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## Circumstances Preceding Suicide in U.S. Soldiers: A Qualitative Analysis of Narrative Data

**Nancy A. Skopp,**

Defense Centers of Excellence National Center for Telehealth and Technology, Tacoma, Washington

**Kristin M. Holland,**

Centers of Disease Control and Prevention, Atlanta, Georgia

**Joseph E. Logan,**

Centers of Disease Control and Prevention, Atlanta, Georgia

**Cynthia L. Alexander,**

Defense Centers of Excellence National Center for Telehealth and Technology, Tacoma, Washington

**C. Faye Floyd**

Defense Centers of Excellence National Center for Telehealth and Technology, Tacoma, Washington

### Abstract

To gain a better understanding of military suicide, we examined suicide narratives for 135 Soldiers extracted from two large-scale surveillance systems: the Department of Defense Suicide Event Report (DoDSER) and the Centers for Disease Control and Prevention's (CDC) National Violent Death Reporting System (NVDRS). Using coroner/medical examiner and law enforcement narratives captured in the NVDRS and mental health provider narrative data collected across multiple domains from the DoDSER, we examined circumstances surrounding military suicides using a qualitative content analysis approach. We identified five common proximal circumstances: (1) intimate partner relationship problems (63.0%); (2) mental health/substance abuse (51.9%); (3) military job-related (46.7%); (4) financial (17.8%); and (5) criminal/legal activity (16.3%). Evidence of premeditation was present in 37.0% of suicides. Decedents frequently struggled with multiple, high-stress problems and exhibited symptoms of coping and emotion regulation difficulties. Findings demonstrate potential points of intervention for suicide prevention strategies.

### Keywords

suicide risk; U.S. soldiers; qualitative research; prevention; emotion regulation

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Correspondence concerning this article should be addressed to Nancy A. Skopp, who is now at the Psychological Health Research Deployment Health Clinical Center/Psychological Health Center of Excellence (West), Defense Health Agency, 9933 West Hayes Street, BOX 339500 MS 34, Joint Base Lewis-McChord, Tacoma, WA 98431-9500. nancy.a.skopp.civ@mail.mil.

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Suicide is associated with enormous human suffering and significant economic costs to individuals, families, and society (Goldman-Mellor et al., 2014; Kennelly, 2007; Shepard, Gurewich, Lwin, Reed, & Silverman, 2016). Nationally, the cost of suicides and suicide attempts was recently estimated to be \$58.4 billion, with vast majority of the cost comprising lost productivity (Shepard et al., 2016). U.S. Service members (SMs) have traditionally experienced lower suicide rates compared with the general U.S. population (Eaton, Messer, Garvey Wilson, & Hoge, 2006; Rothberg, Bartone, Holloway, & Marlowe, 1990). Over the past decade, however, the suicide rate among U.S. Army Soldiers has more than doubled and remained high (Brachynski et al., 2012; Lineberry & O'Connor, 2012; Pruitt et al., 2016; Schoenbaum et al., 2014). As such, suicide and suicide-related outcomes are critical military health concerns. A clearer understanding of the factors that may place Soldiers at risk for suicidal behavior is of utmost importance for the military suicide prevention mission (Castro & Kintzle, 2014).

The number of quantitative studies on military suicide has increased in tandem with the suicide rate (LeardMann et al., 2013; Reger et al., 2015; Schoenbaum et al., 2014; Ursano et al., 2015). These efforts have been very useful in advancing our knowledge of group characteristics that elevate military suicide risk and highlighting interventions that show promise for reducing suicidal behavior (Burger, Capobianco, Lovern, et al., 2016; Kline et al., 2016; LeardMann et al., 2013; Reger et al., 2015; Rudd et al., 2015; Schoenbaum et al., 2014; Ursano et al., 2015). However, the reasons for the unprecedented rise in suicide are not apparent, and it is unclear how identified suicide risk factors relate to suicidal behavior (Bachynski et al., 2012; Castro & Kintzle, 2014; Hjelmeland & Knizek, 2010; Nelson, Denneson, Low, et al., 2015). Moreover, quantitative analyses have some limitations. Such analyses are not designed to capture complex dynamics related to circumstances leading to suicide, which could inform and broaden the scope of suicide research. Given that military suicide has increased significantly over the last several years, and has remained high, a more nuanced analysis appears warranted to detect critical information that might otherwise be overlooked.

Several suicide investigators have argued that quantitative and qualitative suicide research is inherently complementary. The incorporation of qualitative methods has the potential to impart a more in-depth understanding of suicide that is critically needed to avoid repetition and advance the field (Goldney, 2002; Hjelmeland & Knizek, 2010; Leenaars, 2002). Fine-grained narrative suicide data that cannot be captured in large-scale quantitative analyses can inform, supplement, and enrich large-scale quantitative research by capturing the context of precipitating circumstances and providing fresh insights. In addition, qualitative analyses enable an intimate view of decedents' lives and provide clues about pathways to suicide that cannot be captured any other way (Miles & Huberman, 2004; Yardley, 2017). For example, Robins's (1959) qualitative study of 134 suicide decedents conducted over 50 years ago found agitation was highly prevalent. This finding proved prescient, as quantitative research has only recently highlighted agitation as a salient suicide risk factor and potential sign of imminent suicide (Busch, Fawcett, & Jacobs, 2003; Ribeiro, Yen, Joiner, & Siegler, 2015).

