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Contrasts between young males dying by suicide, those dying from other causes and those still living: Observations from the National Longitudinal Survey of Adolescent to Adult Health

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Abstract

Objectives: Utilizing Add Health longitudinal data, we compared 21 male suicide casualties to 10,101 living respondents identifying suicide correlates.

Method: 21 suicide decedents completed surveys in 1994/1995 (Wave 1) and 11 completed at Wave 3; responses were compared with Chi-square and oneway ANOVA tests.

Results: Suicide decedents were prone to higher delinquency and fighting at Wave 1, but not at Wave 3. At Wave 1 suicide decedents remained undistinguished from living respondents in depression, self-esteem, and drug uses. Yet, after Wave 3, the 11 respondents dying by suicide showed significantly higher depression, drug use and lower self-esteem.

Conclusion: Delinquency trends can readily understood, but more complex causes are needed to account for unexpected changes in self-esteem, depression and drug uses.

Introduction

Youth suicide remains an enduring public health problem in the U. S. According to the Centers for Disease Control it stands as the third leading death cause for 15 to 24 year-olds, accounting for one-fifth of all deaths of those within this age group (Centers for Disease Control, 2010). As of 2012, the suicide rate for those between the ages of 15-to-24 stood at 11 per 100,000 deaths (American Association of Suicidology, 2014). Yet, the youth suicide rate appears to be relatively stable over time; since 1970, and for more than 40 years, the youth suicide rate has shifted modestly, within a 5 point range, from a low of 9 per 100,000 to a high of 14 per 100,000 (McKeown, Cuffe & Schulz, 2006).

In the present study we examine why some young men take their lives, compared to their counterparts who either remain alive or die from other causes. We chose to focus upon males exclusively since they stand at a four times greater risk for taking their lives compared to females (Centers for Disease Control, 2014). Many previous studies have investigated this challenging question, collecting data from medical and psychiatric records, psychological autopsies and a small number of prospective studies of youth who later died by suicide. Much of this knowledge base was derived from studies of clinical populations.

In multiple prior studies depression was found to be a correlate of youth suicide or attempted suicide (Nanayakkara et al., 2013; Dugas et al., 2012). Others have found that criminal conduct or delinquency linked with youth suicidality (Langhinrichsen-Rohling & Lamis, 2008; Björkenstam, Björkenstam, Vinnerljung, Hallqvist, & Ljung, 2011). Prior substance use and abuse (Hallfors et al., 2004; DeMoore & Robertson, 1996; Pino et al., 1979) or the use of alcohol at the time of death (Lahti et al., 2014), as well as family dysfunction, family conflict and parental marriage dissolutions have also been associated with youth suicides (Brent, 1995; Hetrick et al., 2012; Nruham et al., 2008). Past research has also found school difficulties and low self-esteem linked with youth suicidality (Walsh & Eggert, 2007; Thompson et al., 2013; Nruham et al., 2008; Wichstrøm, 2000). In the present study, we plan to revisit these associations using a sample of former U.S. high school students.

Given suicide's low base rate, appearing in about 1 or 2 in every one hundred general population deaths, many previous studies of youth suicide have been based not only on completed suicides but also upon more commonplace behaviors of suicidal ideation and attempts. Yet, some analysts have observed that studying suicides, suicide ideation and attempts as a unitary phenomenon can be very misleading because, among other reasons, many studies have found profound and opposite-trending gender differences in these characteristics (DeJong, Overholser, & Stockmeier, 2010; Fushimi, Sugawara, & Saito, 2006; Gagnon, Davidson, Chiefetz, Martineau, & Beauchamp, 2009; Uribe et al., 2013; Hirvikoski & Jokinen, 2012). In addition, it may be inaccurate to assume that results obtained among clinical patients will remain the same for general population samples.

