

Characteristics of Impulsive Suicide Attempts and Attempters

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Suicide attempts often are impulsive, yet little is known about the characteristics of impulsive suicide. We examined impulsive suicide attempts within a population-based, case-control study of nearly lethal suicide attempts among people 13-34 years of age. Attempts were considered impulsive if the respondent reported spending less than 5 minutes between the decision to attempt suicide and the actual attempt. Among the 153 case-subjects, 24% attempted impulsively. Impulsive attempts were more likely among those who had been in a physical fight and less likely among those who were depressed. Relative to control subjects, male sex, fighting, and hopelessness distinguished impulsive cases but depression did not. Our findings suggest that inadequate control of aggressive impulses might be a greater indicator of risk for impulsive suicide attempts than depression.

In 1999 suicide was the third most common cause of death among adolescents and young adults between the ages of 15 and 34 years (National Center for Injury Prevention and Control, 2002). Suicide attempts often are impulsive (Williams, Davidson, & Montgomery, 1980), calling into question the utility of existing suicide prevention strategies which often rely on the identification and referral of individuals at risk (Centers for Disease Control [CDC], 1992; Potter, Powell, & Kachur, 1995). Preventing impulsive suicide attempts may require different strategies.

Researchers have noted an increase in impulsive behavior immediately prior to suicide attempts (Hall, Platt, & Hall, 1999), as well as a positive association between measures of

impulsivity and suicidal behavior (Kingsbury, Hawton, Steinhardt, & James, 1999; Pfeffer, Jiang, & Kakuma, 2000). Prior studies have also found that many suicide attempts are made impulsively (Brown, Overholser, Spirito, & Fritz 1991; Kost-Grant, 1983; O'Donnell, Farmer, & Catalan, 1996; Read, 1997; Williams et al., 1980). Estimates of the proportion of suicide attempts that are made impulsively vary widely depending on the definitions used and the sample studied. Some estimates are based on the characteristics of the attempt and the amount of planning involved (Brown et al., 1991; O'Donnell et al., 1996). Another approach is to examine the amount of time spent contemplating the suicide attempt. For example, Williams and colleagues

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(1980) found that 40 percent of hospital patients treated for self-injury reported less than 5 minutes premeditation.

Although research has consistently shown that a high percentage of suicide attempts are impulsive, few studies have examined how the characteristics of impulsive suicide attempts differ from those of nonimpulsive attempts. Additional information about the characteristics of impulsive suicide attempts and those making them is necessary for the development of effective prevention strategies.

The current study employed the conservative criterion of less than 5 minutes premeditation suggested by Williams and colleagues (1980) to categorize survivors of nearly lethal suicide attempts as impulsive or nonimpulsive attempters. We examined the following characteristics of the suicide attempts: time of day the attempt was made, perceived likelihood of discovery, type of method, consideration of other methods, expectation of death, and whether this was the first suicide attempt made by the subject. We also examined differences in the medical treatment required, the physician's perceptions regarding the severity of injuries or toxicity associated with the attempt, and the likelihood of recovery.

We sought to test four hypotheses concerning the characteristics of individuals who make impulsive and nonimpulsive suicide attempts. First, as indicated by previous research, we anticipated that poor impulse control might serve as a common link across multiple impulsive and health risk behaviors (Cairns, Peterson, & Neckerman, 1988). We hypothesized that impulsive suicide attempts would be more likely among those who engaged in other impulsive behaviors such as fighting, ending employment without another job, having multiple sex partners, or being arrested. Second, we expected that the disinhibiting effect of alcohol use immediately prior to the suicide attempt might be associated with impulsive suicide attempts (Kendall, 1983). Third, the results from previous research suggest that individuals who make impulsive suicide attempts are less depressed than those who make nonimpulsive suicide attempts (Brent, 1987; Brown et al., 1991; Williams et al., 1980); consequently, we expected depression and hopelessness to be in-

versely associated with impulsive attempts. Finally, we tested for an association between type of suicide attempt and help-seeking behavior prior to the attempt. If impulsive suicide attempters are not planning suicide and are experiencing less depressive mood, then we would expect them to be less likely to have discussed suicide with others or to have sought help for emotional problems. Once the characteristics that distinguish impulsive attempters from nonimpulsive attempters are identified, it is important to determine whether these characteristics also distinguish impulsive attempters from the general population. Therefore, we also compared impulsive and nonimpulsive attempters to control subjects.