Narrative suicide data can also directly inform prevention efforts and research by shedding light on common patterns associated with a given group of suicide decedents, provided the

data are representative of the group (Miles & Huberman, 2004; Orbach, 2003). For example, Orbach's (2003) qualitative examination of the final weeks of 67 Israeli Soldier suicide decedents revealed a persistent pattern of behavior that inhibited Soldiers from receiving help and identified a weakness in the referral system that could be swiftly addressed.

Other benefits of qualitative suicide research include the identification of overarching themes (Lusk et al., 2015; Gutierrez et al., 2013) and the investigation of theoretical propositions (Huguelet & Perroud, 2010). For example, Mills and colleagues (2011) used qualitative methods to identify themes associated with "root causes" of suicide to develop prevention strategies. Insights gained through qualitative analysis also can help inform hypotheses and theory (Huguelet & Perroud, 2010; Robins, 1959). Lusk et al.'s (2015) qualitative study of war Veterans revealed the utility of the interpersonal-psychological theory of suicide (IPTS; Joiner, 2005) in understanding suicide precursors related to deployment transition.

In sum, quantitative suicide research has been instrumental in improving our understanding of military suicide risk factors (e.g., LeardMann et al., 2013; Logan, Fowler, Patel, & Holland, 2016; Miles & Huberman, 2004; Orbach, 2003; Reger et al., 2015; Schoenbaum et al., 2014; Ursano et al., 2015). Qualitative suicide research, however, can potentially supplement quantitative research by providing new insights that support a more comprehensive understanding to help inform prevention and identify factors that warrant further investigation (Goldney, 2002; Hjelmeland & Knizek, 2010; Leenaars, 2002). We propose the novel use of large-scale surveillance data to illustrate the dynamics of circumstances precipitating military suicide. The current study is a qualitative analysis of narratives provided by mental health (MH) professionals, coroners and/or medical examiners, and law enforcement officials reported at the time of death collected in Department of Defense Suicide Event Reports (DoDSERs) and the Centers for Disease Control (CDC) National Violent Death Reporting System (NVDRS). The goal of this study was to not only to shed light on precipitating suicide circumstances among active duty Army SMs but also to apply qualitative methods to narrative data comprising multiple perspectives.

## Method

### Data Sources

The DoDSER (and the Army's similar program that predated the DoDSER program) and NVDRS were used to conduct this study. The NVDRS details suicide decedent characteristics, mechanisms/weapons involved, and precipitating circumstances. From 2005 to 2010, 18 U.S. states participated in NVDRS. From 2005–2009, NVDRS included Alaska, Colorado, Georgia, Kentucky, Maryland, Massachusetts, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Virginia, and Wisconsin. In 2010, Ohio and Michigan were added.

NVDRS narrative data on precipitating circumstances of death are provided by from law enforcement (LE) and coroner/medical examiner (C/ME) death scene investigation reports to help investigators classify manner of death at a violent death scene (Logan et al., 2015). This

process entails gathering information on precipitating circumstances of a violent death using all available evidence at the death scene such as suicide notes and open-ended interviews with family members, friends, witnesses, and others associated with the decedent or the death incident (U.S. Department of Justice, 1999).

The DoDSER provides data including decedents' military background, duty status, deployments, combat exposure, MH history and history of victimization, perpetration, and military disciplinary actions (Gahm et al., 2012). DoDSERs are required for all confirmed military suicides and, in the Army, DoDSERs are completed by MH providers. DoDSERs involve review of medical and MH records, personnel records, responsible investigative agency records, records related to manner of death, and interviews (e.g., coworkers, supervisors, friends, family members, providers, chaplains, and military police), as appropriate (Gahm et al., 2012). MH providers also submit narratives that provide the sequence of events culminating in suicide and biopsychosocial formulation as to "why" the suicide occurred. For each decedent, we examined narrative data abstracted from DoDSERs and NVDRS C/ME and LE sources.

## Procedures

**Data linkage.**—We linked DoDSER and NVDRS data to identify active duty U.S. Army decedents in the NVDRS and to aggregate all narrative data. There were 154 active duty Army decedents who died in NVDRS states and therefore 154 DoDSER incident records. In total, we linked NVDRS-DoDSER data for 141 (92%) decedents. Linkage of records was based on matching incident and decedent variables in both systems (e.g., date and state of death, manner of death, decedent's age, sex, race/ethnicity, occupation, and Veteran status). Thirteen records were considered to have insufficient data on these variables to make appropriate matches. Details on the complete list of variables and methods used in the linkage are documented elsewhere (Logan, Skopp, et al., 2015).

