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Understanding Veteran Suicide by Firearm: A Conceptual Framework and Design for a Mixed Methods Study

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Abstract

Suicide is the 10th leading cause of death with 42,773 reported deaths in the United States in 2014, half of those transpire by firearm. Although veterans comprise only13% of the U.S. population, they account for 20% of all suicide deaths. About 67% of these deaths are by firearm, compared to about 50% in the general public. Many factors that place a person at risk for, or protect them from firearm suicide are known (e.g. gun ownership, knowledge of usage, etc.). However, few studies have examined the context and characteristics of those within the veteran population who have ideations or attempts of suicide by firearm resulting in psychiatric hospitalization. This manuscript aims to describe the conceptual framework, methods, and measures of a mixed methods study design for veteran survivors of a suicide attempt or ideation requiring hospitalization. Using a Department of Veterans Affairs funded pilot study as an example, we present the methods used for the study along with the Military History Questionnaire, Common Data Elements, and qualitative interview topics selected for use. This presentation of methods will assist others who may be interested in replicating a study on this important topic.

Keywords: Suicide, Firearm, Theory of Planned Behavior, Crisis, Hospitalization

Introduction

The Centers for Disease Control and Prevention reported 42,773 deaths from intentional self-harm (suicide) in the United States (U.S.) in 2014 (CDC, 2014); for each death, it is estimated that there are an additional 25 attempts (American Foundation for Suicide Prevention, 2016). Although veterans comprise only 13% of the U.S. population, they account for 20% of all suicide deaths (Newport, 2012). About 67% of these deaths are by firearm, compared to about 50% in the general public (DVA, 2016a). The Department of Veterans Affairs (VA) is the largest healthcare system in the U.S., with a top healthcare priority of preventing suicide through early identification of risk, providing crisis interventions, and providing continued research and attention to decrease the rates of suicide among Veterans (Department of Veteran Affairs, 2016a). Yet, little is known about why the leading method of veteran suicide (firearm) is chosen, what actions were taken, and whether other methods would be used if firearms were not available.

