



## SUICIDAL THOUGHTS AND ATTEMPTS AMONG MINNESOTA TEENS

### In this issue . . . . .

From 1998 to 2002, 30 Minnesota youth 10 to 14 years of age and 170 youth 15 to 19 years of age took their own lives, making suicide one of the leading causes of death for adolescents. The impact on the community, friends and families touched by suicide can be devastating.

For every completed suicide by adolescents, there are many more attempts that require hospitalization or emergency room treatment and many attempts that do not require or receive medical attention. This issue of the Quarterly focuses on suicidal thoughts and attempts by Minnesota’s teens. Data from death certificates and hospital records will provide information on the extent and demographics of suicide and suicide attempts. Most of the article is devoted to exploring the relationship between suicidal thoughts and attempts and other social and behavioral factors in the lives of teens, relying heavily on data from the Minnesota Student Survey.

### National perspective

Suicide is the third leading cause of death among people 10 to 19 years old<sup>1</sup> and the eleventh leading cause of death for all ages in the U.S.<sup>2</sup> Suicide rates for males 15 to 19 years old nearly tripled between 1965 and 1987, remained steady for several years, and have fallen substantially since 1994. Suicide rates for females in their mid to late teens changed relatively little over the same time period.<sup>3</sup>

The number of completed suicides is only the tip of the iceberg. In 2001, the National Youth Risk Behavior Survey found that 19.0 percent of high school students had seriously thought of attempting suicide, 14.8 percent had made plans to attempt suicide, and 8.8 percent had actually made an attempt at suicide in

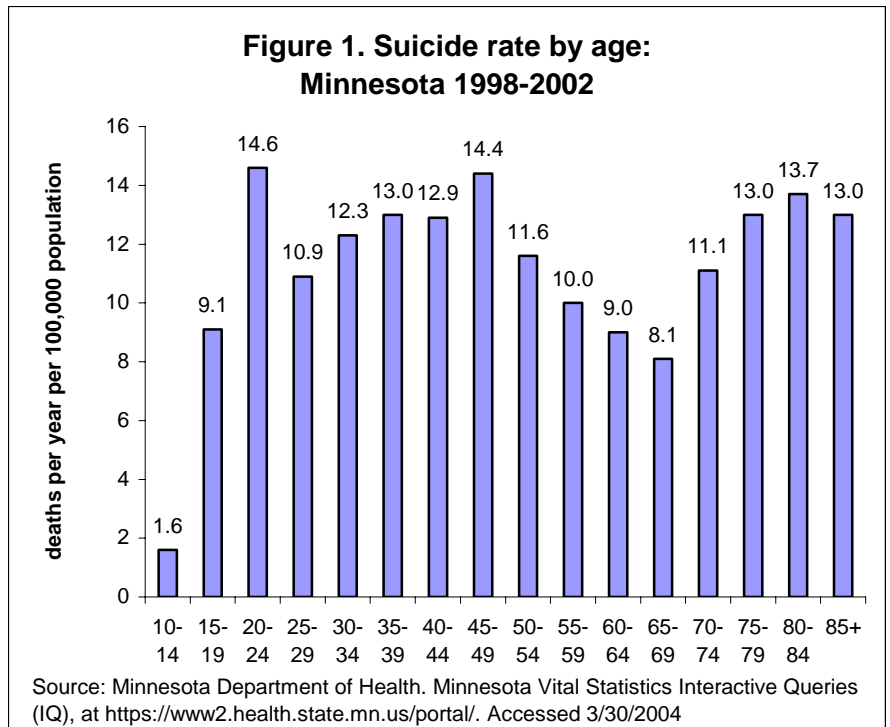
the past year.<sup>4</sup> The percentage of high school students who say they have attempted suicide has remained fairly stable over the last decade.<sup>5</sup>