Some records matched on all variables but had missing narrative data. Among the 141 decedents, we reviewed narrative data for 135 (96%) decedents who had at least one narrative present. In cases where multiple narratives were available, data from each narrative were typically complementary, occasionally building on and providing more detail or a different perspective than the other narratives. This allowed for triangulation of sources and analysis of multiple assessments for each suicide. No personal identifying information was reviewed or appended. Demographic and military characteristics are displayed in Table 1.

**Qualitative content analysis.**—We conducted qualitative content analysis (Graneheim & Lundman, 2004; Hsieh & Shannon, 2005; Sandelowski, 2000) of the coroner/medical examiner and law enforcement data contained in NVDRS and the biopsychosocial narratives contained in the DoDSER. For the purposes of this study, we use Hsieh and Shannon's (2005) definition of qualitative content analysis: "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (p. 1278). A number of benefits have been attributed to this approach in its own right as compared with more complex qualitative techniques (see Sandelowski, 2000 for a review).

A core feature of qualitative content analysis is the creation of categories to describe the manifest content of the data (Graneheim & Lundman, 2004). To accomplish this, a preexisting coding scheme is systematically applied to the data; however, codes may also be generated from the data in the course of the analysis (Sandelowski, 2000). This is an interactive process that allows for a modification of the coding scheme if a more relevant system is discovered to ensure the best fit to the data (Sandelowski, 2000). Data are coded and responses for each category are summed to provide a description of “patterns or regularities” that have been discovered and later confirmed by counting, with the expected outcome being a descriptive summary (Sandelowski, 2000). In brief, qualitative content analysis contains a categorical (manifest content) and unifying thematic component (latent content; Graneheim & Lundman, 2004; Sandelowski, 2000).

**DoDSER-NVDRS narrative data coding.**—To conduct qualitative content analysis, we first developed a coding guide that consisted of a set of codes detailing circumstances commonly and theoretically associated with military suicides (Sandelowski, 2000). These codes included topics such as MH problems, military job-related precipitating circumstances (e.g., absence without leave [AWOL], court martial proceedings, administrative separation) and military-related adverse experiences (e.g., combat exposure, hazing).

The coding guide was subsequently modified through open coding (Strauss & Corbin, 1998), an iterative process that involved reviewing a sample of narratives to explore the presence of additional circumstances that commonly precipitated suicides but that were not included in the initial coding guide. This process resulted in a coding guide that included detailed codes including the suicide decedent’s emotional state, health circumstances that may have been related to the suicide, intimate partner and other relationship problems, criminal/legal problems, financial problems, evidence of premeditation, prevention opportunities, and toxicology results.

Within each of these overarching categories, detailed sub codes were developed for more nuanced narrative data (e.g., type of MH problem experienced, type of intimate partner problem). The final coding guide included 17 categories of contributing circumstances (evidence of negative emotional state [e.g., remorseful, felt guilty], history of adverse childhood experiences, MH/substance abuse problems, physical health problems, military job-related problems [e.g., problems with coworkers, administrative separation, AWOL], military-related adverse experiences [e.g., combat exposure, killed others in combat, combat injury], intimate partner problems [IPP], other relationship problems, criminal/legal problems, financial problems, substance use at the time of suicide, evidence of premeditation, prevention/intervention strategies and opportunities, death of family member, friend, or pet, recent crisis, no clear precipitating circumstances or events, and other information not captured by a previous code). Suicide narrative data for each case were entered into Excel and coded for the presence of each circumstance.

To assess intercoder agreement, three coders independently reviewed and coded 10 identical cases each using a method previously documented in the literature (Schiff et al., 2015). The initial rate of intercoder agreement was 80%. Discrepancies were identified, discussed, and addressed among the coding team until agreement reached 100%. After intercoder

agreement was established, each coding team member independently coded approximately 35 cases. Cases that contained unclear or ambiguous details were discussed as a group to reach consensus on which codes to assign. Codes were then aggregated and analyzed. Quality assurance (QA) was conducted by a coding team member who randomly selected cases and reviewed assigned codes for accuracy; additional QA was conducted during thematic analyses, when specific examples of assigned codes were sought from qualitative text in the narratives. Last, we examined the categories with the highest frequencies.

## Results

### Sample Characteristics

Table 1 provides demographic characteristics of our sample, which was predominantly male ( $n = 130$ , 96.3%) and White ( $n = 97$ , 71.8%), with a mean age of 28.2 years ( $SD = 8.2$ ). Most of the sample ( $n = 78$ , 57.8%) was married or had never been married ( $n = 45$ , 33.3%). Approximately 85% of the decedents ( $n = 115$ ) were regular active duty military personnel versus Reserve or National Guard, with the majority ( $n = 48$ , 35.6%) having completed 1–2 deployments and fewer than 20% having experienced direct combat ( $n = 25$ , 18.5%). Among those with known deployment history ( $n = 59$ ), five (8.5%) experienced an injury during combat, 17 (28.8%) suffered from a combat wound, 14 (23.7%) witnessed a killing during combat, and 12 (20.3%) killed another individual during combat (data not shown).