METHOD

Sample

This study is part of a larger population-based, case-control study of nearly lethal suicide attempts occurring within a defined catchment area of Houston, Texas. A brief summary of the methods used in the study is provided here. A more detailed description of the sample and procedures is available elsewhere in this supplement (see Kresnow et al.). The sample consisted of 153 case and 513 control subjects interviewed from November 1992 through September 1995. Participation in the study was limited to youths and young adults between the ages of 13 and 34 years residing in the central area of Houston, Texas, circumscribed by a major highway (Beltway 8).

Case Identification. During the study period, an evaluating psychiatric physician completed a form indicating the method and severity of injury for all suicide attempters presenting at three hospitals located within Beltway 8. The form, described in detail elsewhere (Potter et al., 1998), has been shown to provide a reliable assessment of the medical severity of the attempt. Nearly lethal suicide attempts were those where the attempter was likely to have died from suicide had they not received emergency medical or surgical intervention, or the attempter unequivocally em-

ployed a method with a high case-fatality ratio (i.e., gunshot wounds and hanging) and sustained an injury, regardless of severity. Over 75% of cases were interviewed within 7 days of their attempt, and all interviews were completed within 33 days. Kresnow and colleagues (this supplement) provide the details regarding how the random sample of community controls was selected and interviewed.

Measures

Impulsive Suicide Attempts. Case subjects were asked, "How much time passed between the time you decided to commit suicide and when you actually attempted suicide?" Responses were recoded into a single dichotomous variable (i.e., impulsive = less than 5 minutes, and nonimpulsive = 5 minutes or longer).

Characteristics and Consequences. A variety of characteristics of the attempt were examined, including the time of day the attempt occurred, expectations of death at the time of the suicide attempt, and whether other suicide methods were considered. Notification of other people also was assessed by asking "Before you attempted suicide, did you tell anyone that you were considering suicide, or leave any clues that you might be thinking about suicide?" and "After you attempted suicide, did you call anyone or tell anyone about it?" We assessed prior suicide attempts by asking, "Not counting this suicide attempt, have you ever tried to take your life before?" Each of these questions had "yes" or "no" response choices. Perceived likelihood of discovery was assessed by asking "Considering where and when you attempted suicide, what did you think the chances were that someone might find you before you died?" The three response choices (high, moderate or 50/50, and low) were recoded as a dichotomous variable indicating whether the respondent perceived a "high" chance of discovery.

Physicians' reports were used to assess the consequences and type of suicide attempt. Three consequences, each with three responses, were assessed. Physicians rated sever-

ity of the lesions/toxicity of the attempt (mild, moderate, or severe), the likelihood of recovery (good, complete recovery expected; fair, recovery expected with time; or poor, residuals expected), and the type of treatment required (first-aid and emergency room care; admission with routine treatment; or intensive care or special treatment). Method of suicide attempt also was determined by physician report. Violent attempts included those involving firearms, hanging, cutting, burning, jumping, or blunt instruments. Other attempts included ingestion of poison, pills, drugs, and stopping insulin.

Involvement in Other Impulsive Behaviors. Involvement in impulsive behaviors was assessed with a series of yes/no questions including the following: "Have you ever been arrested?" "Have you been in any fights in the past 12 months that came to swapping blows?" and "Have you ever quit a job without having another one to go to?" One question assessed the number of sexual partners: "How many different people have you had sex with in the past year" (response coded to reflect 3 or more partners in past year—yes/no).

Alcohol Use Prior To The Suicide Attempt. Alcohol consumption prior to the suicide attempt was assessed by asking respondents to report how many glasses of wine, bottles or cans of beer, or drinks of whiskey or liquor they consumed "in the three hours before your suicide attempt." Responses were recoded to indicate any alcohol consumption during this period versus none. As described by Kresnow and colleagues (this supplement), self-reports of alcohol use were highly consistent with the blood alcohol levels of those who were tested at the hospital. Because only 54% of the cases were tested for blood alcohol as part of their hospital visit and these cases may not be representative of the full sample, we used the self-reports of recent alcohol use in our analyses. As described by Powell et al. (this supplement), self-reports of alcohol consumption can include deliberate or unintentional misreporting.