In 2000, an average of 80 people of all ages committed suicide each day in the U.S.<sup>6</sup> More adolescents and young adults die from suicide than die from cancer, heart disease, AIDS, birth defects, stroke, pneumonia, influenza, and chronic lung disease combined.<sup>7</sup>

### Minnesota perspective

#### Mortality

Between 1998 and 2002, suicide was the third leading cause of death for 10- to 14-year-olds in Minnesota (30 deaths) and the second leading cause of death for 15- to 19-year-olds (170 deaths). Although suicide first emerges as a health threat in the teen years, rates of completed suicide are actually higher among adults 20 years old or older. (Figure 1)



Of the deaths due to suicide for all age groups in Minnesota in recent years, half (50%) were attributed to firearms. Among 10- to 19-year-olds, 58 percent of all suicides were carried out by firearms.<sup>8</sup> Other leading methods were poisoning and suffocation.

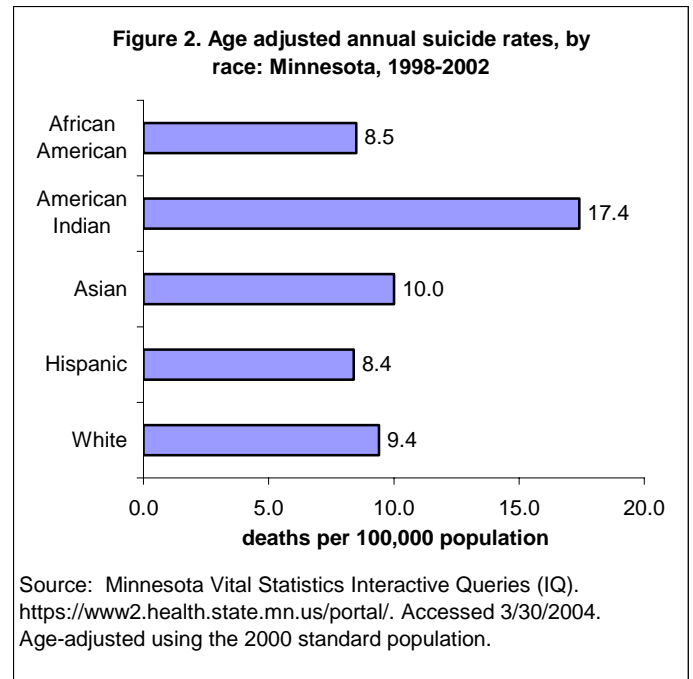
Males accounted for more than four of every five persons (83%) who committed suicide in Minnesota between 1998 and 2002. Similar percentages held for 10- to 14-year-olds (77% males) and 15- to 19-year-olds (85% males).<sup>9</sup> In general, men are far more likely than women to use firearms to commit suicide. While hospitalization and survey data suggest that women make more suicide attempts than men, the greater use of firearms by men contributes to their much higher rate of completed suicides.

The suicide rate for American Indians of all ages in Minnesota was nearly twice as high as for any other racial/ethnic group, with an age-adjusted annual rate of 17.4 per 100,000. (Figure 2) Among adolescents and young adults, suicide rates were three times higher in the American Indian community than in other racial/ethnic groups.<sup>10</sup>

### Self-inflicted Injuries

For every completed suicide, there are many more young people who have tried to commit suicide. Intentional self-inflicted injuries that are serious enough to require hospital treatment are often the result of an attempted suicide. Data on hospital treatment of self-inflicted injuries provide an indirect indicator of suicide attempts.

