: first, having ever been expelled or suspended from school, and second, reporting any troubles with teachers experienced during the past year. Family suicide attempts were assessed by asking respondents if any family members tried to kill

themselves within the last 12 months. Conflicted relations with parents was measured by asking respondents if they were satisfied or not with the communication they had with their mothers and fathers. Initially we investigated other alternative survey questions to assess this: whether their parents were warm and loving, whether the R had a satisfying relationship with each, and whether their parents cared about them. Reports of satisfactory communication with parents correlated most highly with these alternative formulations. Parental divorce or separation was assessed at Wave 1 from interviews with parents who offered information on their marital status at that time.

## **Results**

In a preliminary logistic regression analysis of all 12 potential predictors we found parental divorce (and /or separation) redundant to the equation of Wave 1 suicide thoughts. While this variable showed a significant univariate association with Wave 1 suicide thoughts, it failed to offer any unique contribution among the other 11 potential predictors. Striving for parsimony we dropped this variable from all subsequent regression analyses. Table 1 shows the results of a multivariate logistic regression analysis of each of the remaining 11 potential predictor variables of Wave 1 suicide thoughts. Each of the 11 items in this model correlated significantly with suicide thoughts at Wave 1. Table 2 shows the same set of hypothesized variables predicting Wave 1 suicide attempts. Most of these predictors showed significant associations with Wave 1 suicide attempts; yet, three appeared redundant in this model: communication with mothers, fathers and school suspensions and /or expulsions. Both Tables 1 & 2 showed an unmistakable association between suicide thoughts and a friends' suicide.

Tables 1 and 2 appear here

Table 3 shows the results of the same array of presumed predictors running against Wave 2 suicide thoughts. Again, all of the items in this model, with the exceptions of running away from home, communication with mothers and teacher problems correlated significantly with Wave 2 suicide thoughts. Table 4 shows these same predictors running against Wave 2 suicide attempts. Most items still remained significant in the model of Wave 2 suicide attempts, with four exceptions: illegal drug use, communication with both parents and family suicide attempts. Again, one year later, the results demonstrated that a friends' suicide at Wave 1 still had significant associations with Wave 2 suicidality.

Table 3 and 4 appear here

Table 5 below shows the multivariate results for the associations of this same group of predictors with suicide thoughts at Wave 3. The same multivariate model that effectively accounted for suicide thoughts at Waves 1 and 2, however, cannot explain Wave 3 suicide thoughts. Pseudo R-squares ranging from between .21 to .09 for suicide thoughts at Waves 1 and 2, now assumed a value of .03, indicating the model's near complete lack of predictive power, accounted only for a negligible amount of the variance of Wave 3 suicide thoughts. Only three variables remained significant in explaining Wave 3 suicide thoughts: running away from home, a friends' suicide and low self-esteem.

Table 6 shows a very similar pattern for Wave 3 suicide attempts. With this model, none of

the eleven predictors offered any significant associations with this dependent variable. Where the predictor model yielded Pseudo R-squares for suicide attempts ranging from .22 to .14 at Wave 1 and 2, for Wave 3 the statistic receded to a value of .03. Here the predictor model became ineffectual and a friend's suicide at Wave 1 had absolutely no significant value for predicting Wave 3 attempts.

Although we were left with significant associations between a friend's suicide, running away from home at Wave 1 and their Wave 3 suicide thoughts, we suspected these associations might have been spurious ones. In order to test this supposition, we designed a new predictor model of potential correlates of Wave 3 suicidal thoughts based on respondents' Wave 3 concurrent behavior reports. If a friend's suicide at Wave 1 still remained a significant predictor when it was included in the same equation model with other Wave 3 behaviors, its credibility for having an enduring impact on suicidality might become more firmly established.

From the Wave 3 interview, we created a new 17-point delinquency scale from the Wave 3 behavior reports. We also included the Wave 3 depression measures, illegal drug use at Wave 3 and a six item self-esteem scale drawn from self-esteem questions asked at Wave 3. Included within this same model were the two remaining significant predictors from Table 5: running away from home and experiencing a friend's suicide at Wave 1.

Table 7 below displays the results. Although running away from home at Wave 1 still remained a significant predictor, a friend's suicide became non-significant when it was included in the same predictor model with current levels of delinquency, depression, drug use, and differences in self-esteem. These findings suggest that it is a redundant element when other more temporally-recent correlates are included in the same model. These findings suggest that Wave 3 suicidal thoughts are more likely to be shaped and sustained from more immediately occurring events and feelings rather than from experiences reaching back into one's past.