### Coding Results

The most frequently endorsed category codes: (1) IPPs (63.0%), (2) MH and substance abuse problems (51.9%), (3) military job-related problems (46.7%), (4) evidence of premeditation (37.0%), (5) financial problems (17.8%), and (6) criminal/legal problems (16.3%; Table 2). Table 3 displays examples of quotes from narrative text supporting each category. Code categories were not mutually exclusive; thus, decedents may be represented in more than one category. In fact, over three-quarters of cases ( $n = 104$ , 77.0%) had more than one code present in their narratives, with an average of 3.1 code categories reported.

**Intimate partner problems.**—Sixty-three percent ( $n = 85$ ) of the cases in our sample involved at least one form of IPP, with many of these cases indicating that more than one form occurred simultaneously ( $n = 35$ , 41.2%). For instance, narratives frequently indicated that decedents were going through a divorce or break-up and had experienced a recent argument with their partner/ex-partner. Divorce or relationship break-ups ( $n = 30$ , 35.3%) and arguments ( $n = 26$ , 30.6%) were the most common types of IPP. Abandonment was involved in 28.2% ( $n = 24$ ) of cases, with either the partner or the decedent abandoning a shared residence during relationship conflict. Other IPPs included infidelity ( $n = 15$ , 17.6%), intimate partner violence (IPV) perpetration ( $n = 12$ , 14.1%), and unspecified IPPs ( $n = 22$ , 26.9%).

Decedents with IPPs often had co-occurring problems. Of the 85 decedents who suffered from IPPs, half ( $n = 43$ , 50.6%) also experienced a MH problem. Most commonly the MH problem was diagnosed as depression ( $n = 18$ , 21.2%). Of the decedents with IPPs, 42 cases (49.4%) also involved a military job-related problem, typically a recent or anticipated

deployment ( $n = 13$ , 15.3%) or Absence Without Leave (AWOL), Article 15, and/or courts martial proceedings ( $n = 8$ , 9.4%). Many of the decedents who experienced IPPs had financial problems ( $n = 25$ , 29.4%), often with evidence that the decedent and spouse/partner had frequently or recently argued about finances.

**MH and substance abuse problems.**—Seventy of the 135 (51.9%) decedents were reported to have had MH and/or substance abuse problems. Of decedents identified with MH problems, common MH diagnoses included clinical depression ( $n = 29$ , 41.4%) and posttraumatic stress disorder (PTSD;  $n = 15$ , 21.4%), and 23 (32.9%) decedents were known to have received MH treatment. Thirty-three of the 70 decedents (47.1%) who had MH problems abused alcohol and/or drugs prior to death. Twenty-nine (41.4%) regularly abused alcohol; eight (11.4%) abused drugs; and four (5.7%) abused both alcohol and drugs. Thirty-one of the 33 (93.9%) who had MH problems and abused alcohol or drugs prior to their death were intoxicated and/or using drugs immediately prior to death. In nine of these 31 cases (29.0%), others witnessed the decedent becoming increasingly intoxicated and were in the position to monitor or prevent further intoxication as well as self-abuse related to the intoxication.

**Military job-related problems.**—Sixty-three of the 135 decedents in this study (46.7%) had military job-related problems; the most common types were Article 15 (a Commander-issued nonjudicial punishment used in the military, typically to punish minor misdemeanor infractions), AWOL, and/or courts martial proceedings ( $n = 13$ , 20.6%), anticipated or recent return from deployment ( $n = 18$ ; 28.6%), administrative separation ( $n = 9$ , 14.3%), and problems with coworkers ( $n = 6$ , 9.5%). Additionally, 31.7% ( $n = 20$ ) of decedents who experienced military job-related problems suffered from unspecified problems, with narratives simply stating, “Victim was having problems at work.”

Decedents who experienced military job-related problems often experienced MH problems ( $n = 30$ , 47.6%) such as depression ( $n = 15$ , 23.8%), alcohol problems ( $n = 20$ , 31.7%), and IPPs ( $n = 42$ , 66.7%). Almost one-quarter ( $n = 15$ ; 23.8%) of the decedents with military job problems were described as drinking or intoxicated at, or immediately preceding, death.

**Evidence of premeditation.**—There was evidence of premeditation for 50 of 135 decedents (37.0%). Of the decedents who had evidence of premeditation, these signs were most commonly expressed via disclosure of suicidal intent ( $n = 26$ , 52.0%), suicide notes ( $n = 24$ , 48.0%), and prior suicidal behavior ( $n = 24$ , 48.0%). Of those with premeditated suicide, six (12.0%) had previously attempted suicide, and 19 had previously expressed suicidal ideation (38.0%). Five of the 50 narratives where pre-meditation was evident (10.0%) specified that the timing of the disclosure of suicidal intent indicated there was opportunity for reactive intervention. Twenty-six decedents who expressed premeditation also had MH problems (52.0%), suffering mostly from depression ( $n = 12$ , 24.0%) and PTSD ( $n = 10$ , 20.0%). Eleven of the decedents who suffered from MH problems and had premeditated suicide (50.0%) were in treatment for MH problems at time of death.