Another question about youth suicides that has rarely been explored in previous studies is whether there may be associations with age or maturational change. Previous research has established that as youth assume more adult roles, such as getting married and joining the workforce, there are sharp declines in delinquency (Massoglia & Uggen, 2010). Yet, in the annals of youth suicide research, it is a rarity to have data where one can examine whether associations between suicide and delinquency diminish with advancing age. With the availability of the longitudinal data used in this study we are now able to make observations over time, anticipating that associations between delinquency and suicide will decline as youth enter their twenties. This hypothesis also arises from within the criminology and suicidology literature. David Matza (1967) claims that the destructive behavior of many delinquent gang members is often fueled from their shared marginality; members taunt one another with challenges to do socially destructive things, trying to allay their own as well as each other's sense of being societal outsiders. Thomas Joiner (2005) also posits that an individual's perceived lack of a sense of belonging can induce him to take his life. As delinquently inclined male youth get older and gain more of a stake in the conventional

social order, they are less likely to feel marginalized. Gaining more of an acceptable place in the adult community, they begin to take a different perspective on anti-social conduct, often opting out of delinquency and their gang memberships. Thus, these theories lead us to anticipate that delinquency should be associated with suicide risk among teenagers but that this hypothesis is less likely to be supported when teenagers reach their twenties.

Recently, a new opportunity to explore correlates of male youth suicides-- both longitudinally and comparatively-- has become available. In March 2014, the National Longitudinal Survey of Adolescent to Adult Health (Add Health) released cause of death information on its large number of participants, matching survey decedents to the death records in the National Death Index (NDI). This matching process revealed that 10% of deceased survey participants died from self-inflicted causes.

The Add Health Survey began in 1995 with a nationally representative sample of more than 20,000 high school students, first interviewed in 1995, then again, approximately a year later (at Wave 2), then again six years afterward (at Wave 3). The new data, matching NDI death records to former Add Health Survey respondents, found that 21 original male respondents ultimately died by suicide or other self-inflicted causes within 12 years of completing their first surveys in 1995. In 2002, seven years later, 11 of these former respondents were still living and participated in a later survey. Thus, a window of opportunity presented itself to explore how respondents who would ultimately die by suicide, might present themselves, initially as high school students, between the ages 13 and 19 and then again seven years later, when they were over 20 years of age. We sought to contrast these 21 young males, who would later die by suicide, with their matched peers who still remained alive and with those Add Health survey participants who died from other causes.

Method

After determining that 126 respondents had died by the Wave 4 data collection point in 2008 and 2009, the Add Health research staff cross-referenced these cases with the death records at the National Death Index (NDI). They also presented more than 1500 other missing cases to NDI with the expectation of uncovering additional death cases. Ultimately they verified 227 respondent deaths, 31 of which could not be matched and assigned ICD-9 or ICD-10 cause of death codes. The Add Health staff created a broader categorization of death causes than the more specific ICD-9 and ICD-10 death codes, in an effort to protect respondent confidentiality (Add Health Wave IV NDI Documentation, 2014). They grouped cases into the following six categories: 1) Accidental deaths, including motor vehicle accidents, drug poisonings, drownings, pedestrian accidents, and similar events, $n = 66$ (29%); 2) Intentional self-injury cases, including suicides, intentional self-injury and terrorist-suicide cases, $n = 22$ (10%); 3) Assaults, including homicides, terrorism-homicides, and other assaults, $n = 19$ (8%); 4) All other natural death causes, $n = 72$ (32%) and 5) Cause not available, but death confirmed, $n = 17$ (7%). The additional 31 unmatched cases comprised the remaining 14%.

In our analyses we regrouped these categories into three contrast groups: Suicide decedents, $n = 22$, all other decedents $n = 205$, and living respondents, $n = 20,547$. After we discovered that 21 of the 22 suicide decedent were males, we decided to eliminate the single female

case from our sample, leaving us with 21 male suicide decedents, 141 other male decedents and 10,101 male respondents who were still living. At Wave 1, we also found that over 99% of the respondents ranged from ages 13 to 19. Thus, our final sample consisted of this narrow age range and male gender group.

Initially, we conducted bivariate tests of each nominal data hypothesis with Chi-square significance tests, contrasting the suicide decedents with those who were still living. When we had scalar variables like our 19-item depression scale or our 9-item self-esteem scale, we applied one-way ANOVA tests with our three analytic groups of interest and used the Bonferroni correction statistic to identify which specific associations of the three were statistically significant: male suicide decedents compared to living males; male deceased others compared to living males or male suicide decedents compared to male other decedents and living males.

Given the extremely modest number of male suicide decedents in the sample, we present our findings as exploratory and highly tentative. We mention those cases in the text when statistically significant differences arose in two or three-group analyses in comparisons between suicide decedents and living respondents, or between suicide decedents, other decedents and the living.

