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# U.S. combat veterans' responses to suicide and combat deaths: A mixed-methods study

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ABSTRACT

*Rationale:* Limited research has examined how combat veterans experience deaths of comrades to combat or suicide. We sought to investigate the process and identify factors that predict the level of grief among post-9/11 U.S. veterans.

*Methods:* Using a mixed-methods study design during 2016–2017, U.S. combat veterans of the Iraq and Afghanistan conflicts who lost comrades to both combat and suicide (N = 28) participated in semi-structured interviews, and veterans who lost a comrade in combat or to suicide (N = 178) completed online surveys that assessed grief, combat exposure, unit cohesion, anger, posttraumatic stress symptoms (PTSS), and past diagnoses of PTSD and depression.

*Results:* Text analyses of interview transcripts revealed seven themes: 1) Suicide death is unexpected and can make acceptance of loss harder; 2) Combat death is expected and can ease acceptance of loss; 3) Combat death is heroic and can make acceptance of loss easier; 4) Brotherhood forged in combat intensifies the emotional response; 5) Guilt over the inability to prevent a comrade's death makes acceptance harder; 6) Attribution of blame for a death creates anger; and 7) Detachment from the civilian world may make it more difficult to cope with comrades' deaths. Regression analyses of survey data indicated: 1) suicide loss predicted non-acceptance of the loss; 2) mode of death moderated the association between unit cohesion and grief; 3) combat exposure, anger, closeness to the deceased, and having a past diagnosis of depression predicted the level of grief; and 4) combat exposure is a similarly strong predictor of grief and PTSS. Results highlight how veterans' grief further delineates war's toll.

*Conclusion:* The mixed-methods design tells a rich story about a previously unexplored consequence of war. These findings have important public health implications because outcomes impact not only veterans but also their families and communities.

## 1. Introduction

More than 5400 U.S. troops have been killed serving in Afghanistan and Iraq since the wars began in 2001 and 2003, respectively (Department of Defense, 2018). As the number of troops killed in action has declined, the military suicide rate has at times surpassed the rate of casualties (Williams, 2012). A military combat career carries a fundamental risk of injury or death, as well as the loss of comrades in battle. However, U.S. troops have borne the additional toll of losing comrades to suicide, which most often has occurred off the battlefield post-deployment (Bush et al., 2013). Until 2008, the U.S. military suicide rate was below that of the general population, yet it presently exceeds the civilian rate, and the military suicide rate is also greater than the combat casualty rate (Nock et al., 2013). A 2017 Iraq and Afghanistan Veterans of America (IAVA) survey found that 58% of post-9/11 veterans know a veteran who died by suicide and 65% know a veteran who has attempted suicide (Iraq and Afghanistan Veterans of America, 2017).

While there has been abundant research quantifying war's psychological impact, much of it has focused on posttraumatic stress disorder (PTSD), depression, and substance use or abuse associated with combat exposure (Lubens and Bruckner, 2018). The few grief studies in the military community have focused primarily on military families. For example, while studying the experiences of military children, Kaplow et al. (2013) used a framework that included the role of combat deployments, post-deployment reintegration of the service member, and the aftermath of combat death. The authors did not apply the same framework to the losses experienced by service members or veterans

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themselves.

Scant research has focused specifically on grief responses in military personnel, explored how troops feel if they have lost members of their units in battle or to suicide, or considered whether grief is a distinct outcome from PTSD. A few studies have focused on long-term grief in veterans (Cerel et al., 2015; Pivar and Field, 2004; Shatan, 1974). For example, in a study of veterans who experienced a suicide loss at some point in their lifetime, Cerel et al. (2015) found that perceived closeness to the deceased predicted prolonged grief. Highlighting the saliency of the issue, a study of U.S. Vietnam veterans decades after the conflict ended found that 68.1% reported losing a close friend in combat and their prolonged grief was associated with adverse physical and mental health and poor family relationships (Currier and Holland, 2012). Only one study has focused on grief in U.S. veterans who served in Afghanistan and Iraq — Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), respectively — and the researchers measured grief with a single item and examined its association with physical health problems (Toblin et al., 2012). Thus, although past research has elucidated grief in military families and has explored protracted grief over battle deaths in Vietnam veterans, we still know very little about how OIF/OEF veterans have experienced the loss of comrades and if their responses to combat and suicide deaths differ.