Depressive Mood and Help-Seeking. The Center for Epidemiologic Studies Depression scale (CES-D) was used to assess depressive symptoms. The 20-item CES-D has been shown to have adequate test-retest reliability and a high degree of internal consistency (Radloff, 1977). Participants with CES-D scores above 15 were considered depressed (Radloff, 1977). Feelings of hopelessness about the future were assessed with the 20-item true-false Beck Hopelessness Scale. A dichotomous hopelessness variable was created, with scores greater than 8 coded as hopeless (Beck & Weishaar, 1990). This scale has shown high internal consistency and a strong agreement with clinical ratings of hopelessness (Beck, Weissman, Lester, & Trexler, 1974; Pillay & Wassenaar, 1997). In the current sample, respondents were asked to report whether they experienced symptoms of depression and hopelessness during the week before the suicide attempt (or the week before the interview, for control subjects). Both measures were found to have a high degree of internal consistency (Cronbach's α s were 0.93 for depression and 0.87 for hopelessness).

Lifetime and recent help-seeking behaviors were assessed with two sets of yes/no questions. The first question asked if respondents had "ever seen anyone for emotional problems, your nerves, or the way you were feeling or acting before your suicide attempt." The second set of questions assessed whether respondents "discussed suicide" in the "30 days before your suicide attempt" with any of the following: general physician, psychiatrist, nurse, clergy, teacher or counselor, hotline worker, other counselor or health professional, and friend or family member. Subjects who reported discussing suicide with any of these people were coded as "yes."

Analysis

A dichotomous outcome variable was created to indicate impulsive versus nonimpulsive suicide attempts based on the 5-minute criterion. We regressed the outcome variable on the characteristics and consequences of the suicide attempt. Separate logistic regression models were

used to calculate crude odds ratios (OR) and 95 percent confidence intervals (CI) for impulsive attempts for each characteristic and consequence. Next, we calculated separate bivariable logistic regression models to test the statistical significance of the demographic, behavioral, and psychosocial characteristics of the attempters. Finally, we completed a series of three multivariable logistic regression analyses to test the effect of each variable shown relevant in the bivariable analyses after adjusting for the influence of the other variables. In the first multivariable model, impulsive attempters were compared with nonimpulsive attempters on the characteristics of the attempts and the attempters. The last two logistic regression models were calculated to compare impulsive attempters to control subjects, and nonimpulsive attempters to control subjects on the characteristics of the attempters.

RESULTS

Within this sample of survivors of nearly lethal suicide attempts, 5% ($n = 7$) reported spending just 1 second and a total of 24% ($n = 36$) reported spending less than 5 minutes between the decision to attempt suicide and the actual attempt (impulsive attempters). The mean number of days between the attempt and the interview was similar for impulsive and nonimpulsive attempters (5.2 and 5.5, respectively).

Bivariable Results

Characteristics of the Attempts. Respondents who attempted suicide between 7:01 p.m. and 6:59 a.m. and those who used a violent method such as firearms, hanging, cutting, self-immolation, or jumping were significantly more likely to have made impulsive suicide attempts (Table 1). The association between perceptions of a high likelihood of discovery and increased risk for impulsive attempts approached statistical significance (p -value = 0.07). Attempters who expected that the attempt would be fatal were significantly less likely to have made an impulsive attempt. Although the percent of attempts that involved less than 5 minutes planning was

TABLE 1. Prevalence and Crude Odds Ratios for Impulsive Suicide Attempts by Characteristics and Consequences of the Suicide Attempt