At the outset, the Add Health survey included a number of oversamplings of targeted groups of research interest whose numbers were augmented in the original Wave 1 survey: disabled youth, twins, sibling pairs, highly educated African-Americans, Cuban, Puerto Rican and Chinese youth. As such, these groups were somewhat over-represented in the sample. Add Health sampling procedures and survey details are especially complex and readers are invited to visit the study website for more detailed information: <http://www.cpc.unc.edu/projects/addhealth> In this report we discuss only those topics of immediate relevance to readers. The Add Health survey had a very good response rate. 20,745 respondents participated in the 1995 Wave 1 interview, 14,738 participated at Wave 2 and 15,170 participated six years later at Wave 3. We paid close attention to the numbers of male suicide decedents available at each wave point with 21 available at Wave 1, 17, at Wave 2 and only 11 available at Wave 3.

Measures

Depression.—Symptoms of depression were assessed via a 19-item variation of the CES-D scale (Radloff, 1977) at Wave 1. Responses ranged from 0 (*Rarely or none of the time*) to 3 (*Most or all of the time*), with higher total scores indicating more prevalent depressive symptoms. Sample items included: “felt you could not shake off the blues,” “felt depressed,” etc. Coefficient alpha was .86.

Self-esteem.—A self-esteem scale was created from nine items, offered at Wave 1, on a five-point Likert type scale. Sample items are “You have a lot of good qualities” and “You have a lot to be proud of”. Coefficient alpha was .86.

Delinquency.—At Wave 1 all respondents were given a list of 15 different delinquent acts and asked whether they had engaged in them and if so, how frequently in the past 12

months. The list included such behaviors as painting graffiti, deliberately damaging property, stole things, got into a physical fight, went into a house to steal things, sold illegal drugs, took a car without its owner's permission, etc. Coefficient alpha was .83.

Violence.—We created a scale of fighting and violent actions at Wave 1. Respondents were asked if, in the last 12 months, they had witnessed someone shoot or stab someone else; if someone had pulled a knife or gun on them; if someone had shot or knifed them; if they were jumped; if they had shot or knifed someone else; and if they had been seriously injured in a fight that required medical care. Coefficient alpha was .72.

Results

In presenting these results first we report contrasts between suicide casualties and living respondents. If we found additional significant associations in three-way contrasts between suicide casualties, other death decedents and living respondents we report these associations, as well.

Educational Contrasts

Over a third (38%) of suicide decedents reported being expelled from schools either at Wave 1, 2 or 3, in comparison to 12% for living respondents, a highly significant difference. In contrast with living respondents, significantly fewer suicide decedents felt teachers cared about them, when respondents were asked to rate teachers' caring on a five-point scale at Wave 2. At Wave 3 respondents were asked to offer information on their total years of education ranging from none up to 22, (which represented five years or more of postgraduate education). The average amount of education completed by suicide decedents was 10.6 years, which is approximately an 11th grade educational attainment. For living respondents 13 years, or one year of college, was the average educational attainment, another highly significant difference. These associations are shown in Table 1.

Contrasts in Living Arrangements

Although somewhat fewer suicide decedents reported living with biological parents at Wave 1, (33%), as compared to more than half (51%) among those who were still living, these differences fell within the range of chance variabilities. Yet, by Wave 3, the percentage of suicide decedents living with both biological parents dropped to zero. In contrast, 25% of living respondents and 23% of other decedents continued to report living with both parents. This sharp change in living arrangements among the suicide decedents made for a significant difference at Wave 3, ($p < .02$).

Table 1 also shows suicide decedents significantly more likely to report running away from home either at Wave 1, 2 or 3, (33%), compared to only 12% for living respondents. In addition, significantly more suicide decedents reported living at a residential treatment center as compared to living respondents, 18% as compared to 3%, ($p < .002$). Yet, while more suicide decedents lived in their own places, 55% as compared to 43% for living respondents, these differences were not significant. Similarly, a higher but non-significant

number of suicide decedents reported being forced to move out of their family's homes, 27% as compared to 11% for living respondents.