Despite the fact that there is limited grief research focusing on service personnel or veterans, research in the civilian community suggests that grief responses are highly variable (Wortman and Silver, 1989) and may depend on the circumstances and mode of death. Some literature highlights the differences between expected and unexpected deaths, and it attributes differential grief response to the unanticipated or sudden nature of a death (e.g., Bailley et al., 1999; Stroebe et al., 2012). Other research in the civilian community has drawn distinctions between suicide loss versus other forms of death in terms of survivors searching for the death's meaning, as well as differential emotions the losses engender, including guilt, shame, and anger (e.g., Jordan, 2001; Miles and Demi, 1992).

Additional literature focuses on unique responses to suicide. For example, Jordan (2001) described three primary differences between grief responses to suicide and grief over other causes of death: the "thematic content" of the grief, the social dynamics, and how grief may upset a family system. Moreover, other researchers have found a greater sense of rejection, a higher feeling of shame and level of grief (Bailley et al., 1999), or greater self-blame (Miles and Demi, 1992) in response to suicide death compared to other causes of death. Additionally, the confluence of negative social attitudes and poor social support following suicide loss (Cvinar, 2005) can complicate responses to suicide, largely due to the stigma associated with suicide itself (Ginsburg, 1971; Pitman et al., 2018), or to stigmatization of friends and loved ones of people who die by suicide (Doka, 2008; Jordan, 2001).

In addition to exploring grief responses to different circumstances or modes of death, civilian bereavement research also suggests that social support and a social network's quality are predictors of grief (e.g., Hibberd et al., 2010; Walker et al., 1977). Findings about the protective role of social support in bereavement suggest that military unit cohesion might influence the level of grief in service members or veterans. Unit cohesion in the military, which is an attachment akin to family ties or close social networks (Siebold, 2007), is comparable to civilian social cohesion and may play a similar socially-supportive role (Currier et al., 2018). This cohesion and familial-like attachment may predict the same sort of guilt in the military over suicide that has been seen in the civilian community. Furthermore, we might wonder if this familial-like bond among service members might also create guilt over failure to prevent the death of a comrade in battle, whereas the civilian response to a homicide death is less likely to evoke the same sort of guilt.

Although grief research in the civilian community raises important questions about grief in service members over the loss of comrades, there are substantial differences between civilian and military losses. For example, while studies in the civilian community typically classify both suicide and violent deaths as unexpected (e.g., Bailley et al., 1999), combat deaths — which are inherently violent — may be expected because death is intrinsic to war. On the other hand, military suicide deaths, particularly those that occur after troops have returned home, are likely to be unexpected. In addition, the societal stigmatization of suicide in the civilian community may also carry over to the military. In the military context, we might wonder if suicide is stigmatized as a sign of weakness, or if a person who dies by suicide is regarded as having been cowardly compared to the person who dies in combat, who may be regarded as a hero. Consequently, veterans might feel more grief over a combat death than a suicide death.

The uniqueness of military service and its duties may also distinguish predictors of grief among veterans from predictors of grief among civilians. Although combat exposure and combat trauma have been associated with deleterious psychological outcomes such as depression and PTSD (Lubens and Bruckner, 2018), given that combat exposure and loss of comrades in battle are likely to be inextricably linked, combat exposure may also be a risk factor for grief. Moreover, because we know that the suicide rate is higher in the military than in the civilian community (Nock et al., 2013), combat duty may not only be a greater risk for suicide, but also for suicide grief in comrades of the deceased. In addition to combat exposure, other factors that have been found to be associated with poor psychological responses to subsequent traumatic events, such as a history of mental health problems or prior adverse life events (Breslau et al., 2008; Seery et al., 2010), may also be relevant to understanding grief in combat veterans.

