

Precontemplated and Impulsive Suicide Attempts Among Individuals With Alcohol Dependence*

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ABSTRACT. Objective: Alcohol dependence confers risk for suicidal behavior. Some suicide attempts are precontemplated, whereas other attempts are impulsive. The purpose of this study was to compare characteristics and correlates of impulsive and precontemplated suicide attempts. **Method:** Data were derived from analysis of The Collaborative Study on the Genetics of Alcoholism (COGA), which is a six-site family pedigree study of individuals in treatment for alcoholism (probands), relatives of probands, and control families. Subjects in the analysis were age 18 years or older with a diagnosis of current alcohol dependence according to the Diagnostic and Statistical Manual, Third Edition, Revised. Individuals reporting a lifetime history of one or more suicide attempts were divided into two strata: suicide attempters with a history of suicidal ideation that persisted for a week or more, conceptualized as attempters showing precontemplation ($n = 330$), and suicide

attempters without a history of persistent ideation, conceptualized as impulsive attempters ($n = 343$). These groups were compared with subjects with no history of attempts (nonattempters; $n = 3,115$). **Results:** Precontemplated acts were carried out with greater intent and were more likely to result in medical treatment. Dependence on illicit drugs and history of depression were more likely among attempters showing precontemplation. Impulsive attempts were more likely to be carried out by women and individuals with higher levels of alcohol-related aggression. **Conclusions:** Prevention of precontemplated suicide attempts by individuals with alcohol dependence should include a focus on recognition and treatment of depressive syndromes. Alcohol-related aggression was elevated among impulsive suicide attempters. Prevention efforts may include interventions targeting aggression. (*J. Stud. Alcohol* 67: 95-101, 2006)

ALCOHOL DEPENDENCE IS A PREVALENT disorder (Grant et al., 2004a). Postmortem studies in the United States consistently show that *at least* one third of persons who commit suicide have an alcohol-use disorder (e.g., Conwell et al., 1996). Individuals with alcohol dependence are at approximately 9.8 (95% confidence interval [CI]: 9.0-10.7) times greater risk for completed suicide compared with the general population (Wilcox et al., 2004) and approximately 6.5 (CI: 3.6-11.5) times greater risk for attempted suicide compared with individuals without alcohol dependence (Kessler et al., 1999). These data support the fact that suicide prevention efforts must include a focus on alcoholism.

Suicidal behavior is heterogeneous; suicide attempts can be impulsive, or they can reflect days or weeks of fore-

thought and preparation (Brent, 1987; Kessler et al., 1999). Data show that depression is associated with precontemplated acts of suicide (Brown et al., 1991; Simon et al., 2001). Most (e.g., Brent, 1987; Hamdi et al., 1991; Mann et al., 1992), but not all studies (e.g., Kessler et al., 1999) report that acts of suicide preceded by contemplation and preparation are characterized by higher intent to die and greater lethality than impulsive attempts. It may be hypothesized that aggression and related constructs are more strongly associated with impulsive suicidal behavior, yet studies addressing this hypothesis have reported inconsistent results (Mann et al., 1996; Mann and Malone, 1997; Simon et al., 2001). There are limited data on other variables that distinguish impulsive and nonimpulsive acts of suicide (for a review, see Conner, 2004).

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The heterogeneity of suicidal behavior indicates that a single prevention strategy is inadequate (Brent, 1987; Kessler et al., 1999). Suicidal acts that are preceded by an extensive period of forethought, presumably in the context of depression, may be especially amenable to prevention strategies that emphasize risk recognition and treatment; for example, through universal screening (Bruce, 1999; Shaffer et al., 2004). Risk among individuals who make impulsive suicidal attempts pose a challenge to prevention because those persons enter into a suicidal state rapidly (Kessler et al., 1999). Reducing access to methods of suicide—for example, handgun restrictions (Shenassa et al., 2003), safe storage of firearms (Grossman et al., 2005), or capping the number of tablets in select over-the-counter medications (Hawton et al., 2004)—is one potential prevention strategy. The design of additional strategies to prevent this type of suicidal behavior depends on an improved understanding of its determinants (Kessler et al., 1999). Progress is especially important in designing prevention strategies suitable for individuals with alcohol and other substance use disorders because this population is especially prone to impulsive acts of suicide (Borges et al., 2000; Suominen et al., 1997).