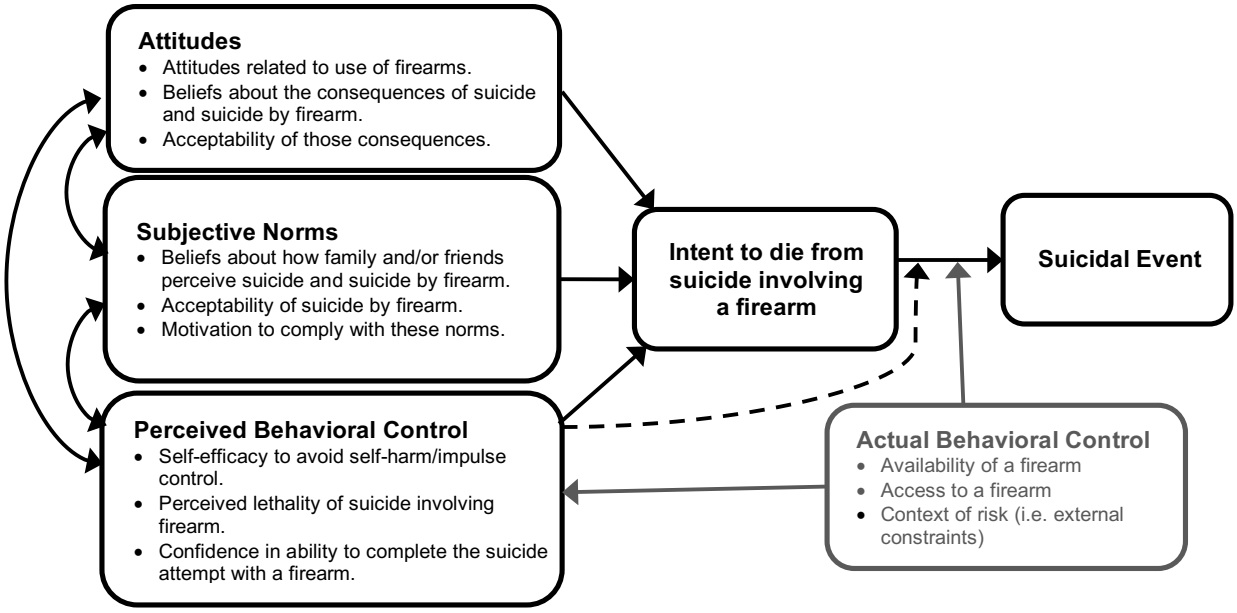
Conceptual Framework

To gain insight into these questions, we first must understand the perspectives of veterans experiencing serious suicidal ideation or attempting suicide using a firearm. We frame our analysis from the perspective of veterans' descriptions of their personal thoughts, behaviors, and actions prior to the suicidal behavior using the Theory of Planned Behavior for Understanding Suicide Events (George, 2008). The Theory of Planned Behavior (TPB) for Understanding Suicide Events is an adaption of the original Theory of Reasoned Action (TRA; Fishbein, & Ajzen, 1975, 2010; Ajzen & Fishbein, 1980), and the extension, Theory of Planned Behavior (TPB; Ajzen, 1985, 1991) to the context of suicide. The TPB describes an individual's behavior (e.g., use of firearm in a suicide event)

as guided by their intentions, which are influenced by three underlying factors: attitudes, subjective norms, and behaviors.

The first factor is the individual's **attitude** toward the behavior, which has three components: attitudes related to the behavior, opinions about the consequences of the behavior, and the acceptability of those consequences. The second factor, the **subjective norm**, is the individual's estimate of the social pressure to perform or not perform the behavior. Subjective norms are the beliefs held by the individual that are learned or perceived as opinions or expectations of the culture or community in which he or she belongs. For this article, the terms subjective norms and beliefs are used interchangeably. The third factor is the extent to which an individual feels able to enact the **behavior**, which is determined by how much an individual has control over the behavior and how confident they feel about being able to perform the behavior (Francis, et al., 2004). These three factors co-mingle, influence one another, and their outcome can be mediated by actual (rather than perceived) behavior (See Figure 1).

Figure 1. Conceptual Framework: Theory of Planned Behavior for Understanding Suicide Events. Adapted from The theory of planned behavior (Ajzen, 1991, p. 182); *Constructing questionnaires based on the theory of planned behavior. A manual for health services researchers* (J. Francis et al., 2004, p. 8); and "Utilizing the theory of planned behavior to explain suicidal intent (George, 2008, p.p. 51–3).



We used this adaption of the TPB theory for suicide experiences (George, 2008; Francis, et al., 2004) to guide our investigation into the attitudes, subjective norms, and behaviors of 15 veterans admitted to inpatient psychiatric care in one VA healthcare facility as a result of their attempted suicide by firearm or their serious suicidal ideation to use a firearm to cause their death. We used a mixed method design for our study, with semi-structured qualitative interviews and quantitative self-report surveys to explore veterans' attitudes, beliefs, and behaviors in the time period leading up to the hospitalization. The semi-structured interviews were conducted within 72 hours of hospitalization on an in-patient psychiatric unit to identify individual level characteristics and to describe the context involving the veteran and the suicide event.

Study Aims

For this exploratory study, our first aim was to document the context and characteristics of non-fatal suicide events involving firearms among veterans, which involved four objectives: describing the environment of risk in the time period immediately surrounding the suicide event (e.g. stressors, precipitating events, etc.); identifying the process for obtaining access to the firearms during periods of increased suicide risk, including processes of acquisition, location within the home, and use of safety devices such as gun safety locks; assessing the attitudes related to and history of firearm use and safety; and identifying the reason(s) for selecting a firearm. Our second aim included identifying past history of suicide attempts and facilitators and barriers to help-seeking. Additionally, our second aim focused on describing the veteran's patterns of help-seeking, services used prior to the suicide event, and factors associated with aborted or interrupted suicide attempts. Our third aim involved developing recommendations for firearm safety during periods of extreme crisis and emotional distress.

Study Design

This mixed methods study used a convergent (or parallel) design that collected both qualitative and quantitative data at the same time with the intent to merge data derived for analysis (Creswell, 2009). The study defined suicide ideation as, "thinking about using a firearm to inflict self-harm with the intent to die"; and a suicide attempt as, "a non-fatal self-injury with a firearm with the intent to die." Documentation included veterans' perspectives on environmental and personal risk factors, as well as their thoughts, beliefs, and actions that led to hospitalization. By conducting interviews and surveys with veterans who survived or seriously contemplated suicide by firearms, this design allows for in-depth data collection on the reasons veterans most often choose firearms as a method for suicide. In addition, the study allows for an understanding of the decision-making process associated with the suicide attempt and ideation. Obtaining these results will allow the possibility of creating informed policies, novel public health approaches, and more efficient clinical practices in the VA in hopes of reducing the risk of suicide by firearm. The methods described were approved by the Central Arkansas Veterans Healthcare System Internal Review Board.