## 2. The present study

The purpose of this mixed methods study of U.S. OEF/OIF combat veterans was to delineate adverse outcomes in veterans by addressing a long-overlooked toll of combat service: grief. Using grief research conducted in the civilian community as a guide, our goal was to better understand how combat veterans experience the deaths of their military comrades to combat or suicide and what factors predict the nature and level of their grief. Through qualitative methods using semi-structured interviews, we sought to identify themes that characterize how a veteran experiences loss to combat or suicide. Via quantitative methods, we aimed to ascertain if the mode of death or other factors (e.g., combat exposure, unit cohesion, pre-enlistment life events) predict the level of grief. We investigated whether: 1) there is a difference in the level of grief associated with death of a comrade in combat compared to death of a comrade by suicide; 2) the level of grief in combat veterans is associated with their reported level of unit cohesion; and 3) other factors (combat exposure, anger, previous life events, past mental health diagnoses) are predictors of the level of grief among combat veterans. Finally, we compared results from the two methods of data collection to draw conclusions about how veterans reacted to the loss of military comrades from the recent wars in Iraq and Afghanistan.

## 3. Methods

All methods for the study were approved by the Institutional Review Board of the University of California, Irvine. Both components of this study were conducted simultaneously.

### 3.1. Recruitment

**Qualitative component recruitment.** For the qualitative component, we sought a sample population of OEF/OIF combat veterans who had lost military comrades to *both* combat and suicide. Purposive snowball sampling was used for recruitment to draw upon a broad range of perspectives. Snowball sampling is a form of chain referral sampling that began as a method of studying social networks (Heckathorn, 2011). It is used to access hard-to-reach populations or populations in which standard statistical sampling methods are not

feasible in the absence of a list from which participants can be drawn. Through snowball sampling, researchers create a sample network by receiving recommendations from existing participants for additional participants.

Recruitment commenced with a combat veteran who had lost military comrades in combat and by suicide. This veteran and others who were interviewed were asked to refer two others for recruitment, after securing permission to provide the lead researcher with their contact information. Additional recruitment continued through the lead researcher's military connections. In light of the study's focus specifically on combat veterans, female veterans were not included in this recruitment, because until 2015, combat jobs were not available to women in the U.S military (Kamarck, 2015), and thus few had yet completed infantry or combat training or had served in combat roles when the study was underway.

**Quantitative component recruitment.** Combat veterans who had completed the face-to-face interviews for the qualitative component were also asked to complete an anonymous, confidential online survey. Additional participants were recruited through 30 veterans' services offices on college and university campuses who were contacted based on their high ranking as veteran-serving institutions or their proximity to the homes of veterans who were interviewed for the qualitative study. Thirty-seven percent of the veterans' services offices who were approached agreed to disseminate an IRB-approved recruitment message that included a link to the online survey. Administrators of Facebook pages of 11 state or regional chapters of IAVA, also selected based on proximity to interview locations, were asked to post the recruitment message as well. Four administrators in San Diego and San Francisco, California; Eastern Michigan, and Connecticut agreed to do so. In addition, the message and survey link were disseminated by interview participants, including an individual affiliated with a peer-to-peer veteran's non-profit in South Carolina. Although women were specifically excluded from the qualitative component, the survey recruitment message did not explicitly exclude female veterans. Consequently, some female veterans responded to the survey.

### 3.2. Data collection

**Qualitative data collection.** All interviews were conducted in person in a location chosen by each veteran, were audio-recorded with the participant's consent, and lasted an average of 1.5 hours. Each interview commenced using an initial guide that included open-ended questions about the interviewee's military history, combat deployments, relationships with other members of his unit, and descriptions of any losses of comrades. Follow-up questions were prompted by responses to the initial queries. All veterans interviewed were given a $20 gift card and were provided with a list of mental health counselling resources in the event they felt they needed referrals following their interview.

**Quantitative component data collection.** The anonymous survey was administered online via Qualtrics. Participants in the qualitative component interviews were given a unique four-digit code so that their responses could be linked to their survey responses for future analyses. Veterans who completed the online survey were directed to an external link where they could enter a drawing for one of two $250 gift cards by registering their email address. Use of an external link, rather than requesting email addresses as part of the survey, ensured that any identifiable information could not be tied to any survey responses. Participants could complete the survey only once; upon submission of their responses, veterans were automatically directed to a webpage that provided them with a list of mental health counselling resources if after completing the survey they felt they needed referrals.