The current study compares three alcohol-dependent groups: attempters who considered an act of suicide for at least 1 week, conceptualized as individuals making precontemplated attempts; attempters with no history of persistent ideation, conceptualized as individuals making impulsive attempts; and nonattempters. We hypothesized that attempts associated with precontemplation will show higher suicide intent, consistent with prior reports (Brent, 1987; Hamdi et al., 1991; Mann et al., 1992). We hypothesized that impulsive attempts at suicide are more likely to be carried out while drinking, given disinhibiting effects of alcohol, among other effects (Hufford, 2001). We also hypothesized that individuals carrying out precontemplated attempts will be more likely to have a history of depression that is independent of alcoholism, and impulsive attempters will be more likely to have antisocial personality disorder (ASPD) and higher levels of aggression, consistent with the notion that aggressive individuals are prone to carry out impulsive acts of suicide (Conner et al., 2003a). We also explored gender patterns because men and women with alcoholism may show different correlates or patterns of suicidal behavior (Conner et al., 2003b). There are meager data on suicidal behavior among alcohol-dependent women, yet this population is at high risk for attempted suicide (Preuss et al., 2002) and completed suicide (Wilcox et al., 2004).

Method

Data were extracted from the Collaborative Study on the Genetics of Alcoholism (COGA), a six-site family pedi-

gree study of adults in treatment for alcoholism (probands), their relatives, as well as control families recruited through a variety of methods (e.g., drivers' license records). Data were gathered using the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA; Bucholz et al., 1994; Bucholz et al., 2000; Hesselbrock et al., 1999) that assesses 17 disorders that are listed in Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R; American Psychiatric Association, 1987). The alcohol and mood sections are extensive and are used to categorize individuals who have experienced one or more depressive episodes into two groups, those with one or more "substance-induced" depressive episodes but no "independent" episodes (history of substance-induced depression), and those who have had one or more independent depressive episodes, regardless of a history of substance-induced depression (history of independent depression). For the present investigation, subjects with current alcohol dependence, as defined by the DSM-III-R regardless of proband status, were included ($N = 3,788$).

Suicide attempt history (present/absent) was determined by the question: "Have you ever tried to kill yourself?" Subjects were also asked, "Have you ever thought about killing yourself?" (and, if yes) "Did those thoughts persist for at least 7 days in a row?" Based on these suicide attempt and ideation questions, the suicide attempter groups were divided into two strata: lifetime attempters with a history of persistent suicidal ideation, conceptualized as individuals carrying out precontemplated attempts, and lifetime attempters with no history of persistent suicidal ideation, conceptualized as individuals carrying out impulsive attempts. These two groups were compared with nonattempters (regardless of presence or absence of suicidal ideation). Characteristics of the attempts were obtained through a series of questions (e.g., "Did you really want to die?"). If more than one attempt occurred, the questions were based on the most serious attempt.

Eleven correlates of suicide attempts among alcohol-dependent individuals were identified in a prior analysis of the COGA data set (Preuss et al., 2002): (1) female gender, (2) younger age, (3) currently unemployed (present/absent), (4) separated/divorced (present/absent), (5) number of alcohol-dependence criteria, (6) number of alcohol-related physical problems (e.g., cirrhosis), (7) number of types of alcohol-related aggressive behavior, (8) any history of independent depression (present/absent), (9) history of substance-induced depression but no history of independent depression (present/absent), (10) number of illicit substances ever dependent on, and (11) proband status (yes/no). We carried these correlates over to the current analyses.

Subjects were categorized into one of three depression groups: individuals with a history of independent depression regardless of history of substance-induced depression (independent depression), those with a history of substance-

TABLE 1. Unadjusted comparisons of individuals making impulsive attempts, individuals making precontemplated attempts, and nonattempters