Wave 1 Patterns: Delinquency, Fighting, Self-esteem and Depression

Table 2 below shows suicide decedents reported significantly higher delinquency using our 15-item scale compared to living respondents at Wave 1. This pattern changed when suicide decedents were compared to those who died from other causes. Bonferoni correction showed suicide decedents reporting similar levels of delinquency compared to those dying from other causes. Fighting scores paralleled the pattern observed with delinquency, with suicide decedents significantly more likely to engage in fighting at Wave 1 than living respondents, though suicide decedents' fighting scores were not significantly different from the scores of those dying from other causes. Although we did not present this in our tables, an analysis of these same relationships with the Wave 2 data, confirmed the delinquency and fighting associations found at Wave 1, suggesting consistency in these findings during adolescence.

Table 2 also shows suicide decedents statistically undistinguished from the living and other death casualties using the 19-item CES-D scale, measuring depression. Again, one-way ANOVA tests showed suicide decedents much like the living and other death casualties on the 9-item self-esteem scale at Wave 1 when they were in their teen age years.

Wave 1 Drug Use and Use of Mental Health Services

Table 3 shows suicide decedents more than twice as likely to report themselves as daily smokers compared to living respondents at Wave 1, 24% as contrasted against 9%, ($p < .02$). Yet, in other respects of drug use including drinking alcohol, having problems associated with alcohol use, using marijuana, and using all other illegal drugs, although suicide decedents trended higher on a few of these dimensions, their drug use patterns remained within the range of chance variabilities when compared to living respondents.

Although one might have expected that the higher rates of school expulsions observed within the sample of suicide decedents might have required that they participate in counseling, the data trended only slightly in this direction of increased services with suicide decedents no more likely to have had mental health counseling or drug rehabilitation services compared with living respondents at Wave 1. These non-significant findings are not displayed in our tables.

Wave 3 Drug Use and Use of Mental Health Services

Our sample of suicide decedents was greatly depleted by Wave 3 in 2001, shrinking down from 21 to 11 males who were still alive seven years after the first survey. Members of this smaller group took their lives within the next five years following Wave 3. Yet, this smaller group of suicide decedents appeared to be far more involved in drug use than their counterparts at Wave 1. Table 4 shows that nearly 3/4s (73%) reported themselves as daily cigarette smokers and nearly half (45%) smoked a pack or more of cigarettes daily, compared to only a quarter of their living male counterparts who reported being daily smokers and 10% who were pack-a-day smokers. These differences were statistically significant, ($p < .002$ and $p < .0001$ respectively).

With our small number of suicide decedent cases, comparisons of alcohol use and abuse examining suicide decedents and the living generally fell within the range of chance variabilities. Yet, contrasts between both groups still diverged sharply: 46% of suicide decedents reported being drunk weekly within the past year, compared to only 25% for living respondents, and 45% reported binge drinking weekly compared to only 30% of the living. Marijuana use trended higher for the suicide deceased and stimulant use was reported as significantly higher, 30% as compared to 9%, ($p < .02$). Suicide decedents were significantly more inclined to use a greater number of illegal drugs; 40% reported using 3 or more non-prescription drugs in the past year as compared to only 13.5% among the living, ($p < .001$). There was also a tendency for suicide decedents to report more problems with friends from drug use, on a four-point scale, with a mean of .3 compared to .06, for living respondents, a finding which approached significance ($p < .068$). All these results, with the exception of non-significant findings, are displayed in Table 4. It is also interesting to note that despite their heavy drug use at Wave 3, suicide decedents remained statistically undistinguished from living respondents in using mental health counselors or drug rehabilitation services.

Wave 3 Patterns: Delinquency, Fighting, Self-esteem and Depression

Among our smaller sample of 11 suicide decedents, now in their early twenties, we noted no differences in delinquency and fighting in comparison to living respondents, employing much the same scales that were administered at Wave 1. This is displayed in Table 2. At Wave 3 the Add Health administrators did not include the entire 19-item CES-D scale to respondents. Eight items were asked and we selected the five that most directly focused on feelings of depression: “felt bothered by things”, “had trouble shaking off the blues”, “was sad”, “was depressed” and “enjoyed life”(reversed). Each of these five items was highly intercorrelated with correlation coefficients ranging from .35 to .66. We created a brief CES-D depression scale with scores ranging from 0 to 15. Using a one-way ANOVA test, comparing living respondents and suicide decedents at Wave 3, we found a significant association between suicide death and depression at the .05 level.