Participants

This study focused on learning the thoughts and behaviors during the crisis event and as the individual deescalated. To be eligible for our study, veterans must (a) have been admitted to a VA inpatient psychiatric unit in a VA healthcare facility following a firearm suicide crisis within the preceding 72 hours, (b) be at least 18 years of age, (c) be certified by the attending physician as mentally and physically able to complete the interview, and (d) speak English. The 72-hour window for interviews was important because this time frame remains a particularly high-risk time for suicide re-attempts and yields a more timely and accurate understanding of the veteran's attitudes, beliefs, and behaviors (George, 2008, Hunt et al., 2009; Hawton, 2007; Harvard School of Public Health, 2016).

To identify eligible participants for the study, the research team included an attending psychiatrist as a co-investigator to engage and recruit patients. Veterans entering the VA's psychiatric unit were screened daily by this psychiatrist to determine their eligibility to participate. After discussing the study with potential participants, the psychiatrist informed the research team of eligible veterans who had expressed interest in participating in the study. A member of the research team, typically, the principal investigator, met in-person with the veteran, described the study, completed the consent process, and administered the instruments if the veteran chose to participate.

Data Collection Procedures

To assure quality reporting, we were guided by the Consolidated Criteria for Reporting Qualitative Research (Tong, Sainbury, & Craig, 2007), a 32-item comprehensive checklist for interviews and focus groups that provides evidence-based recommendations for authors to describe key aspects of the research team, study methods, context of the study, findings and analysis. During the nine-month recruiting period between December 2014 and August 2015, a total of 16 veterans were eligible for the study. Fifteen male veterans with a mean age of 42 provided written informed consent and completed the study for a 94% response rate. Fourteen of the 15 interviews were conducted by the study's principal investigator, a female, PhD-level licensed counselor with doctoral and post-doctoral training in crisis intervention and prevention, suicide psychological autopsies, suicide research methods and qualitative methods. The other interview was conducted by a co-investigator, a male with a doctorate in health sciences leadership and organizational behavior who has experience conducting mixed methods research and qualitative interviewing in the VA for numerous research projects.

After obtaining informed consent, the interviewers followed an interview guide to ensure the needed data were collected. For this study, there were two versions of the interview guide, one for veterans who attempted suicide using a firearm, and a second for those who seriously contemplated, but did not make a suicide attempt. The interview guides were similar in content but used specific terms to define the veteran's actions as engaging in "suicidal ideations" or "suicide attempt." For example, the interview conducted with participants who seriously contemplated, but did not attempt suicide included a section exploring the factors that averted the suicidal crisis. This difference allowed researchers to query more extensively why the person did not ultimately attempt suicide with a firearm despite seriously considering that action.

The first question on the interview guide focused on asking participants to tell their story about their suicide event. Once the participant finished sharing this narrative, the interviewer continued the interview questions. The guide included open-ended questions and prompts to elicit participants' descriptions of their experiences. Interview prompts, which were developed and evaluated by the research team and the VA Mental Illness Research, Education and Clinical Center's Implementation, Design and Analysis Support Program, inquired about the attitudes, beliefs, values and behaviors of the veteran related to suicide and suicide by firearm. Following this, the veterans were asked a series of questions on their demographics and military history prior to being asked to complete a structured self-report survey. Only the veteran and the interviewer were present during data collection, which occurred in a private location within the inpatient psychiatric unit at the VA. Interviews lasted approximately two to two and one-half hours and were audio recorded and professionally transcribed verbatim. The veterans' names or names identifying other individuals were omitted and replaced with "[name]." Each transcript was reviewed by the interviewer to ensure accuracy prior to data analysis.

Measures

This study utilized two primary sources of data collection: semi-structured qualitative interviews and a set of self-report standardized quantitative measures.