Hospital discharge records reveal that 232 youth 10 to 14 years old and 730 youth 15 to 19 years old were hospitalized for non-fatal self-inflicted injuries during



2002. A similar number (237 youth between 10 and 14 years old and 779 youth between 15 and 19 years old) received treatment at a hospital emergency room but were not admitted. (Table 1) Altogether, 27 percent of all non-fatal hospitalizations for injuries among persons between 10 and 19 years of age were classified as self-inflicted.<sup>11</sup>

Nearly three-fourths of adolescents requiring hospitalization or emergency room treatment for self-inflicted injuries (71%) were females. Most of the self-inflicted injuries among 10- to 19-year-olds that required hospital admission or ER treatment (61%) were due to poisoning. Injuries due to cutting or piercing accounted for most of the rest. (Table 1)

**Table 1. Hospital admissions and emergency room treatment for non-fatal self-inflicted injuries: Minnesota, 2002**

	10-14 years old			15-19 years old		
	Male	Female	Total	Male	Female	Total
<b>Hospitalization</b>						
Due to poisoning	23	114	137	130	382	512
Due to cutting or piercing	15	44	59	42	98	140
Due to other causes	19	17	36	40	38	78
<b>TOTAL</b>	57	175	232	212	518	730
<b>Emergency Room Only</b>						
Due to poisoning	17	110	127	85	354	439
Due to cutting or piercing	24	50	74	75	164	239
Due to other causes	23	13	36	73	28	101
<b>TOTAL</b>	64	173	237	233	546	779

Source: Minnesota Department of Health, Injury and Violence Prevention Unit, <http://www.health.state.mn.us/injury/midas/index.cfm>, accessed March 31, 2004.

## Survey Data on Suicide Thoughts and Attempts—the Minnesota Student Survey

The remainder of this article uses the 2001 Minnesota Student Survey to explore demographic, protective, and risk factors that might be associated with reported suicide thoughts and attempts. The Student Survey is administered every three years to sixth, ninth, and twelfth grade students attending public schools.

The Student Survey is not strictly representative of all young people. Those who attend private schools or who have dropped out of school or who missed school on the survey date are not represented. In addition, students in alternative schools, juvenile correctional facilities, and residential treatment programs are surveyed separately, and their responses are not reported in this article. Students in these settings are more likely to report suicide attempts, suicidal thoughts and high emotional distress than are students in regular schools.<sup>12</sup>

The data presented in the remainder of this article are drawn from 50,168 ninth grade students who responded to the survey in 2001. Twelfth graders were not included because the higher dropout rate and lower survey participation rate at this grade level increased the chance that results might not be representative.

The survey included two questions about suicide: “*Have you ever thought about killing yourself?*” and “*Have you*

*ever tried to kill yourself?*” Both questions had the same response options: “*No*”, “*Yes, during the last year,*” and “*Yes, more than a year ago.*” For analysis, students were divided into three mutually exclusive groups on the basis of their responses regarding suicide thoughts or attempts in the past year. The three groups consisted of students who reported that they:

- (1) had not thought of committing suicide nor made any attempts in the past year;
- (2) had thought about committing suicide but made no attempts in the past year;
- (3) had made one or more attempts to kill themselves in the past year.

Overall, 7.3 percent of ninth grade students reported they had tried to kill themselves in the past year, and another 15.9 percent said they had thought about killing themselves but made no attempt. Girls were twice as likely as boys to report having attempted suicide (10.0% and 4.5% respectively). American Indian youth (14.5%) and Latino youth (12.2%) reported the highest rates of attempted suicide among racial/ethnic groups. Students who were currently living with one parent or no parent and students with a chronic mental or physical health condition also reported high rates of attempted suicide. (Table 2)

**Table 2. Self-reported suicide thoughts or attempts in past year by demographic groups: 9<sup>th</sup> grade students**