The survey included measures of grief, combat exposure, unit cohesion, posttraumatic stress symptoms (PTSS), and anger, as well as questions about the participant's military history, losses of military comrades, past PTSD and depression diagnoses, and demographic information. All measures were selected based on their past validation for use with combat veterans, their recommended use by the National Center for PTSD (a division of the Department of Veterans Affairs), or consultation with researchers who study veteran samples.

***Grief.*** The level of grief was measured using 12 of the 13 items from the Texas Revised Inventory of Grief (TRIG) - Present Module (Faschingbauer et al., 1987), a measure that has been validated for use in measuring grief in individuals who have lost someone close and asks respondents to rate on a 5-point Likert scale items describing responses to or thoughts about someone's death (1 = *completely false;* 5 = *completely true*). Sample items include statements such as: "I cannot accept this person's death" and "I am preoccupied with thoughts (often think) about the person who died." Participants were asked to think about one specific deceased comrade while responding to the items and to indicate if that person died in combat or by suicide. They were also asked to indicate what year that person died and how close they were to the deceased, which they rated on a 5-point Likert scale (0 = *not close at all*; 4 = *best friends*). Level of grief was the sum of participants' responses to the TRIG items ($\alpha = 0.93$). In addition, based on prior literature (Futterman et al., 2010), a modified version of a "non-acceptance" of loss subscale from the TRIG was used as an outcome and the items were summed ($\alpha = 0.89$).

***Combat exposure.*** Combat exposure was assessed using a 14-item modified version of the combat experiences measure used in the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS), a longitudinal mental health study conducted among active duty Army personnel that commenced in 2009 (Ursano et al., 2014). The measure asked participants to indicate how many times they had specific experiences (*0, 1, 2–4, 5–9, 10 or more)* while serving in combat. Items in the measure included statements such as: "Go on combat patrols or have other dangerous duty (e.g., clearing buildings, disarming civilians, working in areas that had IEDs)" and "Witness violence within the local population or mistreatment toward non-combatants." Combat exposure was the sum of the responses to the items ($\alpha = 0.82$).

***Unit cohesion.*** Unit cohesion was measured using a revised version of the Unit Support measure from the Deployment Risk and Resilience Inventory-2 (DRRI-2), a package of measures created by the National Center for PTSD and validated for use with veterans (Vogt and Smith, 2013). The five-item measure asked participants to rate on a 5-point Likert scale how much they agreed (1 = *strongly disagree*; 5 = *strongly agree*) with statements about how close they felt to members of their unit and about interactions with members of their unit. Items included statements such as: "My unit was like family to me" and "People in my unit were trustworthy." Unit cohesion was a sum of the responses ($\alpha = 0.93$).

***Posttraumatic stress symptoms.*** Posttraumatic stress symptomatology (PTSS) was measured using the 20-item PTSD Checklist for DSM-5 (PCL-5) (Weathers et al., 2018), revised using the same wording as the military version of the PCL-4 to specify military traumatic experiences. The PCL-5 is a self-report measure validated for assessing the DSM-5 symptoms of PTSD. Respondents are asked to rate on a 5-point Likert scale (1 = *not at all*; 5 = *extremely*) "how much" in the past month they had various responses to past military experiences, such as "Repeated, disturbing, and unwanted memories of a stressful military experience" and "Feeling jumpy or easily startled." Responses to the PTSS measure were summed ($\alpha = 0.96$).

***Anger.*** Anger was assessed using the six-item Dimension of Anger Reactions (DAR) measure, specifically designed to measure anger in veterans (Novaco, 1975). The measure asks respondents to rate on a 5-point Likert scale the degree to which statements describe their anger-related feelings or behavior, and whether anger interferes with their work (1 = *not at all*; 5 = *very much*). Sample items include "I often find myself getting angry at people or situations" and "My anger interferes with my ability to get my work done." Level of anger was the sum of responses to the DAR items ($\alpha = 0.91$).

***Past PTSD and Depression diagnoses.*** The survey asked veterans if

they had been diagnosed by a psychologist or physician with PTSD or depression in the past (*yes/no*).