Qualitative Data. The interview guide (Table 1) consisted of two main sections. The first section focused on the veterans' thoughts about suicide, while the second section focused on their feelings and attitudes about firearms. Within the section on suicide, three questions related to their thoughts, events that occurred when the veteran attempted or thought about attempting suicide, and any concerns that caused hesitation about attempting suicide. The second section, which focused on the use of firearms, contained four questions about the choice of a firearm, the role of firearms in their life, and history of and storage practices of firearms in the home. A final question asked the

veteran to share any other thoughts about the use of firearms or about their suicide attempt or ideation.

Table 1
Interview Guide on the Contexts and Characteristics of Non-Fatal Suicide Attempts Involving Firearms

Topic	Instructions / Questions / *Probes / Follow up questions*
Instructions	*Note to interviewer: Main questions are numbered, and possible probing questions are bulleted underneath.

Suicide

Some veterans consider taking their lives and some commit suicide. I'd like to talk to you about your thoughts on suicide.

1. Can you tell me about your thoughts on suicide?
   Possible probes:
   - How often would you say you've thought about suicide?
   - What about attempted suicide?
   - What were the methods you had considered, and what helped you get through those times?
   - How do those close to you (e.g. family and/or friends) feel about suicide?
   - Has anyone close to you EVER died by or attempted suicide?
2. What happened when you attempted/thought about attempting suicide?
   Possible probes:
   - Was your attempt or ideation an impulse or had you been developing a plan?
   - What do you recall were your initial thoughts and what did you do in response to this/these event(s)?
   - Did you try anything to avoid hurting yourself? If yes, what did you try?
   - How did you know what to do and did you practice loading and unloading the firearm?
   - How confident were you that the use of a firearm would lead to your death?
   - Did you consider methods other than a firearm during this attempt?
   - Where you drinking or using any drugs at the time?
3. Do you remember having any concerns that caused hesitation or made you think twice about attempting or committing suicide? (e.g., family, religion, responsibilities).
   Possible probes:
   - Tell me about what you thought would happen after your attempt/ideation? What did happen?

Firearms

I'd like to talk about the ways that people go about committing suicide, and specifically about using firearms.

4. What factors or considerations did you **think about** that led to your choosing a firearm for your suicide attempt/ideation?
   Follow–up question:
   - How did you choose the particular firearm that you used/considered using in your suicide attempt/ideation?
5. How have firearms played a role in your life?

Possible probes:

- Were there firearms in the house when you were growing up?

If yes:

- What type, how many, and what was their main purpose/use (*recreation, hunting, home protection, collecting*)?

6. When did you own your first firearm? Did you have firearms in your home prior to the attempt/ideation?
7. Do you currently keep firearms in your home?

If yes:

- What are these mainly used for (*e.g., security, hunting, collecting, recreation, or etc….*)?
- What firearm safety measures do you currently use? (*e.g., gun locks, gun safes, gun safety or hunter education courses*)
    - *If no to locks or safe:* What measures do you use? (e.g., *Are they out of reach for children, bullets separate from guns, locked ammo, loaded firearms or generally are they uncontrolled and accessible?*)
- How do your family and friends feel about you having firearms (*if individual does have firearms*)?
- How often (*do you currently or did you previously)* handle your firearm(s).

Follow-up question: Has that changed?

Conclusion

I appreciate the time that you have taken to answer these questions about what must have been a very difficult time in your life.

Is there anything else that you would like for us to know about the use of firearms or about your suicide attempt/ideation?

Quantitative Data. Quantitative measures included Veteran demographics, health history, military history and a 57 item Common Data Elements (CDE) self-report questionnaire (See Table 2 for an overview of these measures) developed and tested by the Military Suicide Research Consortium (MSRC, nd).

Demographics. A 15 item self-report measure was administered to collect information on demographics and included questions on sex, age, marital and employment status, education level, among others.

Health History. A 12 item self-report of health history was administered to collect information on mental and physical health treatments.

Military History. Military history was measured using 13 items that included the Veteran's service and deployment history in the U.S. Armed Forces. (See Table 2 for the questions and response options.)