	<i>n</i>	(% Impulsive)	OR	(95% CI)
Time of attempt				
7:00 a.m.–7:00 p.m.	73	(15.1)	1.00	
7:01 p.m.–6:59 a.m.	75	(32.0)	2.65*	(1.19–5.93)
Told someone after the attempt				
No	102	(25.5)	1.00	
Yes	45	(22.2)	0.84	(0.36–1.92)
Told someone before the attempt				
No	98	(22.5)	1.00	
Yes	52	(26.9)	1.27	(0.59–2.76)
Perceived a high chance of discovery				
No	90	(17.8)	1.00	
Yes	51	(31.4)	2.11	(0.95–4.71)
Used a violent method¹				
No	101	(18.8)	1.00	
Yes	48	(35.4)	2.37*	(1.09–5.13)
Expected to die				
No	39	(38.5)	1.00	
Yes	102	(16.7)	0.32*	(0.14–0.73)
Attempted suicide in the past				
No	78	(26.9)	1.00	
Yes	71	(21.1)	0.73	(0.34–1.55)
Considered another method				
No	109	(26.6)	1.00	
Yes	40	(15.0)	0.49	(0.19–1.28)
Lesions/toxicity				
Mild/moderate	114	(22.8)	1.00	
Severe	36	(27.8)	1.30	(0.56–3.05)
Reversibility				
Good (full recovery expected)	99	(22.2)	1.00	
Fair/poor	51	(27.5)	1.32	(0.61–2.88)
Treatment required				
ER care/hospital admission	68	(23.5)	1.00	
Intensive care/special treatment	82	(24.4)	1.05	(0.49–2.23)

Note. Cell sizes may not add to 153 due to missing data. *Denotes p -value ≤ 0.05 , Wald χ^2 test. ¹Violent methods include firearms, hanging, cutting, burning, or jumping/blunt trauma. Other methods include ingestion of poison, pills, drugs, and stopping insulin.

slightly lower among those who considered another suicide method (15%) relative to those who did not (27%), this difference was not statistically significant (p -value = 0.14).

Demographic Characteristics. Males were more likely than females to attempt suicide impulsively (31% versus 16%; OR = 2.44; 95% CI, 1.10–5.42). Race/ethnic background, age, years of formal education, and marital

status did not differentiate impulsive from nonimpulsive attempters (all p -values greater than 0.10).

Impulsive Behaviors. Impulsive suicide attempts tended to be more likely among attempters who were in a physical fight in the past year (OR = 2.14; p -value = 0.05). Respondents' reports of prior arrests, ending employment without having another position to start,

TABLE 2. Prevalence and Crude Odds Ratios for Impulsive Suicide Attempts by Impulsive Behaviors and Recent Alcohol Use

	<i>n</i>	(% Impulsive)	OR	(95% CI)
Ever arrested				
No	69	(20.3)	1.00	
Yes	81	(27.2)	1.47	(0.68–3.15)
In a physical fight (12 months)				
No	103	(19.4)	1.00	
Yes	47	(34.0)	2.14*	(0.99–4.65)
Ever quit job without having another position				
No	95	(20.0)	1.00	
Yes	55	(30.9)	1.79	(0.84–3.83)
3 or more sex partners (12 months)				
No	117	(24.8)	1.00	
Yes	31	(22.6)	0.89	(0.35–2.27)
Consumed alcohol within 3 hrs. before attempt				
No	109	(22.0)	1.00	
Yes	39	(30.8)	1.57	(0.70–3.56)

Note. Cell sizes may not add to 153 due to missing data. *Denotes p -value ≤ 0.05 , Wald χ^2 test.

having multiple sex partners, and consuming alcohol within 3 hours prior to the attempt did not distinguish impulsive attempters from nonimpulsive attempters (Table 2).

Depressive Mood. Attempters who scored above 15 on the CES-D were significantly less likely to have attempted impulsively (Table 3). Hopelessness also tended to be associated with lower likelihood of impulsive attempts; however, this finding did not attain statistical significance (OR = 0.53; p value = 0.11). Having ever sought help for emotional problems or having discussed suicide with someone in the 30 days prior to the suicide attempt did not distinguish impulsive attempters from nonimpulsive attempters.

