

Addressing Suicidal Thoughts and Behaviors in Substance Abuse Treatment: A Review of the Literature*

Update

*Reviews Literature From January 1, 2012,
Through March 31, 2012*

Treatment Improvement Protocol (TIP) Series

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UPDATED FINDINGS FROM THE LITERATURE, MARCH 2012

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Updated Findings From the Literature, March 2012

This Treatment Improvement Protocol (TIP) Literature Review update includes findings published between January 1, 2012, and March 31, 2012.

Numerous articles were published during the 3-month period of this review, and eight were selected for this update because of their emphasis on substance use disorders (SUDs) and suicidality.

Findings on Risk Assessment

Conner et al. (2011) studied a sample of adult patients in residential substance abuse treatment for an alcohol use disorder (AUD) who recently attempted suicide. The study was designed to examine the type, severity, and timing of stressful life events (SLEs) in adults 30 days prior to, and the day of, their suicide attempts. Researchers recruited and screened 3,043 patients from residential substance abuse treatment programs in Western New York, then selected and assessed 101 patients with an AUD who had made a recent (within 90 days) suicide attempt. For each selected patient, a nonsuicidal control subject was recruited from the same treatment facility; sites were the only matching variable in this study.

A modified, semi-structured SLE interview was conducted with each participant. SLEs were defined as a new event that an average person would view as negative, or an event that signaled the worsening of a chronic circumstance. SLEs were collapsed into two broad severity levels: minor and major events. They were then further collapsed into interpersonal and non-interpersonal events. Interpersonal SLEs included, for example, relationship problems, physical assault or rape by someone known to the person (not simply an acquaintance), or death of a family member. Noninterpersonal SLEs included, for example, injury or illness, physical assault or rape by a stranger or acquaintance, a housing problem, or job or financial problems.

Results indicate that major interpersonal SLEs may present a marked risk for suicide attempt in patients with an AUD, whereas minor interpersonal and major noninterpersonal SLEs may not present the same level of risk. In addition, the findings suggest that within this population, an SLE may prompt a suicide attempt on the same day, which makes prevention difficult. The authors state that preventive interventions focusing on anticipating and planning for major interpersonal SLEs and improving interpersonal relationships could be beneficial in reducing suicidal behavior in adults with an AUD. Couples' therapy may also be advantageous, because partner-relationship separations were the most common interpersonal SLE preceding suicide attempts in subjects with an AUD.

The authors note several study limitations. The study included relatively few individuals who attempted suicide for the first time in the preceding 90 days. This made it impossible to determine if SLEs resulted in a greater risk for those making a first attempt versus those making repeated attempts. Also, the study did not examine the role of other types of stressors (e.g., chronic stress, distal events) in determining suicide risk. The authors also acknowledge that because the study focused on adults in treatment for AUDs, the results may not be generalizable to other populations.

Kaplan, McFarland, Hugert, and Valenstein (2012) compared the suicide risk among male veterans and nonveterans. Further, they examined age-associated life circumstances that commonly precede suicide among male veterans in four age groups: 18–34 (young), 35–44 and 45–64 (together, middle-aged), and 65 and older (older). Researchers examined data from the National Violent Death Reporting System (2003–2008) to determine age-specific suicide rates for male veterans ($n=8440$) and nonveterans ($n=21,668$) and to calculate the age-stratified mortality ratio for veterans. Family members or friends of the deceased were contacted to ascertain mental health status, suicidal behavior, alcohol or drug problems, and life events. Coroner/medical examiner testing was used to determine the suicide method and blood alcohol concentration (BAC) at time of death.

The researchers found that suicide risk for male veterans, compared with nonveteran men, was greater in all age groups except those 65 and older. Among veterans, the precipitating circumstances preceding suicide varied by age group. Specifically, younger veterans were more likely than older veterans to have experienced intimate partner, financial, legal, and occupational problems prior to suicide. In fact, nearly half of the veterans in the youngest group experienced a relationship problem before taking their lives. In older veterans, health problems were the life event most likely to have preceded suicide.

Although older veterans were more likely than other age groups to have been perceived as depressed, middle-aged veterans (specifically, 35 to 44) were more likely to have received a mental disorder diagnosis before death. Older and middle-aged veterans also were less likely to have received mental health services for their symptoms when compared with nonveterans in the same age groups.

Depression was the most common mental disorder diagnosis for all four age groups, and posttraumatic stress disorder was more common in younger veterans. Alcohol dependence and acute alcohol use at the time of death were more common among young and middle-aged veterans when compared with those ages 65 and older. In particular, nearly one-third of the young veterans had a BAC greater than or equal to 0.08 when they took their lives, yet alcohol dependence appeared to be most prevalent in the middle-aged veterans. In terms of suicide attempt history, young veterans were the most likely group to have previously displayed suicidal behaviors. In addition, the most common method of suicide among veterans in all age groups was through use of a firearm—particularly among older veterans.