Table 2
Demographic and Military History Questions and Response Options

Items	**Response Options**
Demographics	
What is your biological sex?	Check one: __Male __Female

How old are you?	Fill in the blank_____
What is your height?	_____ ft. _____ in.
What is your weight?	_____ lbs
What is your marital status?	Check one: _Never married _Widowed _Separated _Divorced/ Annulled _Married _Not married
Who do you currently live with?	Check all that apply: _Alone _Other relative _Friend or roommate _Spouse or romantic partner _Children (under 18)
What is your highest education level completed?	Check one: _Elementary (8th grade or less) _Bachelor's Degree _Some High School _Master's Degree _High School Diploma or GED _Doctoral or professional degree (PhD, MD, etc.) _Some College
What best describes your current employment status?	Check one: _Unemployed _Part-Time _Home Maker _Full-time (40 hours per week or more)
What best describes your total household income (before taxes)?	Check one: _Less than 10,000 _$10,000 to $20,000 _$21,000 to $30,000 _$31,000 to $50,000 _$51,000 to $100,000 _Greater than $100,000
Do you describe yourself as a Hispanic or Latino?	Check one: __No __Yes
What is your race?	Check one: _White _American Indian, Alaska Native _Black/African American _Native Hawaiian or Other Pacific Islander _Asian _Multiracial (list____& ____& ____)
Health History	
In your lifetime, how many different times have you been admitted for an overnight stay in a hospital or other facility to receive help for problems with your emotions, nerves, or mental health?	Fill in the blank (NOT including this hospital stay; If more than zero, then go to next question)

In the past 12 months, how many different times were you hospitalized overnight for your emotions, nerves, or mental health?	Fill in the blank (NOT including this hospital stay; If more than zero, then go to next question)
Not including this hospital stay, when was the last time you were hospitalized for an overnight stay?	Fill in the blank (Calculate response in # of days prior to this attempt)
Have you ever used a prescription medicine for your emotions, nerves, or mental health from any type of professional?	Check one: _No _Yes (NOT including any medications taken during this hospital stay; Interviewer if yes, go to next question)
Did you use a prescription medicine of this type at any time in the past 12 months?	Check one: _No _Yes (If yes, go to next question)
When was the last time you saw or talked to the person who prescribed any medication for your emotions, nerves or mental health	Fill in the blank (Calculate response in # of days prior to this attempt)
When was the last time that you took any medication prescribed to you for your emotions, nerves or mental health (remember that we are asking about the time period prior to this suicide attempt and not since you have been in the hospital)?	Fill in the blank (Calculate response in # of days prior to this attempt)
In your lifetime, NOT counting the times you were an overnight patient in the hospital, how many sessions of psychological counseling or therapy for emotional problems did you have that lasted 30 minutes or longer with any type of professional?	Check one: _No _Yes (If yes go to next question)
Have you had a therapy session with anyone in the last 12 months?	Check one: _No _Yes (If yes go to next question)
When was the last time you had a therapy session in the past 12 months	Fill in the blank (Calculate response in # of days prior to this attempt)
When was your last appointment with a doctor or nurse for physical health reasons (i.e., prior to this attempt).	Date: (calculate response in number of days prior to this attempt)
Type of provider: We are interested in what type of provider(s) you saw at your last physical health visit with a Doctor or nurse.	Please indicate below whether you saw any of the types of providers listed below during that visit.

	_Physician (MD) or Doctor of Osteopathic Medicine (DO) _Nurse Practitioner (NP) _Physician Assistant (PA) _Registered Nurse (RN) or Licensed Practical Nurse (LPN) _Other physical health provider: (Write in type of other provider)_____ Reason for visit: _____
Military History	
Have you ever served in the U.S. Armed Forces?	Check one: _No (if no, skip next question). __Yes
Are you still serving on <u>active duty</u> in the U.S. Armed Forces?	Check one: __No __Yes
Did you ever serve in the National Guard or other reservist-type duty?	Check one: _No _Yes (if yes, go to next question; If "yes" to item #1 and "no" to item #3, skip to item #6)
Did your military service consist entirely of National Guard or other reservist-type duty, such as initial training, weekly or monthly meetings, and yearly summer camp?	Check one: _No _Yes (If yes, go to item #5; If no, skip to item #6.)
Was your National Guard or Military Reserve Unit ever called into the regular Armed Forces, or were you ever called up for active duty, not counting the 4 to 6 months duty for initial training or yearly summer camp?	Check one: __No __Yes
During what month and year did you BEGIN your active service in the U.S. Armed Forces?	Fill in the blank (mo) (yr)
During what month and year were you LAST released from ACTIVE DUTY in the U.S. Armed Forces?	Fill in the blank (mo) (yr)
In what branch or branches of the U.S. Armed Forces did you serve?	Check all that apply: __Air Force __Navy