Table 7 appears here

We also tested our original multivariate model for how well it accounted for fluctuations in depression scores at all three wave points. Here, we applied multiple linear regression rather than logistic regression since the depression measure was an interval scale variable. This is presented in Tables 8, 9 and 10 below. The tables show analogous results to the findings obtained for suicidality. At Wave 1, our eleven-variable predictor model correlated moderately with depression scores, yielding an R-square value of .32. With this model, each variable offered unique and statistically significant contributions to the overall correlation. Though self-esteem seemed to have a dominating impact upon depression scores, a friend's suicide contributed something additional to heighten the overall R-square value. As in the previous findings for suicidality, Tables 9 and 10 show progressively declining value of this predictor model to explain the variability in Wave 2 and Wave 3 depression scores. The utility of this predictor model dropped the R-square to a value of .18 for Wave 2 depression variability, and to .06, for Wave 3, again showing it to no longer useful at that latter point. A friend's suicide still remained a statistically significant correlate at Wave 2, but offered no significant association at Wave 3.

Tables 8, 9 and 10 appear here

## Discussion

Our most important results confirmed past evidence showing that a friend's suicide has an immediate impact on encouraging greater suicidal thinking, suicidal attempts and higher depression for those experiencing this traumatic event. However, evidence from these multivariate analyses did not support the contention that enduring heightened suicidality remains an obstacle in the lives of those experiencing this type of traumatic loss. In the months immediately following such events, youth offering reports of the loss of a friend to suicide should be offered suicide risk screening as a matter of course.

The findings presented here include several limitations that should be mentioned. First, this data was collected among a representative sample of American adolescents and may not extend beyond this particular age group. Whether the findings can be applied to young adult, middle-aged and elder populations can only be ascertained after conducting analogous longitudinal comparisons among these age segments. This would represent a worthy task for future research.

Second, as the friend's suicide question was worded in the Add Health study, it did not specify whether the friend lost to suicide was a close friend or a remote one. Obviously, the bunching together of both these groups into a single category of "friend" might explain the failure for having this traumatic event exact an enduring negative impact on one's psychic life. Future research should find it helpful to clearly distinguish between the loss of any friend and a close friend to suicide. Otherwise, methodological differences between studies, reliance upon clinical patient samples and/or other sampling differences could explain why our findings may have varied from others.

Another important limitation of the present study is its failure to gauge and control the separable significances of suicide attempts and completed suicides. In the Add Health question wording no one was asked if a friend had completed suicide unless they had already affirmatively answered to a screener question on whether any friends had attempted suicide. Future research will find it helpful to delineate the suicide attempts and completed suicides within an adolescent's peer community, the numbers of friends engaging in such behaviors, the relationships of these people to the respondent, i.e. whether that person was a best friend, close friend or a peripheral associate. It will also be necessary track mental health problems and suicidality for respondents, examining whether with a given web of suicidality in friendships, whether it exerts an impact in heightening mental health problem and suicidality risks for respondents and how long that impact may have over time. Brent, et al. (1996) advanced a claim that suicidality among peripheral associates may produce greater suicide contagion effects than it may among closer associates. Hazell & Lewin's findings (1993) of more problematical mental health difficulties for suicide attempters only than for those whose friends had completed suicide only were obtained in a short-term impact assessment study. It is a moot point whether such results would obtain over a longer span when the permanent absence of the friend may be more stress-inducing than any number of past occurring suicide attempts. But, these questions are moot and can only be resolved in careful and systematic empirical research. Before any satisfactory assessments of suicide contagion in an adolescent's peer group can be made, conducting such a study as that outlined above will be needed.

Another extremely important result from the present study is the demonstration how recently occurring events stimulate suicidal inclinations in comparison with other events occurring years ago. Delinquent conduct, low self-esteem, illegal drug consumption and current depression levels act as powerful correlates to young adult suicidality. Yet, case records of completed

suicides also abundantly show the importance of traumatic events such as a friend's suicide in stimulating suicidal inclinations. Being sexually victimized by a household member, being publicly humiliated by one's peer group, experiencing rejection from a sought after romantic partner, the loss of a job or scholarship benefit, and other similar events have often acted as precipitators in completed suicides. When these events occur in the recent past, this research has shown, their impact upon suicidality is likely to be greatest. Therefore, these events must be carefully assessed, especially among those who show high suicidal risks because of their illicit drug use, low self-esteem and other risks. Possibly, future research will also benefit from gauging the relative importance of each of these different types of traumatic events in comparison to one another.