Multivariable Results

The correlates of impulsive attempts found relevant in the bivariable models were included in a series of three multivariable logistic regression models. The first model predicted risk for impulsive suicide attempts among case subjects. Impulsive attempts were more likely among those who had been in a fight in the past 12 months (OR = 3.12; 95% CI, 1.18–8.24) and less likely among those

who were depressed (OR = 0.17; 95% CI, 0.04–0.76). Gender, time of day, perceived likelihood of discovery, violent method, and hopelessness no longer differentiated impulsive attempters from nonimpulsive attempters. The inverse association between impulsive attempts and expectation of death approached, but did not attain, statistical significance (OR = 0.38; 95% CI, 0.12–1.22; p -value = 0.1).

The final two sets of logistic regression models compared control subjects to impulsive attempters and to nonimpulsive attempters on the characteristics of the attempters that were statistically significant in the bivariable models (i.e., gender, depression, hopelessness, and involvement in a fight). Compared with control subjects, impulsive attempters were more likely to be male, have a high hopelessness score, and have been involved in physical fights (Table 4). Symptoms of depression did not distinguish case subjects who made impulsive suicide attempts from control subjects. Compared with control subjects, nonimpulsive attempters were more likely to have high depression scores and high hopelessness scores. Gender and involvement in physical fights did not distinguish nonimpulsive suicide attempters from control subjects.

TABLE 3. Prevalence and Crude Odds Ratios for Impulsive Suicide Attempts by Depression, Hopelessness, and Help-Seeking Behavior

	<i>n</i>	(% Impulsive)	OR	(95% CI)
Depressed				
No	20	(50.0)	1.00	
Yes	130	(20.0)	0.25*	(0.09–0.66)
Hopelessness				
No	45	(33.8)	1.00	
Yes	101	(20.8)	0.53	(0.24–1.15)
Ever seen anyone for emotional problems				
No	97	(24.7)	1.00	
Yes	51	(21.6)	0.84	(0.32–1.88)
Discussed suicide (in 30 days before the attempt)				
No	106	(27.4)	1.00	
Yes	44	(15.9)	0.50	(0.20–1.25)

Note. Cell sizes may not add to 153 due to missing data. *Denotes p -value ≤ 0.05 , Wald χ^2 test.

DISCUSSION

Our findings indicate that 24% of survivors of nearly lethal suicide attempts spent less than 5 minutes between the decision to attempt suicide and the actual attempt; which is consistent with other research on hospitalized survivors (Williams et al., 1980). Also, the pattern of associations between the characteristics of the attempt and impulsive nature of the attempt is what might be expected when very little time is spent planning the attempt or contemplating the consequences. Those who made their attempt within 5 minutes of deciding to attempt suicide tended to be less likely to have considered another method of suicide, perceived a greater likelihood of discovery, and had a lower expectation of death. These findings are consistent with the description of such attempts as impulsive.

One notable exception to this pattern was for reports of telling anyone that they were considering suicide or leaving clues that they might be thinking about suicide. Contrary to what one would expect, impulsive attempters were as likely as nonimpulsive attempters to report leaving clues or telling someone that they were considering suicide. Unfortunately, the nature of this communication is unclear. It is possible that the impulsive attempter may have called someone or otherwise communicated their intentions within the 5 minutes between the point that they decided to attempt

and their actual attempt; Or, more likely, this communication took place before the impulsive attempter actually decided to attempt suicide. The fact that approximately one third of impulsive and nonimpulsive attempters reported telling someone that they were considering suicide raises the question of whether this communication may be an opportunity for intervention. Additional research is needed to understand what those who go on to make impulsive attempts actually say to their confidante about their suicidal thoughts, how the confidante interprets this information, and how they respond.

The bivariable association between use of a violent method and impulsive attempts suggests a paradox between expectations and method choice. Impulsive attempts that involve a violent method such as firearms, jumping, or hanging may result in death, regardless of the expectations and likelihood of discovery.