	__Army __Other_____ __Coast Guard __n/a (skipped) __Marine Corps __Refused/missing
Any other branch (code from above list)?	Check one: __No __Yes
While on active duty, what was your highest grade or rank?	__Commissioned officer __Noncommissioned Officer __Enlisted Ranks __n/a (skipped, no military service) __refused/missing
What was your primary job (what you were assigned to do for the greatest amount of time)?	Fill in the blank: _____ __n/a (skipped, no military service) __refused/missing
During your military service, were you ever in or exposed to combat situations, such as flying in an aircraft over a combat zone, receiving incoming fire from enemy artillery, rockets or mortars, receiving sniper fire or sapper fire, or seeing Americans being killed or wounded?	Check one: __No __Yes __n/a (skipped, no military service) refused/missing
Did you serve on the ground, in nearby coastal waters, or in the air above, after September 11th, 2001 in the OIF theater (Iraq, Kuwait, Saudi Arabia, Turkey) or OEF theater (Afghanistan, Georgia, Kyrgyzstan, Pakistan, Tajikistan, Uzbekistan, the Philippines)?	Check one: __No (skip to next scale) __Yes __n/a (skipped, no military service) refused/missing
How many times were you deployed to the OIF theater or OEF theater?	Check one: _one time _Five or more times _two times _n/a (skipped, never deployed) _three times _refused/missing _four times

Common Data Elements (CDE). As indicated in Table 3, this 57 item self-report questionnaire broadly covers individual's attitudes, beliefs, and behaviors about suicide and his or her history of suicide attempts and ideation. The items assess suicidal thoughts and behavior (current thoughts about suicide, history of suicidal behavior, wish to live vs. wish to die), relevant cognitive and

emotional variables (hopefulness, belongingness), anxiety sensitivity and symptoms of post-traumatic stress disorder, insomnia, history of traumatic brain injury, and alcohol and substance use. Forty-three items were drawn from published measures of suicide risk and protective factors, including: the entire four item Suicidal Behaviors Questionnaire-Revised (Osman et al., 2001); four items selected from the Depression Symptom Index-Suicidality Subscale (Metalsky & Joiner, 1997); two items from the Beck Scale for Suicidal Ideation (Beck & Steer, 1991); three items from the Beck Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974); five items from the Interpersonal Needs Questionnaire (Van Orden, Cukrowicz, Witte, & Joiner, 2012); five items from the Anxiety Sensitivity Index-3 (Taylor et al., 2007); eight items from the PTSD Checklist – Military Version (Weathers, Litz, Herman, Huska, & Keane, 1993); five items from the Insomnia Severity Index (Bastien, Vallieres, & Morin, 2001); the entire four item Traumatic Brain Injury-4 (Brenner et al., 2013; Olson-Madden et al., 2010); and three items from the Alcohol Use Disorder Checklist (Bush, Kivlahan, McDonnell, Fihn, & Bradley, 1998). The remaining 13 items were written by MSRC investigators and reflect their extensive knowledge of the suicide assessment field. The CDE was administered to veteran participants during the baseline interview only.

Table 3
Measures in the Common Data Elements (CDE)