***Pre-deployment life events.*** Using the Pre-Deployment Life Events scale from the DRRI-2 (Vogt and Smith, 2013), participants were asked if they had ever experienced any of 14 negative events *before* they enlisted in the military. Examples of those events included: "I went through a divorce or was left by a significant other" and "I experienced serious physical or mental health problems." Responses to the measure were summed ($\alpha = 0.75$).

### 3.3. Data analyses

**Qualitative text analysis.** Interview recordings were transcribed verbatim and regularly by the lead researcher and a research assistant for ongoing examination and analysis, guided by Interpretive Phenomenological Analysis (IPA). IPA is a qualitative analysis method that focuses on how participants perceive an experience and seeks to understand the meaning they ascribe to it, in contrast to exploring causes of events or phenomena (Larkin and Thompson, 2011). The lead researcher, who administered all the interviews, conducted all analyses of the transcripts' text. The process began with line-by-line coding focusing on the action words in the sentences (that is, responses that conveyed taking an action, such as "deploying," "fighting," or "training"). Subsequent coding identified key words and applied core and axial categories until salient themes emerged that captured how combat veterans experienced the deaths of comrades in combat and by suicide, and the meaning they ascribed to those deaths. Following completion of all interviews and analysis of all interview transcripts, the lead researcher subsequently examined all the transcripts a second time in order to ascertain intra-rater reliability. In contrast to inter-rater reliability, which examines agreement between different researchers, intra-rater reliability examines within-person agreement to assess how much an individual researcher agrees with his or her own analyses conducted at different points in time. Intra-rater reliability has been used for text analysis (De Wever et al., 2006) and to validate health screening instruments (e.g., Ergai et al., 2016). The themes that emerged from the second analysis were consistent with the themes that emerged from the earlier analysis.

**Quantitative data analysis.** Statistical analyses were conducted with STATA 14.2. For the purpose of parsimony in building multiple regression models, initial bivariate regression analyses were conducted to ascertain which factors were statistically significant predictors of the main outcomes of interest: grief and the grief subscale measuring non-acceptance. Initial multiple regression models included only variables that were statistically significant in the bivariate models. The final multiple regression models included only those variables that were statistically significant in the initial multiple regression models.

In the final regression model in which the level of grief was the outcome, the variables included combat exposure, closeness, anger, and past depression diagnosis. In the model in which the non-acceptance grief subscale was the outcome, the variables included mode of death, closeness to the deceased, anger, and past depression diagnosis.

After the previously described regression analyses indicated that combat exposure was a predictor of grief, and in light of ample research that suggests that combat exposure is also a predictor of PTSS (Lubens and Bruckner, 2018), we elected to conduct additional analyses comparing the strength of the association between combat exposure and grief to the strength of the association between combat exposure and PTSS. Regression analyses were conducted that included the same predictors in two models: one for predictors of grief and one for predictors of PTSS. As with the previous analyses, initial bivariate regressions were conducted for the predictors of PTSS. Only variables that were significantly associated with *both* grief and PTSS were included in the multiple regression models. The predictors used in the two models were combat exposure, closeness, pre-deployment life events, and education. All continuous variables (combat exposure, closeness, and pre-deployment life events) in the multiple regression models were standardized while education, a categorical variable, was not.

## 4. Results

### 4.1. Sample

**Interview participants.** The participants in the qualitative component ($N = 28$) were residents of ten U.S. states. They had a mean age of 33 (ranging from 25 to 42). Most were in the Army (42.9%) or Marines (42.9%). They were ethnically diverse: Hispanic (38.5%), White (30.8%), multi-ethnic or multi-racial (16%), African American (4%), Asian (4%), Native American or Alaskan Native (4%), and Arab (4%). Almost 30% had some college education, and 59.2% had graduated from a university or had a post-university education.

**Survey participants.** Survey respondents were excluded if they indicated that they had no combat exposure ($n = 4$), they did not answer any of the TRIG items ($n = 25$), or they indicated that they had not lost any comrades to combat *or* suicide ($n = 10$). The final number of respondents included in the survey sample was 178.