The authors suggest that by focusing on precipitating life stressors, the risk of suicide among male veterans could possibly be reduced. Specifically, older veterans who are depressed or suicidal should be asked about access to firearms and counseled about safe firearm storage. It may also be beneficial for providers to focus on the physical health of older veterans. Among young veterans, there is a need for more extensive resources to cope with family/relationship concerns. Among middle-aged veterans, more attention should be paid to substance abuse and psychiatric issues.

The authors note a number of potential study limitations. Most of these involve difficulties inherent in postmortem research (e.g., accuracy of death certificate information, lack of consistency in the kinds of data collected in different States, reliability of information from

family members or others). The authors also note that this study was descriptive and no causal relationship between variables and suicide risk could be inferred.

Spokas, Wenzel, Brown, and Beck (2012) analyzed the characteristics of people who make impulsive suicide attempts. Participants were recruited from psychiatric or medical emergency departments following a suicide attempt and were assessed using the Suicide Intent Scale (SIS); the Lethality Scale; the Number and Dates of Suicide Attempts measure; the Psychiatric History Questionnaire; the Scale for Suicide Ideation; the Beck Depression Inventory-II; the Beck Hopelessness Scale; and the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-IV-I). Each participant was paid \$50 for taking part in the study.

Seventy-eight participants were classified as making an impulsive suicide attempt (no premeditation) and 65 were classified as making a premeditated attempt (3 hours or more of premeditation; i.e., an SIS score of 2). Those who reported considering suicide for 3 or fewer hours (i.e., a score of 1 on SIS item number 15; $n=37$) before the attempt were not included in the subsequent analyses.

The authors determined that participants who made impulsive attempts (a) were less likely to report using drugs to facilitate the attempt, (b) were less likely to have used alcohol prior to the attempt, (c) had significantly lower expectations of death (although lethality rates were similar to those who premeditated the attempt), (d) reported significantly less depression and hopelessness, and (e) were significantly less likely to have a history of sexual abuse. Individuals in both groups had similar levels of suicidal ideation and had no difference in prevalence of borderline personality disorder or drug use disorders. However, those making impulsive attempts were more likely than those who premeditated the attempt to meet criteria for an AUD.

The study results suggest that providers should not minimize the significance of impulsive suicide attempts, as they have a similar lethality to premeditated attempts. The authors state that the most important finding of this study is that those who make impulsive suicide attempts have a different clinical profile (e.g., lower levels of depression and hopelessness) than those who make premeditated attempts and should not be overlooked by clinicians assessing for suicide risk. This finding may be particularly relevant in AUD treatment settings, as patients with AUD are at higher risk for making an impulsive suicide attempt.

A study limitation of note is that participants' histories of sexual abuse and the nature of their suicide attempts (impulsive versus premeditated) were both measured with single questions, and the construct validity of these items is not known.

Buckner, Joiner, Schmidt, and Zvolensky (2012) examined the role of social anxiety in the relationship between marijuana and suicidality. Participants ($n=343$) were recruited from those who responded to community-based advertisements for a larger study about the efficacy of a four-session, tobacco smoking-based behavioral intervention program. Included were 66 individuals who reported never using marijuana and 134 who endorsed current (past-month) use. Among the 134 current users, 32.1 percent reported daily marijuana use and roughly 14 percent met the criteria for social anxiety disorder (SAD), per the *Diagnostic and Statistical Manual of Mental Disorders* Fourth Edition, Text Revision (DSM-IV-TR) (American Psychiatric

Association, 2000). Participants considered to be at high risk for suicidal behavior were excluded from the study.

Participants were assessed for the following: suicidality, marijuana use, social anxiety, clinical diagnosis of SAD, depression, negative affect, nicotine dependence severity, alcohol-related problems, and other types of anxiety. Well-accepted assessment tools, such as the Inventory of Depression and Anxiety Symptoms (IDAS), the Social Interaction Anxiety Scale, the SCID-IV-I, and the Beck Depression Inventory-Second Edition were used to conduct the assessments.

Results of the study showed that the relationship between marijuana use status and suicidality did not vary as a function of social anxiety. However, participants who used the drug daily who experienced social anxiety were more likely to present with elevated suicidality. The authors recommend further study into why daily marijuana users with social anxiety are at higher risk for suicidality. They also suggest that clinicians who treat patients for marijuana dependence perform comprehensive assessments of suicidal ideation, self-injurious behaviors, and other suicide risk factors.