Preventive actions were either initiated or could have potentially been initiated in 18 of the 50 premeditated suicide incidents (36.0%). Concerned bystanders reported decedents’

suicidal ideation to LE, a counselor, or another resource in five of these cases. In five cases, bystanders were near the decedent during the suicide (e.g., at a party) and could have potentially intervened, and in 10 cases, an intervention attempt was initiated (by LE,  $n = 4$ ; family/friend,  $n = 3$ ; or by “others”,  $n = 3$ ). For example, in one case, the decedent’s friends attempted to wrestle a firearm away from the decedent immediately prior to the suicide. In another case, the decedent’s access to firearms had been restricted prior to the suicide. Although the decedent’s relatives believed that all fire-arms been removed from his home, one remained, and he used it to kill himself.

**Financial problems.**—Twenty-four (17.8%) decedents experienced financial problems that reportedly contributed to their suicides. Of the decedents with financial problems, the majority ( $n = 17$ , 70.8%) of the narratives did not describe the type of financial problems experienced. For example, one narrative stated, “Victim stated in email message referenced to kids he had job issues, and he and wife have been in financial strain supporting kids.” Of the decedents with financial problems, 6 (25.0%) were generally described as having debt that they were unable to repay. One such case describes a decedent who “had been having financial problems and was behind on required payments to their creditors and had had their car repossessed not too long ago. . . .” Two of the cases (8.3%) citing financial problems involved a home foreclosure reported to have precipitated the suicide.

Twenty-one of the 24 decedents (87.5%) with financial problems also experienced IPPs, commonly related to finances. For instance, some narratives indicate the victim and partner recently argued about finances. Other concomitants included military job-related problems ( $n = 18$ , 75.0%) and MH issues ( $n = 16$ , 66.7%).

**Criminal/legal problems.**—Twenty-two (16.2%) of the 135 decedents in our sample had current criminal/legal problems. Of decedents with criminal/legal problems, the majority of problems were for sexual misconduct or allegations of sexual misconduct ( $n = 10$ , 45.4%); the remaining criminal/legal problems were alcohol or drug-related charges ( $n = 7$ , 31.8%), domestic violence or child maltreatment charges ( $n = 5$ , 22.7%), or a recent or pending arrest ( $n = 5$ , 22.7%). Forty-one percent ( $n = 9$ ) of decedents with criminal/legal problems were described as drinking immediately prior to death. The majority of the 22 decedents with criminal/legal problems were also experiencing a negative emotional state (e.g., sad, ambivalent, doubtful, hopeless, upset, anxious, worried, in agony/pain;  $n = 14$ , 63.6%), MH and/or substance abuse problems ( $n = 13$ , 59.0%), military job-related problems (e.g., problems with coworkers, Article 15;  $n = 15$ , 68.1%), and IPPs ( $n = 15$ , 68.1%). Though criminal/legal problems were less frequently cited compared with MH and substance abuse problems, military job-related problems, and IPPs, the decedents who had criminal/legal problems had a greater proportion of multiple serious problems.

## Discussion

The present study examined proximal circumstances surrounding suicides among U.S. SMs abstracted from two large-scale surveillance systems. The most common precipitating circumstances were intimate partner problems, MH/substance abuse, military job-related financial and criminal/legal activity. In addition, evidence of premeditation was present in



37.0% of suicides. These data supplement the quantitative suicide literature through use of qualitative methods that illustrate that suicide is generally not associated with a single problem but rather appears to result from the dynamic interplay of life circumstances and stressors. This study is unique in that it highlights several prominent precipitators of military suicide in a rare portrayal of Soldiers faced with managing a number of problematic and often highly emotionally charged circumstances that appear to have culminated in suicide.

The most frequent circumstance precipitating suicide was intimate partner relationship problems. This finding is concordant with recent research reporting that military decedents who attempted or died by suicide were 5 to 7 times more likely to have experienced a failed intimate relationship in the past 90 days compared to military controls (Skopp, Zhang, Smolenski, & Reger, 2016). These findings highlight targets for intervention and preventive efforts. For example, it may be beneficial for military clinicians to assess intimate relationship functioning, even when this is not the presenting problem, and to focus efforts on facilitating competent resolution of partner relationship problems when such problems exist. Efforts of this kind may potentially avert suicide crises associated with partner relationship dysfunction and dissolution.