	No thoughts or attempts (%)	Thought about suicide, but no attempts (%)	Attempted to kill self (%)	Row Totals (%)
TOTAL	76.8	15.9	7.3	100.0
Gender:				
Male	83.3	12.2	4.5	100.0
Female	70.6	19.3	10.0	100.0
Racial/ethnic group*				
African American	78.6	12.4	9.0	100.0
American Indian	66.6	18.8	14.5	100.0
Asian	74.5	17.1	8.3	100.0
Latino	72.4	15.4	12.2	100.0
White	77.0	16.1	6.9	100.0
Lives with:				
Two parents	78.4	15.6	6.1	100.0
Sometimes mother, sometimes father	73.2	17.6	9.2	100.0
One parent or no parent	72.4	16.5	11.1	100.0
Chronic health condition**				
Yes	61.1	21.7	17.2	100.0
No	79.3	14.9	5.7	100.0
*Students could check more than one group. Population base for each racial ethnic group includes all students who checked that group, whether alone or in combination with another group.				
** “Do you have a mental or physical condition or other health problem that has lasted at least 12 months?”				

Source: Minnesota Student Survey, 2001

## Protective Factors

Research has identified a number of protective factors that appear to reduce the likelihood of suicide and suicide attempts. The 2001 Minnesota Student Survey included questions related to several of these factors, such as family cohesion, caring relationships with adults in the community, and perceived connectedness to the school.<sup>13</sup>

### Family Relationships

Among 9<sup>th</sup> grade students, those who report having had no suicide thoughts or attempts were consistently more likely to feel that their parents and families care about them, understand them, and can communicate with them. For example, 50 percent of students who reported no recent suicide thoughts or attempts felt that their families understood them, compared to 17 percent of those who had attempted suicide in the past year. (Table 3)

### Relationships with Friends and Community

Similarly, youth who feel that their friends or other adults in the community care about them are also more likely to avoid suicide thoughts or attempts. For example, 86 percent of students with no suicide thoughts or attempts felt that other adult relatives care about them, compared to 53 percent of students who had attempted suicide. (Figure 3) It should be noted that many students who reported suicide attempts do indeed feel that they have friends and adults who care about them, but this perception of caring doesn't seem to occur as often as with students who have not tried to kill themselves.

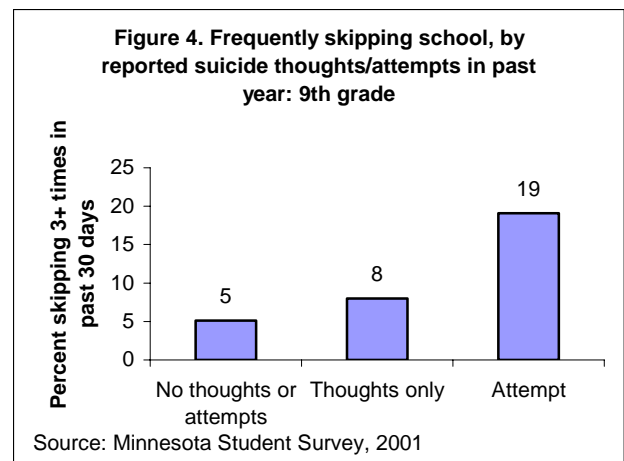
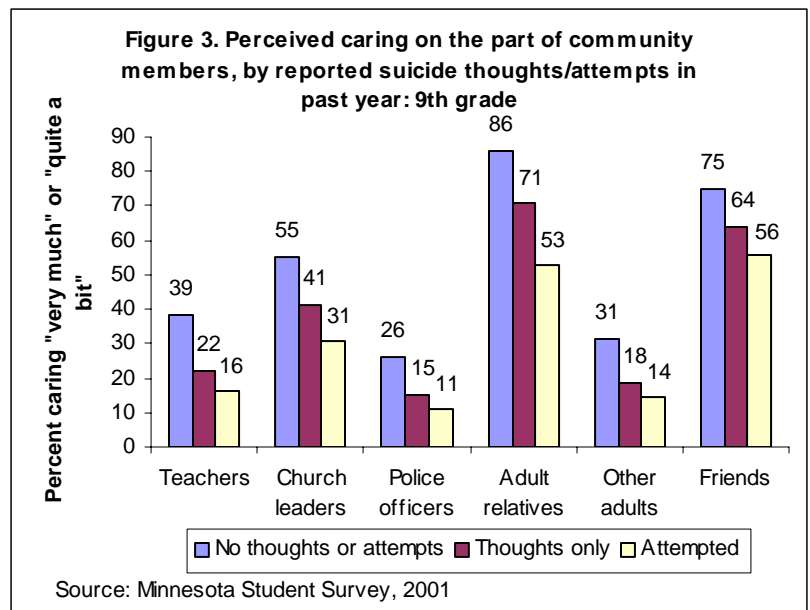
### School Experiences