Characteristics	Impulsive attempts (<i>n</i> = 343)	Precontemplated attempts (<i>n</i> = 330)	Nonattempters (<i>n</i> = 3,115)	ANOVA or χ^2	Post hoc test <i>p</i> value and effect size
Female gender, <i>n</i> (%)	190 (55.4%)	168 (50.9%)	976 (31.3%)	117.43	<.001 ^{a,m}
Age, mean (SD) years	36.56 (10.29)	35.57 (9.74)	38.36 (12.33)	10.72	<.001 ^{a,s}
Currently not employed, <i>n</i> (%)	175 (51.0%)	176 (53.3%)	1,228 (39.4%)	30.19	<.001 ^{a,s}
Separated/divorced, <i>n</i> (%)	110 (32.1%)	122 (37.0%)	781 (25.1%)	27.02	<.001 ^{a,s}
No. alcohol-dependence criteria, mean (SD)	6.79 (2.04)	7.08 (1.92)	5.85 (2.08)	78.05	<.001 ^{a,m}
No. alcohol-related physical problems, mean (SD)	0.55 (0.89)	0.65 (0.94)	0.28 (0.72)	49.23	<.001 ^{a,m}
No. alcohol-related aggressive behaviors, mean (SD)	3.04 (1.44)	2.83 (1.51)	2.24 (1.51)	61.27	<.001 ^{a,m}
No. illicit substances dependent on, mean (SD)	1.33 (1.32)	1.76 (1.52)	0.93 (1.25)	72.95	<.001 ^{a,b,m}
History independent depression, <i>n</i> (%)	77 (22.5%)	107 (32.4%)	409 (13.2%)	97.03	<.001 ^{a,b,m}
History substance-induced depression, <i>n</i> (%)	131 (38.3%)	181 (54.8%)	831 (26.7%)	123.50	<.001 ^{a,b,m}
Antisocial personality disorder (ASPD), <i>n</i> (%)	73 (22.6%)	90 (28.9%)	442 (14.7%)	50.63	<.001 ^{a,b,s}
Proband status, <i>n</i> (%)	169 (49.3%)	167 (50.6%)	1,132 (36.3%)	43.16	<.001 ^{a,s}

Notes: ANOVA = analysis of variance. Effect size = magnitude of effect as described by Cohen (1992) on post hoc tests: *d* for *t* (0.20 = small, 0.50 = medium, 0.80 = large); *w* for χ^2 (0.10 = small, 0.30 = medium, 0.50 = large). The effect sizes refer to the largest difference between an attempter group and nonattempters. ^aBoth suicide attempter groups differed from nonattempters on post hoc tests; ^bprecontemplated suicide attempters differed from impulsive attempters on post hoc tests; ^s = small effect size; ^m = medium effect size.

induced depression but no history of independent depression (substance-induced depression), and individuals with no history of depression (nondepressed). The alcohol-related aggression measure was composed of five questions with a range of 0 to 5 ($\alpha = .71$). The questions assessed whether or not each of the following occurred three or more times while drinking: (1) got into arguments, (2) hit things or throw something, (3) hit a significant other or family member, (4) hit anyone else without getting into a fight, and (5) got into a physical fight.

The aforementioned study of attempted suicide using COGA excluded subjects with ASPD (Preuss et al., 2002), but these subjects were included in the present study. The COGA employs procedures to distinguish substance-related symptoms of ASPD (Bucholz et al., 1994; Bucholz et al., 2000; Hesselbrock et al., 1999). To sharpen the distinction with alcohol-related aggression, childhood and adult misbehaviors attributed exclusively to alcohol or other substance use were not considered when making a diagnosis of ASPD or in these analyses. In other words, each symptom of ASPD was considered to meet criteria only if it was determined to occur apart from substance use.

Multinomial logistic regression (Hosmer and Lemeshow, 2000) was used to conduct comparisons between the three response variables (attempters showing precontemplation versus nonattempters; impulsive attempters versus nonattempters; attempters showing precontemplation versus impulsive attempters). All predictors were forced simultaneously into the model. In the first multinomial logistic regression analysis, the two attempter groups were compared with nonattempters, which served as the reference group. In the second multinomial analysis, the reference group was redefined as impulsive attempters to allow for direct comparison of precontemplated attempters with impulsive attempters. The sampling allowed multiple mem-

bers from the same family to be selected. Average (SD) family size in the analysis was 2.6 (1.9), with a range from 1 to 17. To adjust estimates for nonindependence of observations, robust standard errors adjusted for clustering of subjects within family were calculated using STATA version 8.2 (Stata Corp., College Station, TX). This analytic technique assumes that observations are independent between clusters (families) but not necessarily within them.

Results

Unadjusted comparisons among individuals carrying out precontemplated attempts (*n* = 330, 8.7%), impulsive attempts (*n* = 343, 9.1%), and with no history of attempts (*n* = 3,115, 82.2%) are presented in Table 1. For each variable, both attempter groups differed from nonattempters. Suicide attempters showing precontemplation were more likely than those making impulsive attempts to have a history of independent depression, history of substance-induced depression, ASPD, and number of illicit drugs ever dependent on, indicating that precontemplated attempts are associated with high comorbidity. As hypothesized, depression was strongly represented among suicide attempters showing precontemplation; 87.2% were represented by independent (32.4%) or substance-induced (54.8%) depression.