Through the identification of the most common proximal suicide circumstances and further review of narratives, missed opportunities for suicide prevention came to light. For instance, although MH and substance abuse problems were highly prevalent, only one third of decedents received MH services. This is particularly concerning given that 80% of individuals who attempt suicide have been diagnosed with a MH disorder (Nock, Hwang, Sampson, & Kessler, 2010). Unfortunately, it is not uncommon for SMs to exhibit significant reluctance toward seeking professional help because of MH stigma (Coleman, Stevelink, Hatch, Denny, & Greenberg, 2017; Weeks, Zamorski, Rusu, & Colman, 2017). Addressing MH stigma is key to the military suicide prevention mission (VanSickle, Tucker, Daruwala, & Ghahramanlou-Holloway, 2016). MH stigma is multifaceted, thus a multilevel approach is required to address a current gap in the development and long-term follow-up of effective stigma reduction interventions (Coleman et al., 2017; Gronholm, Henderson, Deb, & Thornicroft, 2017; Thornicroft et al., 2016). There is some evidence for the short-term benefit of attitudinal change with regard to seeking MH care (see Thornicroft et al., 2016 for a review) and self-stigma reduction interventions (Lucksted et al., 2011; Wade, Post, Cornish, Vogel, & Tucker, 2011). Military MH providers can also play a vital role in reducing stigma associated with seeking MH care and helping military leaders to reinforce the message that Soldiers are encouraged to access assistance for MH issues and distressing personal circumstances.

Consistent with prior civilian (Beautrais, 2001; Roy, 2003) and military research (Skopp et al., 2016) legal problems were among the most common proximal circumstances identified. Earlier research reported that military suicide decedents were 2 to 4 times more likely to have had recent military or civilian legal problems compared to military controls (Skopp et al., 2016). A possible link between legal problems and suicide may be a sense of humiliation and alienation that may increase the risk of suicide, consistent with one of the leading theories of suicide (Joiner, 2005). Legal problems can also be associated with employment difficulties, financial problems or incarceration. As revealed in our

study, military job-related and financial problems were also among the top precipitating circumstances identified. Additional investigation is needed to examine how specific types of legal offenses, job and financial problems may relate to suicide and other suicide risk factors.

Our findings highlight the potential value of vigilance for any form of premeditation. Of the 50 cases in our sample that involved premeditation, many were experiencing intimate partner problems, and 10 disclosed suicidal intent to their partners. However, spouses and friends might not be aware of how to intervene when such disclosures are made. Furthermore, some informants believed the decedents were in treatment and perhaps thought interventions to address suicidal ideation were already in place. Public intoxication of some decedents prior to suicide suggests the possible utility of bystander interventions. The National Suicide Prevention Lifeline is one resource that concerned bystanders may offer to individuals who express suicidal ideation or seem hopeless. The Veterans Crisis Line can link at-risk Veterans as well as their friends and families with responders qualified to help in moments of crisis (Veterans Crisis Line, 2016). In addition, use of nontraditional modes of MH support such as telehealth (Kasckow et al., 2016) and mobile apps that allow wide dissemination and 24-hr access to sources of help may prove useful (Franklin et al., 2016) and also fit with the technology-intensive lifestyle of today's military populations.

It is noteworthy that the suicide narratives reflect Soldiers who were experiencing significant problems across multiple domains and that there were instances in which suicide decedents took their lives in close temporal proximity to periods of heavy or binge drinking, heated arguments, and/or feeling overwhelmed. It is conceivable that the presence of multiple stressors overburdened Soldiers' coping and emotion regulation resources, or vice versa. Several recent studies document a link between emotion regulation and suicidal behaviors (Ghorbani, Khosravani, Sharifi Bastan, & Jamaati Ardakani, 2017; Neacsiu, Fang, Rodriguez, & Rosenthal, 2017; Wang, Weiss, Pachankis, & Link, 2016). Moreover, preventive efforts emphasizing coping/emotion regulation skills may be beneficial to military suicide prevention. A recent randomized controlled trial of an intervention designed to improve coping skills and adaptation to stressful situations showed promising results in reducing suicidal ideation (posttreatment effect size =  $-3.09$ ; 3-month maintenance =  $-3.44$ ; Life Adaptation Skills Training—LAST; Chen et al., 2015). Although we were unable to test associations between coping/emotional regulation skills and suicide with our data, future empirical investigation of this topic appears warranted.

This study has limitations that should be noted. Only U.S. states participating in NVDRS were available for analysis. In addition, causal pathways connecting precipitating factors to the suicides cannot be determined. Data on precipitators was limited to the perceptions of the informants, which could be biased; nevertheless these data are based on personal expertise, witness testimonies, material evidence, and adherence to established standards. Another limitation is that manner of death is sometimes misclassified as accidental or undetermined in cases of suicide because of an inability to determine the decedent's intent. Such misclassifications impact both surveillance efforts and knowledge surrounding the precipitators of these deaths. It should also be noted that these data were abstracted from Soldier records, which may or may not be generalizable to SMs from other branches of

service. Finally, the narrative data are secondary sources and not drawn from structured interviews, which limit the ability to adapt rigorous etiologic-based analyses. Nevertheless, the narrative data used for the current study were derived from multiple sources and viewpoints; as such they provide a rare view of the decedents' final days.