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Table 1

Logistic Regression Analysis Predicting Odds of Having Suicide Thoughts by Various Predictor

Variables at Wave 1<sup>a</sup>

Number of obs = 12,110

Wald chi2 (11) = 829.63

Pseudo R-square = .21

Suicide Thoughts  
vs. no thoughts

Independent Variables	OR/P	95%
		Confidence Intervals
Delinquency	1.17 /.001	1.10-1.25
Any illegal drug	1.94 /.001	1.61-2.35
School problems	.77/.011	.63- .94
Runaway from home	1.63/.001	1.24-2.13
Teacher problems	1.37/.004	1.11-1.70
Family attempted suicide	2.05/.001	1.42-2.96
Friend's suicide	2.99/.001	2.05-4.36
Self Esteem	1.11/.001	1.08-1.14
Good comm. w/mother	.80/.026	.65- .97
Good comm. w/father	.70/.001	.58- .84
CES-D score	1.04/001	1.03-1.04

a Based upon weighted data

OR = Adjusted Odds Ratio

P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 2

Logistic Regression Analysis Predicting Odds of Making Suicide Attempts by Various Predictor

Variables at Wave 1<sup>a</sup>

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	Number of obs = 12,125	
	Wald chi2 (11) = 383.69	
	Pseudo R-square = .22	
	Suicide Attempts vs. no attempts	
	<hr/>	
	<b>95%</b>	
	<b>Confidence</b>	
	<b>Intervals</b>	
<b>Independent Variables</b>	<b>OR/P</b>	
Delinquency	1.15 /.017	1.03-1.29
Any illegal drug	2.38 /.001	1.68-3.39
School problems	.73/.074	.51-1.03
Runaway from home	2.43/.001	1.70-3.49
Teacher problems	1.63/.006	1.15-2.32
Family attempted suicide	2.59/.001	1.69-3.97
Friend's suicide	2.47/.001	1.50-4.09
Self Esteem	1.11/.001	1.06-1.16
Good comm. w/mother	.94/.727	.67-1.32
Good comm. w/father	.94/.710	.69-1.28
CES-D score	1.02/001	1.02-1.04

a Based upon weighted data  
 OR = Adjusted Odds Ratio  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 3

Logistic Regression Analysis Predicting Odds of Having Suicide Thoughts by Various Predictor

Variables at Wave 2<sup>a</sup>

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		Number of obs = 8,806 Wald chi2 (11) = 315.90 Pseudo R-square = .09
		Suicide Thoughts vs. no thoughts
		<hr/> <b>95% Confidence Intervals</b>
<b>Independent Variables</b>	<b>OR/P</b>	
Delinquency	1.09/.012	1.02-1.17
Any illegal drug	1.38 /.005	1.10-1.74
School problems	.78/.044	.62- .99
Runaway from home	1.38/.062	1.02-1.86
Teacher problems	1.20/.145	.94-1.54
Family attempted suicide	1.63/.021	1.08-2.47
Friend's suicide	1.79/.008	1.17-2.76
Self Esteem	1.07/.001	1.04-1.11
Good comm. w/mother	.89/.344	.70-1.13
Good comm. w/father	.69/.001	.56- .86
CES-D score	1.02/001	1.02-1.03

a Based upon weighted data  
 OR = Adjusted Odds Ratio  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 4

Logistic Regression Analysis Predicting Odds of Making Suicide Attempts by Various

Predictor Variables at Wave 2 <sup>a</sup>

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		Number of obs = 8,839 Wald chi2 (11) = 244.90 Pseudo R-square = .14
		Suicide Attempts vs. no attempts
<hr/>		
		<b>95% Confidence Intervals</b>
<b>Independent Variables</b>	<b>OR/P</b>	
Delinquency	1.16 /.014	1.03-1.31
Any illegal drug	1.26 /.256	.85-1.87
School problems	.50/.001	.34- .74
Runaway from home	1.90/.003	1.24-2.90
Teacher problems	1.65/.009	1.13-2.39
Family attempted suicide	1.68/.071	.96-2.95
Friend's suicide	2.54/.002	1.40-4.61
Self Esteem	1.07/.005	1.02-1.12
Good comm. w/mother	1.18/.406	.80-1.75
Good comm. w/father	.72/.062	.51-1.02
CES-D score	1.03/001	1.02-1.04

a Based upon weighted data  
 OR = Adjusted Odds Ratio  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 5

Logistic Regression Analysis Predicting Odds of Having Suicide Thoughts by Various Predictor

Variables at Wave 3 <sup>a</sup>

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		Number of obs = 9,375 Wald chi2 (11) = 80.67 Pseudo R-square = .03
		Suicide Thoughts vs. no thoughts
		<hr/> <b>95% Confidence Intervals</b>
<b>Independent Variables</b>	<b>OR/P</b>	
Delinquency	1.09 /.065	.99-1.20
Any illegal drug	1.09 /.555	.82-1.44
School problems	.86/.305	.64-1.15
Runaway from home	1.76/.012	1.13-2.73
Teacher problems	1.16/.358	.85-1.58
Family attempted suicide	.99/.964	.58-1.69
Friend's suicide	2.01/.006	1.22-3.33
Self Esteem	1.05/.017	1.01-1.09
Good comm. w/mother	.91/.539	.68-1.23
Good comm. w/father	.82/.145	.63-1.07
CES-D score	1.00/168	.99-1.01

a Based upon weighted data  
 OR = Adjusted Odds Ratio  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