Characteristics of suicide attempts are compared in Table 2. Precontemplated attempts were more likely to result in medical treatment and hospital admission, which may suggest greater lethality. They were also more likely to involve planning, a strong desire to die, and an expectation of fatality, indicating greater suicide intent, consistent with our hypothesis. Contrary to our hypothesis, precontemplated attempts and impulsive attempts were equally likely to be carried out while drinking. Individuals carrying out precontemplated attempts were also more likely to make

TABLE 2. Descriptive data on suicide attempts^a

Variable	Impulsive attempts (<i>n</i> = 343) <i>n</i> (%)	Precontemplated attempts (<i>n</i> = 330) <i>n</i> (%)	χ^2	<i>p</i> value and effect size
1 attempt	225 (65.6)	153 (46.4)	25.27	<.001 ^m
≥2 attempts	117 (34.2)	176 (53.5)	25.35	<.001 ^m
Context of attempt				
Feeling depressed	307 (89.5)	322 (97.6)	17.93	<.001 ^m
Feeling extremely good or high	15 (4.4)	16 (4.8)	0.09	.456
While drinking	186 (54.4)	184 (55.8)	0.13	.390
While using drugs	109 (31.8)	129 (39.1)	3.93	.028 ^s
Psychosis	19 (5.5)	39 (11.8)	8.42	.003 ^s
Treatment for attempt				
Medical treatment	154 (44.9)	180 (54.5)	6.26	.008 ^s
Admitted to hospital	111 (32.4)	145 (43.9)	9.56	.001 ^s
Level of intent				
Strong desire to die	162 (47.4)	236 (71.7)	41.25	<.001 ^l
Expectation of fatality	167 (48.8)	222 (67.3)	28.27	<.001 ^m
Made suicide plan	199 (58.0)	283 (85.8)	63.67	<.001 ^l

Notes: Effect size = magnitude of effect as described by Cohen (1992): *w* for χ^2 (0.10 = small, 0.30 = medium, 0.50 = large). ^aRefers to most serious suicide attempt (if more than one attempt); ^s = small; ^m = medium; ^l = large.

multiple attempts, to attempt while using drugs, and to show indications of psychosis.

Results of the multinomial logistic regression analyses are presented in Table 3. One (0.3%) attempter showing precontemplation, 4 (1.2%) impulsive attempters, and 34 (1.1%) nonattempters described in Table 1 were excluded from the analyses because of missing data. Of greatest interest is the direct comparison of the attempter groups, shown in the last column of the table. This column reflects a comparison of precontemplated suicide attempters with impulsive suicide attempters, who served as the reference group. There were five statistically significant results from this comparison of the attempter groups that concerned in-

dependent depression, substance-induced depression, alcohol-related aggression, number of illicit drugs ever dependent on, and gender.

Depression was a robust correlate of suicide attempts; both types of depression show associations with both types of suicide attempts. As hypothesized, individuals carrying out precontemplated attempts were especially likely to have a history of depression. However, this was the case whether or not depression was strictly substance-induced or there was a history of one or more episodes of depression independent of substance use. The direct comparison of the attempter groups (last column of the table) confirmed that histories of independent depression (odds ratio [OR] = 4.60,

TABLE 3. Multivariate comparisons of individuals making impulsive attempts, individuals making precontemplated attempts, and nonattempters

Characteristics	Impulsive attempts vs nonattempters OR (95% CI)	Precontemplated attempts vs nonattempters OR (95% CI)	Precontemplated attempts vs impulsive attempts OR (95% CI)
Demographic			
Female gender	3.60 (2.78-4.66)	2.41 (1.82-3.19)	0.67 ^a (0.47-0.95)
Age	0.99 (0.98-1.01)	0.98 (0.97-1.00)	0.99 (0.97-1.01)
Currently not employed	1.22 (0.95-1.58)	1.36 (1.05-1.76)	1.11 (0.80-1.54)
Separated/divorced	1.05 (0.81-1.37)	1.20 (0.92-1.57)	1.14 (0.81-1.59)
Alcohol			
No. alcohol dependence criteria	1.08 (1.00-1.17)	1.12 (1.03-1.21)	1.03 (0.93-1.15)
No. alcohol-related physical problems	1.24 (1.07-1.44)	1.29 (1.12-1.48)	1.04 (0.90-1.19)
No. alcohol-related aggressive behaviors	1.33 (1.21-1.46)	1.05 (0.95-1.15)	0.79 ^a (0.69-0.89)
Comorbidity			
No. illicit substances dependent on	1.02 (0.92-1.12)	1.20 (1.10-1.32)	1.18 ^b (1.05-1.33)
History independent depression	1.83 (1.32-2.54)	8.42 (5.64-12.55)	4.60 ^b (2.80-7.56)
History alcohol-induced depression	1.35 (1.01-1.79)	5.91 (4.06-8.61)	4.39 ^b (2.81-6.87)
Antisocial personality disorder (ASPD)	1.35 (0.96-1.89)	1.39 (1.02-1.89)	1.03 (0.68-1.55)
Proband status	1.32 (1.00-1.75)	1.13 (0.85-1.50)	0.86 (0.61-1.21)