In conclusion, the suicide narratives examined in this research reflect the need for primary prevention strategies to help ameliorate problems before they become too overwhelming. Prevention strategies are needed to support individuals, their relationships and social environments (Centers for Disease Control, 2016). Our findings highlight the importance of ensuring that Soldiers are equipped with coping skills tailored to the demands of military life and are aware of sources of support available when difficulties arise.

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**Table 1**

## Demographic Characteristics of Active Duty U.S. Army Suicide Decedents 2005–2010

Characteristic	No. (%)
Age	
17–24	58 (43.0)
25–29	31 (23.0)
30–39	30 (22.2)
40–59	16 (11.8)
Gender	
Male	130 (96.3)
Female	5 (3.7)
Race/ethnicity	
White, non-Hispanic	97 (71.8)
Black, non-Hispanic	18 (13.3)
Hispanic	11 (8.2)
Other	9 (6.7)
Marital status	
Never married	45 (33.3)
Married	78 (57.8)
Widowed, divorced, or separated	10 (7.4)
Unknown	2 (1.5)
Component <sup>a</sup>	
Regular	115 (85.2)
Reserve	8 (5.9)
National Guard	11 (8.2)
Rank <sup>b</sup>	
E1-E2	12 (8.8)
E3	21 (15.6)
E4	38 (28.2)
E5	22 (16.3)
E6	14 (10.4)
E7	12 (8.9)
E8-E9	5 (3.7)
O1–10	7 (5.2)
WO1–5 or other	4 (2.9)
Deployment/Combat History	
1–2 deployments	48 (35.6)
3+ deployments	11 (8.1)
Unknown number of deployments	25 (18.5)
Known to have orders to deploy	10 (7.4)
Experienced direct combat	25 (18.5)

*Note.*  $N = 135$ . Data were provided by the National Violent Death Reporting System.

<sup>a</sup>Sample size varied for Component ( $n = 134$ ).

<sup>b</sup>E = enlisted ranks; O = officer ranks; WO = warrant officer ranks.

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**Table 2**  
 Number and Percent of NVDRS-DoDSER Categories and Subcodes Noted for Active Duty U.S. Army Suicide Decedents Within Major Subgroups and Entire Sample

Topic code	No. and % within subgroup	No. and % within entire sample
<b>Intimate partner problems</b>	<b>85 (100.0)</b>	<b>85 (63.0)</b>
Arguments	26 (30.6%)	27 (20.0)
Abandonment	24 (28.2)	24 (17.8)
Divorce/break-up	30 (35.3)	30 (22.2)
Infidelity	15 (17.6)	15 (11.1)
Intimate partner violence perpetration	12 (14.1)	12 (8.9)
Other intimate partner problems	22 (25.9)	22 (16.3)
<b>Mental health (MH) and substance abuse problems</b>	<b>70 (100.0)</b>	<b>70 (51.9)</b>
Depression	29 (41.4)	29 (21.5)
Post-traumatic stress disorder	15 (21.4)	15 (11.1)
Alcohol abuse	29 (41.4)	29 (21.5)
Substance abuse	8 (11.4)	8 (5.9)
In treatment for unidentified MH problems	23 (32.9)	23 (17.0)
Untreated/undiagnosed MH problems	16 (22.9)	16 (11.9)
<b>Military job-related problems</b>	<b>63 (100.0)</b>	<b>63 (46.7)</b>
Article 15, AWOL, Court martial proceedings	13 (20.6)	13 (9.6)
Administrative separation	9 (14.2)	9 (6.7)
Deployment		
Anticipated deployment	8 (12.7)	8 (5.9)
Recent return from deployment	10 (15.9)	10 (7.4)
Problems with coworkers	6 (9.5)	6 (4.4)
Unspecified job problem	20 (31.7)	20 (14.8)
<b>Evidence of premeditation</b>	<b>50 (100.0)</b>	<b>50 (37.0)</b>
Suicidal ideation	24 (48.0)	24 (17.8)
Suicide attempts	13 (26.0)	13 (9.6)
Left a note	24 (48.0)	24 (17.8)
Disclosure of suicidal intent/ideation	26 (52.0)	26 (19.3)

Topic code	No. and % within subgroup	No. and % within entire sample
<b>Financial problems</b>	<b>24 (100.0)</b>	<b>24 (17.8)</b>
Debt	6 (25.0)	6 (4.4)
Loss of home	2 (8.3)	2 (1.5)
Other financial problems	17 (70.8)	17 (12.6)
<b>Criminal/legal problems</b>	<b>22 (100.0)</b>	<b>22 (16.3)</b>
Sexual misconduct	10 (45.4)	10 (7.4)
Drug/alcohol related	7 (31.8)	7 (5.2)
Domestic violence or child maltreatment	5 (22.7)	5 (3.7)
Recent arrest/pending arrest	5 (22.7)	5 (3.7)
Unspecified criminal/legal problem	2 (9.1)	2 (1.4.8)

*Note.* N= 135. Categories are not mutually exclusive. Article 15 is a Commander-issued non-judicial punishment used in the military, typically to punish minor misdemeanors infractions. NVDRS-DoDSER = National Violent Death Reporting System—Department of Defense Suicide Event Report.