It is reasonable to expect that those who consider alternate methods for suicide, secure a location that is less likely to permit discovery, and have a higher expectation of death have more severe injuries following a suicide attempt. However, the impulsive attempters in our sample were just as likely as the nonimpulsive attempters to experience severe lesions/toxicity, have less than good reversibility of their condition, and require special treatment or intensive care. These findings are

TABLE 4. Adjusted Odds Ratios for Impulsive and Nonimpulsive Suicide Attempts from Multivariable¹ Analyses of Depression, Hopelessness, Physical Fights, and Gender

	Impulsive Cases		Nonimpulsive Cases	
	Adj. OR	(95% CI)	Adj. OR	(95% CI)
Depressed				
No	1.00		1.00	
Yes	2.18	(0.86–5.55)	7.17*	(3.34–15.38)
Hopelessness				
No	1.00		1.00	
Yes	8.95*	(3.71–21.55)	11.91*	(6.69–21.19)
Physical Fights				
No	1.00		1.00	
Yes	3.07*	(1.38–6.82)	1.50	(0.79–2.86)
Gender				
Female	1.00		1.00	
Male	3.15*	(1.38–7.18)	1.63	(0.94–2.84)

Note. Cell sizes may not add to 153 due to missing data. *Denotes p -value ≤ 0.05 , Wald χ^2 test. ¹The comparison group for both sets of models consisted of the 513 control subjects.

consistent with the use of a violent method and suggest that, despite a relative lack of planning and lower expectations of death, impulsive suicide attempts present a clear risk for serious injury and do not appear less harmful than planned attempts. This finding is consistent with estimates suggesting that 50% or more of suicides and nonfatal violent attempts are impulsive (Hoberman, & Garfinkel, 1988; Kost-Grant, 1983; O'Donnell et al., 1996; Peterson, Peterson, O'Shanick, & Swann, 1985).

The current finding that 24% of the cases were considered impulsive is somewhat lower than what others have observed (e.g., 40% reported by Williams et al., 1980). In particular, as mentioned above, the studies of suicide victims and violent attempters often report that the majority of attempts were impulsive. This discrepancy suggests that, although our sample consists of those who survived nearly lethal suicide attempts, it most likely provides an underestimate of the proportion of fatal suicide attempts that were made impulsively. Moreover, even within comparable studies of a range of attempters there is considerable variability in the proportion of attempters that are considered impulsive. Additional research is needed to identify the best criteria to use for classifying an attempt as impulsive. By

standardizing these criteria we can better understand the impulsive nature of attempts within different populations and across different outcomes.

Involvement in physical fights was the only impulsive behavior studied that was associated with impulsive suicide attempts. Impulsive suicidal behavior and involvement in physical fights differ from the other types of behaviors examined in the amount of aggression associated with the behavior. Perhaps impulsive suicide attempts are more strongly associated with the inability to control aggression-specific impulses than generalized impulsivity. Additional research is needed to replicate these findings with other measures that distinguish between general and aggressive forms of impulsivity.

Contrary to our hypotheses, alcohol use prior to the suicide attempt was not significantly associated with risk for impulsive suicide attempts. Among the attempters who reported drinking alcohol within 3 hours prior to their attempt, 30.8% of the attempts were impulsive. Among those who had not consumed alcohol immediately prior to their attempt, 22% of the attempts were impulsive. This difference was not statistically significant. Perhaps the causal sequence of the association between alcohol use and suicide

attempts may differ by type of attempt. Whereas impulsive attempts might be a direct consequence of the disinhibition caused by alcohol consumption (Kendall, 1983), individuals who are planning to attempt suicide might intentionally consume alcohol to increase their "conviction" to complete the suicide attempt (Khantzian, 1985).

Overall, the majority of the attempters scored high on the depression scale. Although impulsive attempts occurred among both depressed and nondepressed attempters, the depressed attempters were significantly less likely to have attempted impulsively. These findings are consistent with the results from other studies of suicide survivors (Brent, 1987; Brown et al., 1991; Williams et al., 1980). Whereas planned suicide attempts often result from chronic mental health problems such as depression, researchers have noted a tendency for impulsive suicide attempts to be immediately preceded by interpersonal conflicts and have suggested that impulsive suicide attempts might be a response to these conflicts rather than an actual desire to die (Kost-Grant, 1983; Smith & Crawford, 1986; Williams et al., 1980). The finding that impulsive attempts are more likely to occur at night may reflect the fact that this is the time when these interpersonal conflicts are most likely to occur. Additional research is necessary to describe the circumstances that facilitate impulsive and nonimpulsive suicide attempts.