Having positive experiences with school may also serve as a protective factor. Students who like school, do not skip school, do well academically, and believe their teachers are interested in them are less likely to report trying to kill themselves. About one in five students who reported attempting suicide (19%) said they had skipped school three or more times in the past 30 days, compared to 5 percent of students with no suicide thoughts or attempts. (Figure 4) Sixty percent of students with no suicide thoughts or attempts reported that they usually get A's or B's, compared to 31 percent of students who did try to commit suicide.

**Table 3. Students' relationship with parents and family, by reported suicide thoughts/attempts in past year: 9<sup>th</sup> grade**

	No thoughts or attempts	Thoughts only	Attempted suicide
Percent who say parents care about them "very much"	81%	60%	43%
Your family cares about your feelings "very much" or "quite a bit"	74%	50%	36%
Your family understands you "very much" or "quite a bit"	50%	23%	17%
Your family has lots of fun together "very much" or "quite a bit"	52%	30%	21%
Your family respects your privacy "very much" or "quite a bit"	56%	35%	25%
Percent who can talk to father about problems "most of the time" or "some of the time"	67%	48%	37%
Percent who can talk to mother about problems "most of the time" or "some of the time"	83%	71%	57%

Source: Minnesota Student Survey, 2001



## Risk Factors

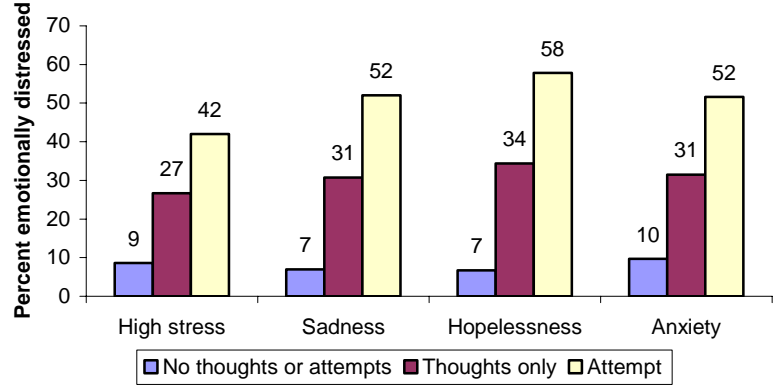
Risk factors are behaviors, emotional states, health conditions or experiences that are associated with suicide attempts. Mental disorders, especially depressive disorders, are strongly associated with suicide attempts and are present in the great majority of completed youth suicides. Substance abuse, previous suicide attempts, family history of mental illness and suicide attempts, aggressive-impulsive behaviors, and physical or sexual abuse are among the factors that have also been linked to youth suicide attempts.<sup>14</sup>

## Emotional Distress

While the Student Survey does not directly address mental illness, it does include questions about stress, feelings of sadness, feelings of hopelessness, and feelings of nervousness and worry within the past thirty days. Close to half (42%) of students who had attempted suicide in the last year said they felt under great stress or pressure (“almost more than I could take”), compared to 9 percent of students who reported no suicidal thoughts or attempts. Students who had attempted suicide within the last year were also seven times more likely to report frequent sadness, eight times more likely to report hopelessness, and five times more likely to report frequent anxiety, compared to students with no thoughts or attempts. (Figure 5)