^aLower probability of characteristic among precontemplated attempters compared with impulsive attempters; ^bhigher probability of characteristic among precontemplated attempters compared with impulsive attempters.

CI: 2.80-7.56) and substance-induced depression (OR = 4.39, CI: 2.81-6.87) were more likely among attempters showing precontemplation.

Consistent with our hypothesis, alcohol-related aggression was elevated among impulsive suicide attempters compared with nonattempters (OR = 1.33, CI: 1.21-1.46). The result may be interpreted to indicate that a one-unit increase on this measure was associated with a 33% (CI: 21%-46%) greater likelihood of carrying out an impulsive act of suicide. In contrast, this measure showed no association with precontemplated attempts (OR = 1.05, CI: 0.95, 1.15). Direct comparison of the attempter groups confirmed that individuals making precontemplated attempts showed less alcohol-related aggressive behavior compared with impulsive attempters (OR = 0.79, CI: 0.69-0.89). Contrary to our hypothesis, ASPD showed a similar association with impulsive attempts (OR = 1.35, CI: 0.96-1.89) and precontemplated attempts (OR = 1.39, CI: 1.02-1.89). Direct comparison of the attempter groups did not suggest that ASPD was associated with one type of attempt more than the other (OR = 1.03, CI: 0.68-1.55).

Compared with men, women were more likely to make impulsive suicide attempts (OR = 3.60, CI: 2.78-4.66) as well as precontemplated attempts (OR = 2.41, CI: 1.82-3.19). The direct comparison of the attempter groups showed that women were less likely to make a precontemplated attempt (OR = 0.67, CI: 0.47-0.95). In other words, when women were compared with men, they were more likely to carry out impulsive suicide attempts. An unanticipated result is that number of lifetime illicit drug dependencies conferred risk for attempts among individuals showing precontemplation (OR = 1.20, CI: 1.10-1.32) but not those making impulsive attempts (OR = 1.02, CI: 0.92-1.12). The direct comparison between attempter groups confirmed that this variable was greater among attempters showing precontemplation (OR = 1.18, CI: 1.05-1.33).

We also stratified the analysis by gender. The pattern of findings obtained using the combined sample was also observed in men and women. Consistent with the results for the combined sample, several variables showed greater odds (95% CI) for precontemplated suicide attempts than impulsive attempts, regardless of gender, including the following: substance-induced depression (men = 6.62 [CI: 3.48-12.57]; women = 2.76 [CI: 1.49-5.11]); independent depression (men = 7.14 [CI: 3.29-15.46]; women = 3.13 [CI: 1.68-5.84]); and number of illicit drugs ever dependent on (men = 1.20 [CI: 1.02-1.40]; women = 1.14 [CI: 0.95-1.38]). Also consistent with results for the combined sample, alcohol-related aggression was lower in precontemplated attempters compared with impulsive attempters in both groups (men = 0.74 [CI: 0.62-0.90], women = 0.82 [CI: 0.70-0.96]). However, ASPD did not distinguish precontemplated and impulsive attempts.

Discussion

Alcoholics who precontemplate acts of suicide tend to carry out these acts with a higher intent to die. These acts were also more likely to result in medical treatment, suggesting greater lethality. Further, the associations among measures that tap precontemplation (e.g., suicide planning), perceived intent, and lethality of acts of suicide have been demonstrated in a variety of populations (Conner, 2004).