Measure	**Items on Measure (Question #s on CDE instrument)**	**Element(s) Addressed**	**Reference(s)**
Depression Symptom Index-Suicidality Subscale	4 items; (1-4)	current thoughts about suicide	(Metalsky & Joiner, 1997)
Suicidal Behaviors Questionnaire-Revised	4 items; (5-8)	current thoughts about suicide, history of suicidal behavior	(Osman et al., 2001)
MSRC Required Items	13 items; (9-18; 49-50; 51)	history of suicidal behavior; substance use; behavioral health treatment sessions	(MSRC, n.d.)
Beck Scale for Suicidal Ideation	2 items; (19-20)	wish to live vs. wish to die	(Beck & Steer, 1991)
Beck Hopelessness Scale	3 items; (21-23)	cognitive and emotional variables (hopefulness, belongingness)	(Beck et al., 1974)
Interpersonal Needs Questionnaire	5 items; (24-28)	cognitive and emotional variables (hopefulness, belongingness)	(Van Orden et al., 2012)
Anxiety Sensitivity Index-3	5 items; (29-33)	anxiety sensitivity	(Taylor et al., 2007)
PTSD Checklist – Military Version	8 items; (34-41)	symptoms of post-traumatic stress disorder (PTSD)	(Weathers et al., 1993)
Traumatic Brain Injury-4	4 items; (42-45)	history of traumatic brain injury (TBI)	(Brenner et al., 2013; Olson-Madden et al., 2010)
Alcohol Use Disorder Checklist	3 items; (46-48)	alcohol use	(Bush et al., 1998).
Insomnia Severity Index	5 items; (52-56)	Insomnia	(Bastein et al., 2001)

History of and Relationship to Suicide	1 item (57)	Knowledge of and relationship to an individual who died by suicide	(Matthieu et al., 2014)

Testing the Instruments. Often the credibility and dependability of qualitative interviews depends on rigorous techniques and methods used for gathering and analyzing the data (Patton, 1990; Rubin & Rubin, 2005; Speziale & Carpenter, 2007). To ensure the interview guide would gather the information needed to answer the research question while not being too intrusive or lengthy, the study team tested the measure using the email-based modified Delphi method to validate the content and structure of the qualitative interview guide with the assistance of five volunteer veterans (Waliski, Townsend, Castro, & Cheney, 2014).

Data Analytic Procedures

Qualitative. The qualitative data told the story of veterans experiencing severe urges to die by firearm. Analysis allowed the research team to provide insight into the commonality of attitudes, beliefs, and behaviors among this subsample of high-risk veterans. To integrate data collection, coding, analysis, and interpretation, thus ensuring that interpretation of findings and theory building were well-grounded in the data, the same two researchers who conducted the interviews, also conducted coding and analysis. Interviewers reviewed transcripts of the audio-recordings for accuracy. The interviewers then read each transcript and identified common themes or events in the data. These themes were identified as top-level codes for the data analysis. Definitions were developed for the themes and sub-level codes were identified. The interviewers then individually reviewed three interviews using the codes and definitions, met and reviewed the coded interviews and refined the definitions where needed. Prior to data analysis, all codes, definitions, and the analysis plan were discussed with a third researcher on the team who identified any bias that may have unexpectedly arisen and assisted in refining the codebook. Once the codes were finalized, the two interviewers read and coded all 15 interviews separately, then reviewed each interview together until agreeing upon all analyzed data. Transcripts were analyzed using Atlas.ti (Version 7) qualitative data analysis software. Upon completion of the independent thematic coding, the coded data from both interviewers were merged into one complete final data set of coded interviews.

Quantitative. Data from the demographic, military history and the Common Data Elements were compiled for quantitative analysis. However, the sample size for this exploratory study was based on key considerations for applying qualitative methods (i.e., being able to achieve saturation), and not for quantitative statistical analysis. As a result, analysis of the quantitative data is descriptive and exploratory rather than hypothesis-testing and is converged with the qualitative data for a rich description of the veterans' experience.

Conclusion

Suicide is a challenging topic to study. It has a low base rate and occurs infrequently in any one particular location. It can also be emotionally challenging not only for the research team to explore philosophical, ethical, and clinical issues surrounding death, loss, and grief with survivors of a suicide attempt, but also for the research participants, as it involves sharing and processing their desires and plans to bring about their death. This methods paper establishes a conceptual framework and study design to provide continuity in the research of death by suicide. Anchoring any suicide research in solidly designed and stable methods for research will aid progress in the prevention of death by suicide. It is anticipated that this methods paper will inform the broad field of veterans' services researchers.

To understand the suicide death of a veteran by firearm and its prevention, suicide researchers would be well served to investigate the beliefs, attitudes, and behaviors of the veteran about suicide and the role of firearms at the time of crisis. This information is critically necessary to aid the scientific and clinical communities to better identify the acceptability and effectiveness of firearms safety programs to prevent suicide in the veteran population. Using these methods, future manuscripts defining the study results will add to the literature through recommendations for policy, practice, and future suicide research with this vulnerable subpopulation of veteran suicide attempt survivors.

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