These four questions can be combined into an emotional distress score determined by counting the different types of emotional distress that are present for each student. Scores can range from 0 (lowest) to 4 (highest). As Figure 6 shows, 40.5 percent of students who exhibited all four types of distress reported an attempted suicide in the past year, compared to only 2.4 percent of those exhibiting none of the four types of distress. The emotional distress score may be an important indicator of potential suicide-related behavior and/or potential mental health problems among adolescents.<sup>15</sup>

**Figure 5. Percent experiencing emotional distress, by reported suicide thoughts/attempts in past year: 9th grade**



Source: Minnesota Student Survey, 2001

### Definitions of emotional distress:

**High stress:** percent who felt high stress (“almost more than I could take”) in last 30 days.

**Sadness:** percent who felt sad all or most of the time in last 30 days.

**Hopelessness:** percent who felt discouraged or hopeless (“Extremely so” or “quite a bit”) in last 30 days.

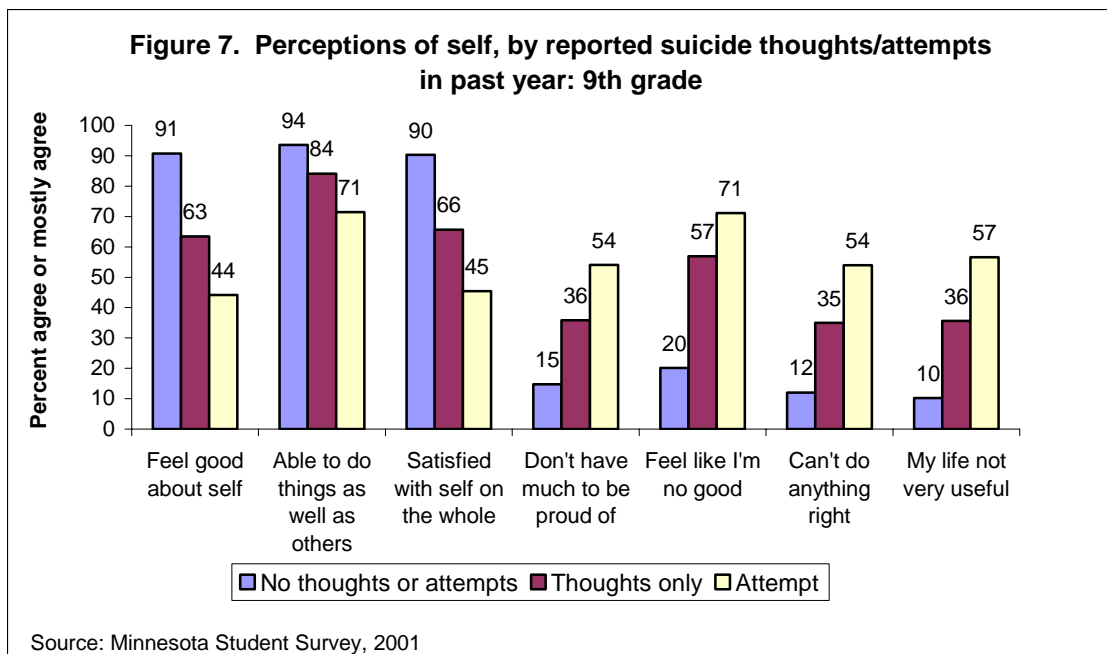
**Anxiety:** percent who felt nervous, worried or upset all or most of the time in last 30 days.