Study limitations include that participants were seeking tobacco-smoking cessation treatment, and smokers report higher levels of suicidal ideation than nonsmokers. Thus, the results may not be generalizable to nonsmoking populations. The study's dependent variable (i.e., suicidality) was based on the IDAS score, which includes both suicidal ideation and suicidal behaviors. The authors suggest that future research might be useful in parsing out the role that social anxiety may play in the relationship between those two aspects of suicidality and daily marijuana use. The study did not assess participants' suicide attempt histories, and the potential impact of this variable remains unknown. Also, the study's cross-sectional design made it impossible to make causal inferences or dissect the directionality of observed effects.

Liu, Vassileva, Gonzalez, and Martin (2012) compared the relationship between a marker of impulsivity—delay discounting (DD)—and suicide attempt history among substance dependent individuals (SDIs). DD is the tendency to undervalue an anticipated future reward as the amount of time before obtaining the reward increases (e.g., preferring to receive \$5 today rather than waiting 2 weeks for \$10). Studies have shown that (a) in general, people discount smaller delayed rewards at a higher rate than larger ones (called the magnitude effect), and (b) the rate at which delayed rewards are discounted is a behavioral aspect of impulsivity. Higher discounting rates have been found among SDIs, but DD has not been well studied as a suicide risk factor.

This study assessed 466 people with SUDs who were enrolled in a larger study of neurocognitive effects of HIV and substance dependence. Participants were only included in the study if they met the following criteria:

- Absence of acute mania or major depression
- No documented history of neurological injury or illness
- No history of schizophrenia or current neuroleptic treatment
- Negative results on a breathalyzer test and rapid urine toxicology screening for opiates and cocaine
- No drug use for at least 1 week prior to study participation

In addition to the measures of HIV and hepatitis C serostatus found in the larger study, participants were evaluated for a lifetime history of SUDs, mood disorders, and suicide attempts.

Each participant completed a delayed reward discounting task (the Monetary Choice Questionnaire). The researchers found no significant difference on DD between participants with and without a history of attempting suicide. However, the two groups differed significantly in terms of reaction to delayed reward size. In essence, participants with a history of suicide attempts were generally indifferent to the size of the delayed reward, whereas those without a suicide attempt history reflected the more common tendency to discount small, delayed rewards more than large ones.

The authors suggest that although people with SUDs, in general, have impulse control deficits, significant variability in impulsivity exists within this population. Their findings support the theory that people with SUDs who display suicidal behavior may show an impaired sensitivity to significant future rewards. However, the authors stress that due to the cross-sectional nature of this study, no causal inferences can be made. They recommend further studies into this topic to determine possible suicide prevention strategies.

Findings on Co-Occurring Conditions and Risk Factors for Suicidality

Risk of suicide among offenders with co-occurring mental and substance use disorders was evaluated in a secondary data analysis by Ruiz, Douglas, Edens, Nikolova, and Lilienfeld (2012). After analyzing a combined sample of offenders ($n=3,197$) who participated in five previous studies, the researchers found that co-occurring substance use and mental disorders were associated with suicide risk factors. Additionally, offenders with substance use disorders were more likely than other offenders to have particular mental disorders that are associated with suicide risk factors (e.g., depression, traumatic stress, and personality disorders). No statistically significant differences were found between male and female offenders in terms of co-occurring disorders being associated with suicide risk. The researchers surmised from the analysis that offenders with mental disorders may be at higher risk for suicidal behavior when they abuse drugs or alcohol.

Study limitations include that the five studies analyzed provided only concurrent and retrospective validation; the researchers conducted no followup work. The study relied heavily on self-reported scale elevations (i.e., symptoms), which are not synonymous with official clinical diagnoses. In addition, offenders with psychotic disorders were not included in the study.

Tiet and Schutte (2012) presented findings from a study about treatment setting and outcomes for patients with co-occurring disorders. This was the first study to examine in a “real-world” setting the potential benefit of treating patients with co-occurring disorders in dual-diagnosis treatment programs, rather than in either a substance abuse or psychiatric treatment program. Participants were recruited from four specialty outpatient treatment programs (one dual-diagnosis, one psychiatric, and two SUD treatment programs) in two U. S. Department of Veterans Affairs (VA) Medical Centers. All ($n=257$) participants had co-occurring psychiatric disorders and SUDs at treatment entry. Participants were compensated for their time.

Participants completed a structured diagnostic interview at treatment entry (covering both lifetime and past 12-month diagnoses) and completed a self-report survey both at treatment entry and 6 months later (covering patient demographics, alcohol and drug use and abuse, and psychiatric symptoms). Study results were mixed. Results indicated that patients who initiated treatment at dual-diagnosis programs were more likely than those entering psychiatric or SUD programs to have attempted suicide in the past 30 days (20 percent versus 3 percent) and had lower substance use abstinence rates. At 6-month followup, patients in dual-diagnosis programs no longer differed from the other patients in relation to abstinence rates or suicide attempts in the past 30 days.