The hypothesis that impulsive attempters are less likely to discuss suicide or seek help for emotional problems prior to their suicide attempt was not supported by the data. Although the percentage of attempters who were impulsive was considerably lower among those who had sought help or discussed suicide, these differences were not statistically significant. If future research with larger samples also finds no association, it would suggest that impulsive attempters might be identified before the attempt by their help-seeking behavior, just as nonimpulsive attempters may be so identified. However, only 34% of the entire sample of attempters reported ever seeing someone for emotional problems before the suicide attempt, and less than 30 percent re-

ported discussing suicide with anyone in the 30 days before the attempt. To the extent that early identification and referral can reduce risk for suicide, efforts to improve accessibility of mental health care and to reduce the stigma associated with discussing suicide might reduce risk for nonimpulsive and impulsive suicide attempts.

Among the attempters, multivariable analyses indicated that impulsive attempts were more likely for subjects who scored relatively lower on depression and were involved in physical fights. Moreover, in the multivariable analyses comparing impulsive attempters and nonimpulsive attempters to control subjects, involvement in physical fights was associated with risk for impulsive suicide attempts but was not associated with nonimpulsive attempts. Depression, on the other hand, was significantly associated with risk for nonimpulsive attempts but not impulsive attempts. Hopelessness was positively associated with both impulsive and nonimpulsive suicide attempts. Perhaps a sense of ambivalence about the future is a component of most impulsive and nonimpulsive suicide attempts. For most suicide attempters a sense of hopelessness combined with the pain of depression might have increased the person's desire to die, contributing to suicidal ideation and more premeditated suicide attempts. A minority of suicide attempters may be experiencing fewer symptoms of depression but have an ambivalence about the future combined with a difficulty controlling aggressive impulses that increases their risk for impulsive suicide attempts. This perspective is consistent with the hypothesis proposed by Apter et al. (1995) that there are at least two types of suicidal behaviors: "a planned desire to die (depression) and feelings and thoughts of the moment (impulse control)" (p. 917).

There are at least three limitations of this study that should be considered. First, with the exception of severity of injury, these data are from self-reports and are therefore vulnerable to misreporting. Because the data were collected after the suicide attempt, it is possible that the experience of the attempt influenced responses. Nonetheless, self-report

data are the most direct way to estimate impulsiveness of suicidal behavior. Also, the fact that the interviews were confidential and most were completed within 7 days of the attempt is likely to bolster the validity of participants' reports. Relatedly, the finding that the length of time between the attempt and interview was similar for both types of attempters eliminates the possibility that differential lag times could account for the differences observed between impulsive and nonimpulsive attempters. Second, subjects who were considered impulsive attempters based on the criteria of less than 5 minutes planning might have planned previously how they could commit suicide without actually deciding to make an attempt until immediately before the attempt. However, as suggested by Williams and colleagues (1980), the fact that less than five minutes was available between the decision and the actual attempt suggests that the impulsive suicidal act was not the result of a plan. Finally, the relatively small sample of cases limited the statistical power for detecting differences between impulsive and nonimpulsive attempters and for examining behaviors such as illicit drug abuse. Efforts to replicate these findings with larger samples are needed.

In summary, the percentage of suicide attempts that are impulsive and the risk for injury associated with these attempts indicate a clear need for strategies to prevent impulsive suicide. These data also suggest the need to broaden the scope of suicide prevention strategies beyond our current, somewhat limited ways of thinking about mental health. For example, suicidal ideation among impulsive attempters may be more transient and temporary than that experienced by persons with chronic depression. By limiting our approach to the identification and treatment of depressive symptoms, we may miss many preventable suicides. Existing suicide prevention strategies such as screening programs, crisis centers and hotlines, educating gatekeepers, and peer support programs may need to expand their conceptualization of suicide risk factors to include those related to impulsive attempts. In our study, hopelessness and involvement in physical fights differentiate impulsive attempters from control subjects, and time of day the attempt occurred is associated with impulsive attempts. These findings suggest that additional effort is needed to understand the interpersonal and situational factors, as well as the psychological characteristics, that influence risk for impulsive suicide attempts.

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