**Emotional Distress Score:** number of questions indicating distress, as defined by the above responses (range 0-4).

**Figure 6. Percent reporting suicide attempt in past year, by emotional distress score: 9th grade**



Source: Minnesota Student Survey, 2001

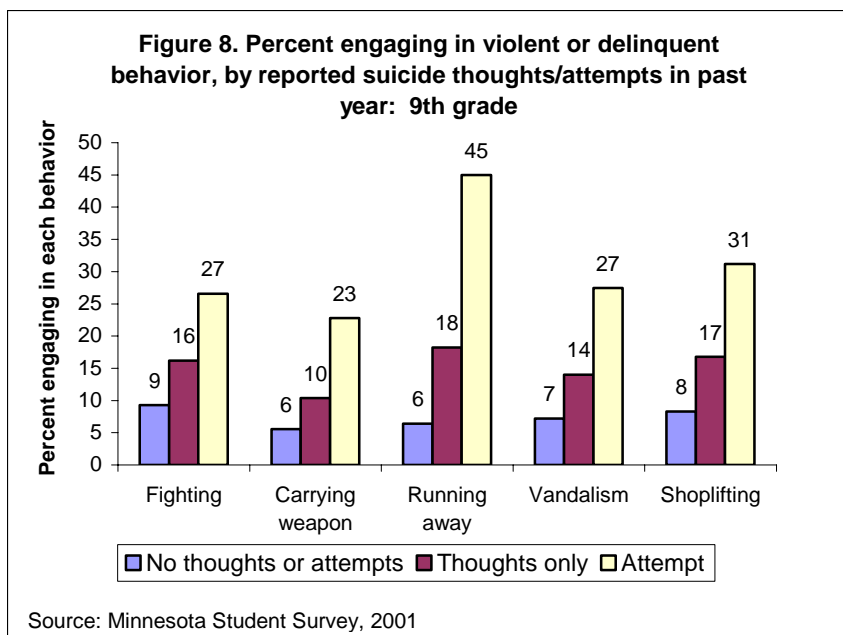


### Self-esteem

Along with everything else they deal with, adolescents face issues about how they perceive themselves and how their peers perceive them. The Student Survey found that adolescents who have low self-esteem or who feel that their lives are meaningless are at a greater risk for suicidal thinking or behavior. Ninth grade students who reported attempting suicide were less likely than other students to agree with positive statements about themselves and much more likely to agree with negative statements. For example, 44 percent of students who reported an attempted suicide agreed that they “felt good” about themselves, compared to 91 percent of those with no thoughts or attempts. More than half of all students who had attempted suicide agreed with statements that they didn’t “have much to be proud of,” that they were “no good,” that they couldn’t “do anything right,” and that their lives were “not very useful.” (Figure 7)

### Violent and Delinquent Behavior

Violent or anti-social behavior was also found more frequently among students who reported thoughts of suicide or an attempted suicide in the past year. Twenty-seven percent (27%) of students who had tried to kill themselves were involved in hitting or beating up



another person on three or more occasions in the past year, compared to 9 percent of students with no recent suicidal thoughts or attempts. Carrying a weapon on school property, running away from home, damaging or destroying property, and stealing from a store were all more prevalent among those who had thought of suicide and especially among those who had attempted suicide. (Figure 8)

## Sexual activity and abuse

Sexual activity at an early age and the experience of physical and sexual abuse were associated with suicide thinking and behavior. Those students who reported an attempted suicide were three times more likely to be sexually active than students who had neither thought of nor attempted suicide in the past year. Those who had attempted suicide were also five times more likely to report having experienced some form of unwanted or forced sexual touching and five times more likely to report having experienced physical abuse. (Table 4)

## Chemical Use

The use of certain substances including alcohol and illicit drugs is a significant risk factor for suicide attempts.<sup>16</sup> In the Minnesota Student Survey, more than half of 9<sup>th</sup> grade students who had attempted suicide in the past year (52%) were current cigarette smokers (used cigarettes one or more times in the past month). In contrast, 27 percent of students who had suicidal thoughts were current smokers, as were 14 percent of those having no suicidal thoughts or attempts. Students who reported an attempted suicide also were twice as likely to have used alcohol and three times as likely to have used marijuana in the past month, compared to students reporting no suicide thoughts or attempts. (Figure 9)