Overarching Categories Identified in Active Duty U.S. Army Suicides and Examples of Supporting Narrative Text

Table 3

Overarching category	Examples of narrative text supporting most frequently endorsed categories
Intimate partner problems	[V]ictim was separated from his wife but maintained an intimate relationship with her [divorce/break-up]. On day of incident, V's wife found out about V's girlfriend. She confronted the girlfriend, who then confronted the V. Later, the wife and V argued about his infidelity. V grabbed a firearm and told wife "You won't see me again" and walked outside [disclosed intent]. Wife immediately reported the disclosure [attempt to intervene]. V also had other problems including a driving under the influence (DUI) charge [alcohol-related criminal/legal problems] that resulted in job problems [military job-related problems]. He had a lot of debt [financial problems] and problems with an intimate partner [other IPP]. V had previously threatened to shoot himself [history of suicidal ideation] and had a family history of suicide [family history of suicidal behavior].
Mental health/substance abuse problems	V had been having symptoms of depression and possible PTSD [MH problems]. He likely began abusing alcohol as a coping mechanism and became alcohol dependent [alcohol abuse]. V's reported MH problems and alcohol abuse began causing marital problems [IPP] and legal problems after he received a DUI [alcohol-related criminal/legal problems]. His problems exacerbated at both home and work, which further contributed to his MH problems [unspecified military job-related problems; unspecified IPP]. V likely felt hopeless and overwhelmed by his situation [negative emotional state]. He began drinking more and acted impulsively by hanging himself.
Military job-related problems	Soldier had a pattern of misconduct while in basic training [military job-related problems]. He got into a physical altercation with another Soldier days prior to his suicide [problems with coworkers]. He was caught selling contraband in the unit [criminal/legal problems] and had recently had money stolen from him. Soldier was in the process of receiving a bankruptcy discharge [military job-related problems].
Evidence of premeditation	Soldier was in the process of moving. He had a difficult time in training [military job-related problems] and was dealing with the recent death of parents [death of family members] and had thought of ending his life before reporting for duty [history of suicidal ideation]. Soldier was facing penalties for not having car insurance [criminal/legal problems]. Soldier subsequently became more hopeless [negative emotional state] and considered going AWOL [military job-related problems], but could not handle the possibility of incarceration, thus shot himself in his car on the day his leave ended.
Financial problems	V was training when he shot himself. There were other people around the immediate area that heard the shot [others nearby]. They went to check on the V and discovered him deceased. . . . V suspected of experiencing a significant degree of emotional conflict [negative emotional state]. The V had spoken of his concern for self-violence previously [history of suicidal ideation; disclosure of suicidal intent]. The day prior to the event the V had stated it best he not have access to a weapon. V's action was to relieve discomfort with chronic, emotional self-perceptions [negative emotional state].
Criminal/legal problems	The V had just been assigned to this base, had sent a text message to his wife who was still living in a different state and a friend that he was thinking about committing suicide [disclosure of suicidal intent; suicidal ideation]. The V had access to weapons. The V and his wife had been having an argument over the telephone this evening [IPP; argument], and the V had been drinking [alcohol immediately prior to suicide]. The V had attempted suicide in the past [history of suicide attempt]. He was provided anti-depressants to take for his depression but about a month ago he stopped taking the meds according to his wife [depression]. The V had posted a message on his social media earlier tonight that said he had been depressed his whole life. He wrote that he was sorry for what he was about to do. Police forced entry to the V's apartment and found him deceased from a gunshot wound to the head. The V's computer was "ON" and social media showed his mood was "depressed."
Financial problems	V was supposed to move out of his apartment today [potential loss of home]. Police were at the apartment complex when the manager asked police to check the apartment for the V. When police entered the apartment they found the victim lying on the floor in the bedroom; the rooms which were in a state of total disarray. V had called his supervisor two days earlier and reported that he was having money problems [financial problems]. The victim was listed as AWOL on today's date when he missed formation. The police report indicates that drugs were involved with the victim's death [substance use].
Criminal/legal problems	shot himself after a night of drinking [alcohol] immediately prior to suicide]. V was under investigation for charges of sexual misconduct [criminal/legal problems; sexual misconduct]. On the morning of the incident, he called friends and family making comments that he was sorry and saying other things that led them to believe he was suicidal [suicidal ideation, premeditation]. He left a suicide note [premeditation] to his wife saying he loved her and that he did not want his legal problems to affect her [criminal/legal problem]. was found deceased in his car . . . V was facing difficulties including an impending divorce [divorce/break-up], financial problems [financial problems], a family issue [family problems], and V was involved with another woman [infidelity]. V's daughter disclosed she had been given alcohol and sexually assaulted by the V [criminal/legal problems; sexual misconduct]. V had been told about the accusations prior to his death.

Note. Narrative details have been modified slightly to reduce risk of victim identification.