Similarly, the Add Health administrators did not include the entire nine-item self-esteem scale at Wave 3. From what was presented at Wave 3 we extracted the four items that were most germane to our research questions: “Do you agree or disagree with the following statements”: “have many good qualities”; “have a lot to be proud of”; “like yourself just the way you are”; “feel you are doing things just about right”. Again these four items were highly intercorrelated, with scores ranging from .36 to .61, and formed a scale with scores ranging from 4 to 20. A one-way ANOVA showed a significant association at the .04 level with suicide decedents displaying significantly lower self-esteem at Wave 3 than living respondents.

Conclusions

This prospective study of a general population sample of male high school students ultimately dying by suicide confirms a number of hypotheses about suicide risk established with clinical populations. Consistent with past research we found suicide decedents more

likely to get expelled from schools, to run away from family homes and more inclined to engage in delinquent and aggressive behaviors during their teenage years. As anticipated, we also found that the suicide risk associated with delinquent and aggressive conduct is limited to a particular stage in the life course, adolescence. It does not carry over when youth enter into their twenties. Readers should also note the drastic drops in delinquency and fighting scores for all subgroups, as one compares Wave1 and Wave 3 score values.

Yet, at the same time this investigation appears to have raised a number of new and perplexing questions about the nature of suicide risk associated with the maturational changes taking place as youth transition from teenage years into young adulthood. With our longitudinal data we have observed no apparent suicide risk from depression, drug use and diminished self-esteem during a male adolescent's teenage years. Yet, we have seen rising suicide risks emerging as youth move into their early twenties associated with rising depression, drug use and self-esteem deficits. It is altogether possible that moving into one's twenties brings with it new maturational challenges that induce these associations, putting such youth at greater suicide risk. Equally plausible or perhaps even more plausible, are associations between these elements and loss of parental support. At Wave 1 no significant differences were noted in family living arrangements between suicide decedents and the living; yet, at Wave 3, approximately a quarter of deceased others and living respondents reported themselves as still living with both biological parents, in sharp contrast to the suicide deceased, where not a single male still lived with his biological parents. The significant declines of parental support among suicide decedents at Wave 3, either alone or in concert with other suicide risk correlates, may have synergistically led these young adults to experience greater depression, increased drug taking and diminished self-esteem. With our very small sample of suicide decedents, we were not in a position to apply multivariate analyses techniques to evaluate the separate effects of each of the important variables examined here that may be linked with one another. It is obvious that longitudinal data have furnished some new and provocative insights about changing suicide risk associated with maturation which previously were unobserved. Studies using larger samples will be essential if we are to separately observe youth who remained at home with their biological parents with those who do not.

Our findings showing emerging associations between depression and suicide as respondents passed from Wave 1 to Wave 3 are consistent with other studies that have found age related associations between depression and suicide risk (Thompson, 2008). Kessler et al., (2005) found depression and other mood disorders steadily rising through the late teen age years and peaking by age 30. Lewinsohn et al., (1993) projected that by age 20, 30% of those who will eventually grapple with a major depression disorder will have already done so by that age.

Another important finding from this investigation is the lack of heightened exposure to mental health counselors or drug rehabilitation services among those who ultimately died by suicide, (compared to living respondents or respondents dying from other causes) despite evidence of higher delinquency, depression, drug taking and lower self-esteem in this population prior to their deaths. This was noted in three separate comparisons made over the seven year period from Wave 1 to Wave 3. Much previous research, both in the U.S. and

elsewhere, has documented a strong aversion to help-seeking for mental health problems among youth (Clement et al., 2014; Colognori et al., 2012; O'Connor et al., 2014; Rickwood et al., 2005; Vanheusden et al., 2008). Many youth who might otherwise seek care are reluctant to do so for fear of stigmatization (Clement et al., 2014).

We also found that those at highest risk for completing suicide, such as the suicide casualties seen in this study, did not seek help for themselves. As such, we might wonder about their histories of previous suicide attempts. Although all respondents were queried about this on three separate occasions during the seven year span from Wave 1 to Wave 3, only a single one of our 21 suicide casualties had indicated a prior suicide attempt. This too, is consistent with previous research showing higher help seeking among suicide attempters, but much less help-seeking among those who actually die by suicide (Fushimi et al., 2006). Thus, suicide prevention services seem to be eluding the very people who stand at the highest risk for taking their lives.