## Conclusion

Data from the Minnesota Student Survey provide a Minnesota perspective on many of the risk and protective factors related to suicide thoughts and attempts. For a more complete review of risk and protective factors, see articles and reports cited in the references.<sup>17</sup>

Young people who consider suicide or actually make an attempt are more likely to experience emotional distress and lack of self-esteem, are more likely to be involved in high-risk behaviors (chemical use, violent or delinquent behavior, early sexual activity), and are more likely to

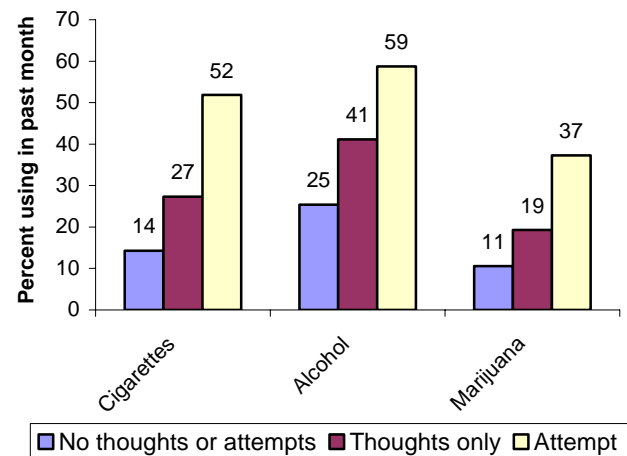
**Table 4. Sexual activity and physical/sexual abuse, by reported suicide thoughts/attempts in past year: 9<sup>th</sup> grade**

	No thoughts/ attempts	Thoughts only	One or more attempts
Percent who have been sexually active*	15%	24%	49%
Percent experienced sexual abuse**	5%	12%	28%
Percent experienced physical abuse***	7%	19%	38%

\* Has had sexual intercourse one or more times in lifetime.  
 \*\* Unwanted or forced sexual touching by an older/stronger family member or someone outside the family. (lifetime)  
 \*\*\*Has been hit by an adult in household so hard or so often that student had marks or was afraid of that person. (lifetime)

Source: Minnesota Student Survey, 2001

**Figure 9. Percent using cigarettes, alcohol and marijuana, by reported suicide thoughts/attempts in past year: 9<sup>th</sup> grade**



Source: Minnesota Student Survey, 2001

have been victims of physical or sexual abuse. Moreover, key protective factors that normally shield and strengthen young people may not be present. Though one must consider each young person individually, those interacting with adolescents should be aware that emotional turmoil, high-risk behavior, and lack of protective factors may heighten the possibility that suicidal thinking is also present.

For further information about suicide and suicide prevention in Minnesota, contact Candy Kragthorpe (651-281-9833) or Barry Dunayer (651-281-9941) at the Minnesota Department of Health.

We would like to thank Tabatha Powell, Prevention Specialist at the Centers for Disease Control and Prevention, for her contributions to this article.



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The *Population Health Assessment Quarterly* is funded by the federal Centers for Disease Control and Prevention (CDC) Assessment Initiative Grant (Award #U82/CCU514903).

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- <sup>12</sup> See for example the following reports from the Minnesota Department of Human Services: *Minnesota Student Survey—Alternative Schools and Area Learning Centers*, July 1999; *Minnesota Student Survey—Juvenile Correctional Facilities*, September 1999; *Minnesota Student Survey—Residential Behavioral Treatment Facilities*, July 1999.
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- <sup>14</sup> Ibid.
- <sup>15</sup> The emotional distress questions in the Minnesota Student Survey are similar to some of the questions in the larger K6 and K10 screening scales for nonspecific psychological distress. The K6 and K10 scales ask about six or ten different mental or feeling states respectively. The K6 screening scale is used by the National Center for Health Statistics in the National Health Interview Survey to screen for mood or anxiety disorder. More information can be found at <http://www.hcp.med.harvard.edu/ncs/K6-K10>.
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