Depression is strongly associated with suicide attempts showing precontemplation. Given the rapid remission of depressive symptoms on initiation of abstinence (Brown et al., 1995), treatment of alcoholism is an essential component of suicide prevention, particularly for individuals with alcohol-induced depression. However, alcohol-dependent persons with a history of independent depressive episodes identify a patient population that may not recover from depression merely with the initiation of abstinence (Grant et al., 2004b; Schuckit et al., 1997). Therefore, to address suicide risk, clinicians cannot focus exclusively on drinking-related outcomes. The recognition and specialized treatment of alcoholics with independent depression is also a critical component of suicide prevention, emphasizing the need for initiating depression treatments for this population (Nunes and Levin, 2004).

The role of depression in impulsive suicide attempts is greatly reduced, necessitating a focus on other predictors. Consistent with our hypothesis, results show alcohol-related aggression is uniquely elevated among impulsive suicide attempters. Alcohol-related aggression may be a marker for the reactive subtype of aggression that has been hypothesized to promote impulsive acts of suicide (Conner et al., 2003a), consistent with the present findings. Elevated *alcohol-related* aggression also suggests proneness to disinhibited anger while drinking, which is consistent with descriptions of suicide attempts during intoxication as "impulsive" acts driven by interpersonal conflict (Mayfield and Montgomery, 1972). Contrary to our hypothesis, results did not support that individuals carrying out impulsive acts of suicide were more likely to be drinking prior to the attempt compared with those showing precontemplation. Although drinking very likely promotes impulsive attempts, it seems likely that it also facilitates acts associated with precontemplation, potentially through different mechanisms (Hufford, 2001). Also inconsistent with our hypothesis, ASPD was not elevated in impulsive attempts.

An unanticipated result is that illicit drug dependence is associated with precontemplated but not impulsive suicidal behavior, suggesting that drug dependence underlies a chronic suicide process. The mechanism or mechanisms are unclear. Illicit drug dependence may promote chronic suicidal ideation and, ultimately, suicide attempts pharmacologically, via stressful life events, or through a common link with psychopathology or deviance. However, a relationship

between illicit drug dependence and precontemplated suicide attempts was not hypothesized, so the result requires replication. This is a critical area for research in light of the prevalence of alcohol-drug comorbidity (Kessler et al., 1997), and data supporting comorbid drug use confers risk for suicidal behavior among individuals with alcohol dependence (Gomberg, 1989; Hesselbrock et al., 1988; Roy et al., 1990).

Findings suggest that women with alcoholism are especially likely to make impulsive suicide attempts. These findings in an alcohol-dependent sample are novel and require replication. Some data in the general literature (studies not restricted to individuals with alcohol dependence) suggest suicidal behavior carried out by women is more impulsive compared with that of men (Weyrauch et al., 2001) although, more often, studies addressing this topic have not shown gender differences (Brent et al., 1999; Conwell et al., 1998; Hjelmeland et al., 2000). Data on suicidal behavior in women with alcohol use disorders are limited (Gomberg, 1989; Kingree et al., 1999).

There are limitations of this study. Lifetime assessments of suicide attempts, persistent suicidal ideation, and correlates of attempts (e.g., number of illicit substances dependent on) were examined, and so the temporal association of these variables is unclear. A single categorical item measured persistent suicidal ideation. The number of individuals who engaged in persistent suicidal ideation (precontemplation) but carried out impulsive suicide attempts at a time when they were not experiencing persistent ideation, indicating misclassification, is not known. Individuals with a history of independent depression were categorized as "independent depression" regardless of a history of one or more episodes of substance-induced depression, so these were not mutually exclusive categories. Also, lifetime data were relied on to create the depression categories because more ideal data on the nature of the depressive episode (induced, independent) at the time of the attempt were not available.

Comparison of our findings with the literature on suicide planning is also indeterminable (Conner, 2004). Although we considered using an item about "planning" of attempts to distinguish the attempter groups that might allow more direct comparison with this literature, we had more confidence in the persistent ideation variable because all subjects were given an operational definition of a "week or longer." No such referent was provided with the planning question to guide subjects in their response, an important consideration because all suicidal individuals engage in some level of planning, however brief, prior to the act.

There are also many strengths of this study. Analyses were built on a rigorous study using COGA data that established correlates of attempted suicide among alcoholics (Preuss et al., 2002). The marked difference in planning, intent, and treatment-seeking between attempters with and

without persistent suicidal ideation supports the validity of stratifying attempters by this variable. Assets of the COGA data set include a large sample of women, use of a reliable and detailed semistructured assessment protocol tailored to alcoholism, rigorous assessments of depression, and several questions about suicidal behavior, creating a unique opportunity to examine attempted suicide in this population. Further study of the heterogeneity of suicidal behavior among individuals with alcohol dependence is needed.

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