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Table 6

Logistic Regression Analysis Predicting Odds of Making Suicide Attempts by Various Predictor

Variables at Wave 3 <sup>a</sup>

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	Number of obs = 9,484	
	Wald chi2 (11) = 31.67	
	Pseudo R-square = .03	
	Suicide Attempts vs. no attempts	
	<hr/>	
	<b>95%</b>	
	<b>Confidence</b>	
	<b>Intervals</b>	
<b>Independent Variables</b>	<b>OR/P</b>	
Delinquency	1.18 /.083	.98-1.43
Any illegal drug	.88 /.659	.49-1.58
School problems	1.07/.801	.64-1.78
Runaway from home	.99/.996	.47-2.11
Teacher problems	.80/.489	.43-1.49
Family attempted suicide	1.16/.724	.50-2.65
Friend's suicide	1.98/.127	.82-4.75
Self Esteem	1.02/.504	.95-1.10
Good comm. w/mother	.72/.245	.42-1.25
Good comm. w/father	.94/.807	.58-1.54
CES-D score	1.02/.054	.99-1.03

a Based upon weighted data  
 OR = Adjusted Odds Ratio  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 7

Logistic Regression Analysis Predicting Odds of Having Suicide Thoughts at Wave 3 By

Various Past and Concurrent Predictor Variables <sup>a</sup>

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		Number of obs = 13,313 Wald chi2 (6) = 377.74 Pseudo R-square = .13
		Suicide Thoughts vs. no Thoughts
		<hr/> <b>95%</b> <b>Confidence</b> <b>Intervals</b>
<b>Independent Variables</b>	<b>OR/P</b>	
Friend's suicide (w/1)	1.42/.115	.92-2.20
Any illegal drug (w/3)	2.70/.001	2.11-3.47
Self Esteem (w/3)	1.15/.001	1.10-1.20
CES-D score (w/3)	3.53/.001	2.86-4.38
Runaway from home (w/1)	1.74/.001	1.27-2.38
Delinquency (w/3)	1.14/.001	1.08-1.21

<sup>a</sup> Based upon weighted data

OR = Adjusted Odds Ratio

P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 8

Multiple Regression Analysis of Depression Scores at Wave 1 By Various Predictor Variables

Measured from Wave 1<sup>a</sup>

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	Number of obs = 12,127 F (10, 12116) = 209.17 R-squared = .32	
<b>Independent Variables</b>	<b>Beta</b>	<b>P</b>
Delinquency	.072	.001
Any illegal drug	.040	.001
School Problems	.065	.001
Teacher Problems	.090	.001
Runaway from home	.054	.001
Friend's suicide	.031	.023
Family attempted suicide	.031	.007
Self Esteem	.432	.001
Good comm w/mother	-.063	.001
Good comm w/father	-.074	.001

a Based upon weighted data  
 P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 9

Multiple Regression Analysis of Depression Scores at Wave 2 By Various Predictor Variables

Measured from Wave 1<sup>a</sup>

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	Number of obs = 8,818
	F (10, 8807) = 85.16
	R-squared = .18
<hr/>	
<b>Independent Variables</b>	<b>Beta</b> <b>P</b>
Delinquency	.046                      .004
Any illegal drug	.030                      .062
School Problems	.082                      .001
Teacher Problems	.073                      .001
Runaway from home	.054                      .002
Friend's suicide	.038                      .027
Family attempted suicide	.008                      .552
Self Esteem	.303                      .001
Good comm w/mother	-.019                      .173
Good comm w/father	-.090                      .001

a Based upon weighted data  
P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001

Table 10

Multiple Regression Analysis of Depression Scores at Wave 3 By Various Predictor Variables

Measured from Wave 1<sup>a</sup>

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Number of obs = 9,445  
F (10, 9434) = 27.36  
R-squared = .06

<b>Independent Variables</b>	<b>Beta</b>	<b>P</b>
Delinquency	.025	.127
Any illegal drug	-.024	.117
School Problems	.034	.031
Teacher Problems	.063	.001
Runaway from home	.056	.004
Friend's suicide	.029	.079
Family attempted suicide	.024	.097
Self Esteem	.163	.001
Good comm w/mother	-.032	.033
Good comm w/father	-.043	.005

a Based upon weighted data  
P = Level of Significance

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Source: National Longitudinal Study of Adolescent Health, 1995-2001