Patients in dual-diagnosis treatment did not have better absolute outcomes than patients who entered SUD or psychiatric treatment programs. However, there were differences among subgroups of patients who continued to use substances. Patients who initiated treatment at the dual-diagnosis treatment program (and continued to use substances) reported more days of heavy alcohol consumption and days of drug use within the past 30 days at 6-month followup than did those who entered SUD or psychiatric treatment programs (and continued to use substances). However, patients who initiated treatment at the dual-diagnosis program started out with more severe symptoms, and the slopes of improvement (in terms of suicide attempts and abstinence from alcohol and drugs) were steeper than those experienced by SUD or psychiatric program patients. The authors suggest that integrating SUD and psychiatric treatment may have advantages in terms of managing and reducing suicidal behavior among patients with co-occurring disorders.

Several study limitations are noted. First, because the study relied on a quasi-experimental design, and patients at different treatment centers had varying pretreatment characteristics, a causal relationship cannot be inferred. Second, as the study only utilized four treatment programs, the findings are not necessarily representative of other treatment programs. Third, the participant population was largely male, and the number of participants in the dual-diagnosis program was small, so generalizability of the results may be limited. Fourth, this study did not analyze the interactive effects of treatment setting and patient severity at treatment entry in relation to outcomes. Fifth, counselors at the SUD and psychiatric programs may have informally incorporated some aspects of integrated dual-diagnosis treatment, thus lowering the differences between the programs. The authors suggest that future studies focus on identifying specific parts of dual-diagnosis treatment programs that are related to better outcomes, such as lower rates of suicidality.

Ilgen et al. (2012) studied data on male veterans who died by suicide who had a least one SUD during the 2 years prior to death. Specifically, the study aimed to describe: demographic and clinical characteristics of male veterans with an SUD who died by suicide, the extent of their contact with the healthcare system during the year prior to their deaths, and the factors related to care settings on the last visit before their deaths. The researchers surveyed data from the U.S. Department of Veterans Affairs' National Patient Care Database and the National Death Index and identified all male Veterans Health Administration (VHA) patients who had a documented SUD and had died by suicide between October 1, 1999, and September 30, 2007 ($n=3,132$).

Subjects were grouped into three age categories: 18–44, 45–64, and 65 and older, and into four racial groups: White, Black, unknown or other, and missing. Also noted were patients who had two or more mental disorders unrelated to their SUDs.

AUDs were the most common type of SUD among the veterans who died by suicide (83.4 percent). The second most common category was other or polysubstance abuse (31.9 percent). Depression was the most common psychiatric diagnosis (31.9 percent). However, 48.1 percent of patients had been diagnosed with two or more psychiatric disorders in the 2 years prior to death.

In analyzing the timing of the veterans' contact with the healthcare system before suicide, it was found that 94.6 percent had some sort of contact with the VHA in the year before death. More than half (55.5 percent) visited a VA facility during the month before death, and 25.4 percent were seen within the week before death.

In terms of types of treatment within the year before suicide, 32.8 percent had received SUD treatment, 69.0 percent had received mental health services, and 89.4 percent had received some other type of medical treatment. The data related to veterans who had some sort of contact with VHA during the year before death ($n=2,964$) were further analyzed to determine what type of treatment was received in the visit preceding death. It was found that 10.5 percent had SUD treatment, 32.8 percent received mental health services, and 56.6 had some other sort of medical contact with VHA. From among these three groups, the Black patients with SUDs were less likely to have been seen in SUD treatment settings than White patients with SUDs. Older veterans (age ≥ 65) with SUDs were the least likely age group to have been seen in SUD treatment prior to suicide.

The study found that the majority of male veterans with SUDs who died by suicide received health care during the year and month before death—most in a general healthcare setting, rather than a specialty treatment setting. The authors suggest that this study could prompt further evaluations of suicide risk detection and intervention strategies that could provide benefit in a variety of healthcare settings.

Some of the study limitations are similar to those of other postmortem studies, such as the possibility that the causes of death might have been misclassified, potentially affecting the study results. Additionally, male veterans who had received treatment services from VA facilities comprised the sample population; the results may not be generalizable to other populations. Furthermore, study design could have resulted in increased estimates of treatment utilization because one inclusion criterion was that patients had to have received an SUD diagnosis from a VA treatment provider within the 2 years before suicide (which, by definition, requires some type of treatment utilization within the 2 years before death). It is also important to note that all of the diagnoses were made by VA treatment providers, some of whom were not mental health professionals. Consequently, diagnoses might have differed from those that would have been obtained through the use of structured diagnostic interviews.

Methodology

The methodology used in the development of TIP 50 was used in the preparation of this update.

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