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Table 1:

Characteristics of Living, Other Deceased, and Suicide-Deceased Male Respondents *

% (N)					
Characteristic	Percent Still Living	Percent Other Deceased	Percent Suicide	X ² (df)	p-value
Ever Ran Away from Home?					
Yes	12.4 (1,249)	14.9 (21)	33.3 (7)	8.48 (1)	0.004
No	87.6 (8,852)	85.1 (120)	66.7 (14)		
Ever Stayed in a Homeless Shelter?					
Yes	1.2 (83)	1.8 (1)	0.0 (0)	0.13 (1)	0.718
No	98.8 (7,003)	98.2 (55)	100.0 (11)		
Parents Made Child Move Out					
Yes	11.4 (810)	8.9 (5)	27.3 (3)	2.72 (1)	0.099
No	88.6 (6,274)	91.1 (51)	72.7 (8)		
Ever Live in a Care / Treatment Home?					
Yes	2.8 (197)	5.4 (3)	18.2 (2)	9.6 (1)	0.002
No	97.2 (6,891)	94.6 (53)	81.8 (9)		
Living Situation (at Wave 1)					
Living with both parents	51.0 (5,147)	41.1 (58)	33.3 (7)	3.15 (2)	0.207
Lives with one parent / Step Parents/ Other	47.1 (4,762)	56.0 (79)	61.9 (13)		
Living Situation (at Wave 3)					
Living with both parents	25.0 (1,770)	23.2 (13)	0.0 (0)	7.47 (2)	0.024
Lives with one parent / Step Parents/ Other	70.5 (5,002)	71.4 (40)	81.8 (9)		
Who Respondent Lives With					
With parents	45.0 (3,194)	55.3 (31)	36.4 (4)	1.30 (5)	0.935
With others	5.9 (419)	10.7 (6)	9.0 (1)		
Has own place	43.4 (3,081)	26.8 (15)	54.6 (6)		
Group home	4.8 (340)	5.4 (3)	0.0 (0)		
Homeless	0.1 (5)	0.0 (0)	0.0 (0)		
Other	0.8 (55)	1.8 (1)	0.0 (0)		
Respondent Lives Alone?					
Alone	8.4 (596)	7.1 (4)	18.2 (2)	1.82 (2)	0.403
With others	86.7 (6,152)	87.5 (49)	81.8 (9)		
Group home	4.9 (348)	5.4 (3)	0.0 (0)		
Ever Expelled					

% (N)					
Characteristic	Percent Still Living	Percent Other Deceased	Percent Suicide	X ² (df)	p-value
Yes	12.3 (1,237)	18.4 (26)	38.1 (8)	12.98 (1)	0.0001
No	87.8 (8,864)	81.6 (115)	61.9 (13)		
Characteristic	Percent Still Living (SD)	Percent Other Deceased (SD)	Percent Suicide (SD)	F-test	p-value
Teachers Care About You	3.49 (1.06)	3.29 (1.05)	2.94 (1.34)	4.56	0.033
Total Sample Size	6,817	86	17		
Highest Grade Completed	13.04 (1.93)	11.84 (1.37)	10.55 (1.51)	18.46	0.0001
Total Sample Size	7,091	55	11		

* Table 1 displays comparisons between living, suicide deceased, and living respondents. Statistical significance tests were computed and are displayed for the suicide deceased and living respondents only.

Table 2:

Behavioral and Psychological Measures of Living, Deceased, and Suicide-Deceased Male Respondents *

Characteristic	Percent Still Living (SD)	Percent Other Deceased (SD)	Percent Suicide (SD)	F-test	p-value
Depression Scale Score (Wave 1)	10.43 (6.80)	11.09 (6.69)	8.62 (6.77)	1.48	0.224
Total Sample Size	10,025	141	21		
Depression Scale Score (Wave 3)	2.04 (2.38)	2.50 (2.45)	3.45 (3.91)	3.86	0.050
Total Sample Size	7,074	56	11		
Self-Esteem Scale Score (Wave 1)	16.33 (4.70)	16.67 (4.58)	15.33 (4.45)	0.94	0.332
Total Sample Size	10,023	141	21		
Self-Esteem Scale Score (Wave 3)	6.95 (2.29)	7.93 (2.33)	5.55 (1.69)	4.11	0.043
Total Sample Size	7,084	56	11		
Delinquency Scale Score (Wave 1)	3.27 (3.06)	4.04 (3.63)	5.29 (4.27)	9.11	0.003
Total Sample Size	9,893	139	21		
Delinquency Scale Score (Wave 3)	1.07 (2.29)	1.74 (2.92)	0.82 (1.94)	0.13	0.721
Total Sample Size	6,889	53	11		
Violence Scale Score (Wave 1)	1.27 (1.66)	1.52 (1.88)	2.05 (1.83)	4.60	0.032
Total Sample Size	9,891	139	21		
Violence Scale Score (Wave 3)	0.33 (0.99)	0.34 (0.79)	0.45 (1.21)	0.17	0.680
Total Sample Size	7,002	56	11		

* Table 2 displays comparisons between living, suicide deceased, and living respondents. Statistical significance tests were computed and are displayed for the suicide deceased and living respondents only.

Table 3:

Substance Use & Use of Support Services at Wave 1. Examination of Living, Deceased, and Suicide-Deceased Male Respondents *

Characteristic	Percent Still Living	Percent Other Deceased	Percent Suicide	X ² (df)	p-value
Days Smoking Cigarettes in Past Month					
None	73.9	56.7	52.4	10.07 (3)	0.018
5 or Less Days	9.1	12.1	4.8		
6 – 29 Days	7.8	13.5	19.0		
Daily	9.2	17.7	23.8		
Total Sample Size	10,018	141	21		
Used Inhalants					
Yes	6.3	5.0	15.0	2.56 (1)	0.109
No	93.7	95.0	85.0		
Total Sample Size	9,892	139	20		

* Table 3 displays comparisons between living, suicide deceased, and living respondents. Statistical significance tests were computed and are displayed for the suicide deceased and living respondents only.

Table 4:

Substance Use & Use of Support Services at Wave 3. Examination of Living, Deceased, and Suicide-Deceased Male Respondents *

Characteristic	Percent Still Living	Percent Other Deceased	Percent Suicide	X ² (df)	p-value
Days Smoking Cigarettes in Past Month					
None	65.7	48.2	27.3	15.34 (3)	0.002
1 – 14 Days	5.5	10.7	0.0		
15 – 29 Days	5.7	5.4	0.0		
Daily	23.1	35.7	72.7		
Total Sample Size	7,072	56	11		
Cigarettes Smoked per Day in Past Month					
None	65.0	46.4	27.3	32.57 (4)	0.0001
< 10	19.1	23.2	9.1		
< Pack (20)	5.4	10.7	18.2		
Pack (20)	7.8	12.5	18.2		
> Pack	2.7	7.1	27.3		
Total Sample Size	7,056	56	11		
Frequency of Being Drunk During Past Year					
None	45.2	48.2	18.2	5.36 (3)	0.147
Less than once a month	30.2	26.8	36.4		
Weekly	21.1	17.9	45.5		
Greater than weekly	3.5	7.1	0.0		
Total Sample Size	7,057	56	11		
Taken Stimulants Since June 1995					
Yes	9.2	10.7	30.0	5.15 (1)	0.023
No	90.8	89.3	70.0		
Total Sample Size	6,970	56	10		
Used Any of 8 Illegal Non-Prescription Drugs					
None	64.9	53.6	50.0	19.09 (4)	0.001
One	15.6	14.3	10.0		
Two	6.0	14.3	0.0		
Three	3.8	3.6	30.0		
4 or More	9.7	14.3	10.0		
Total Sample Size	6,870	56	10		
Characteristic	Percent Still Living (SD)	Percent Other Deceased (SD)	Percent Suicide (SD)	F-test	p-value
Problems w/ friends from drugs in past year					

Characteristic	Percent Still Living	Percent Other Deceased	Percent Suicide	X ² (df)	p-value
Total Problems	0.06 (0.38)	0.16 (0.60)	0.27 (0.90)	3.34	0.068
Total Sample Size	7,072	56	11		

* Table 4 displays comparisons between living, suicide deceased, and living respondents. Statistical significance tests were computed and are displayed for the suicide deceased and living respondents only.