Survey participants had an average of 2.3 combat deployments and represented most military branches: Army (38.2%), Marines (27.0%), Army National Guard (11.2%), Army Reserves (5.6%), Navy (5.6%), and Air Force (2.8%). Fewer than 2% were in either the Naval Reserves or Marine Reserves, and 7.3% had served in multiple branches. Participants were residents of 35 states. The sample was also ethnically diverse: White (63.2%), Hispanic (14.9%), African American (2.9%), Multi ethnic/racial (8.6%), Asian (5.2%), Native American or Alaska Native (1.7%), and "other" (3.5%). Most were male (89.1%). (As noted earlier, the recruitment message for the survey did not explicitly exclude female veterans. Thus, there *were* female veterans who completed the survey and indicated they had combat exposure.) Participants had a mean age of 36.6 (ranging from 24 to 70) and had enlisted in the military on average at age 20, and 56.6% had graduated from a university or had a post-university education. More than half (58.5%) reported having been diagnosed with PTSD and 43.9% with depression in the past.

Almost 72.5% had lost comrades to both combat and suicide. Nearly 89% had lost at least one comrade in combat; over 83% had lost at least one comrade to suicide; over 69% of those who participated in only the survey had lost comrades to both combat and suicide. Men who participated lost on average a total of ten comrades, and women lost on average more than seven comrades.

### 4.2. Interview results

**Qualitative themes.** Analysis of the interview transcripts revealed seven themes: 1) Suicide death is unexpected and can make acceptance of loss harder; 2) Combat death is expected and can ease acceptance of loss; 3) Combat death is heroic and can make acceptance of loss easier; 4) Brotherhood forged in combat intensifies the emotional response; 5) Guilt over the inability to prevent a comrade's death makes acceptance harder; 6) Attribution of blame for a death creates anger; and 7) Detachment from the civilian world may make it more difficult to cope with comrades' deaths. Each of these themes is described in more detail below (see Fig. 1 for a conceptual model of the themes).

***Suicide death as unexpected.*** Veterans characterized a suicide death as unexpected and more difficult to accept. For example, one participant said that because his entire unit had survived their combat deployment, his comrade's suicide was especially difficult to accept.

> " … a lot of us were hit pretty hard about it, because we come home hundred percent … Some of us were missing a percentage of their body, but we came back all alive … and today we're still left without answers …"

Another veteran said he was so unable to accept that a comrade died

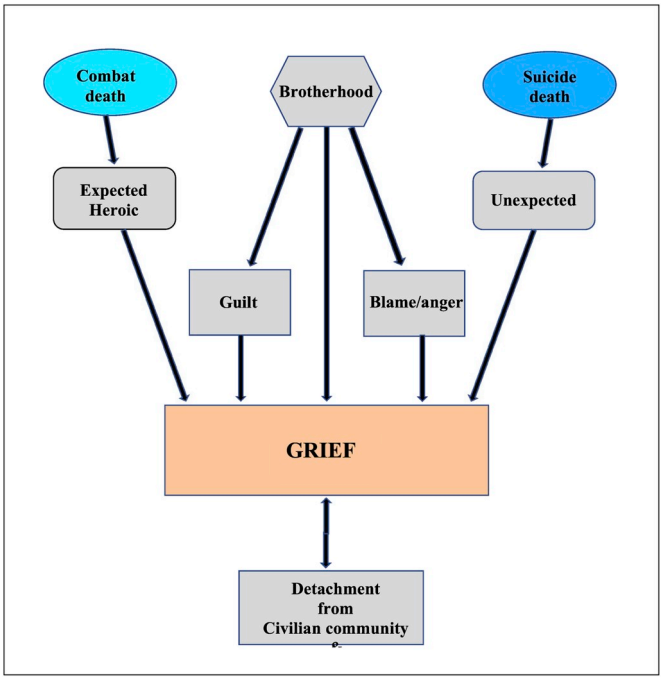


**Fig. 1.** Conceptual model of qualitative themes.

by suicide that he initially tried to investigate it as a homicide.

***Combat death as expected.*** Participants said losing a comrade in combat is expected when serving in war and that preparing for death is part of their training. One veteran, recalling the day a friend died in combat, described his premonition that members of his unit would die during the mission:

> "You're sad about it, but at the same time, it's like we all accept certain losses when we pick a certain lifestyle … we were so trained for it … We were very positive that day. Specifically, that day, going on that road, we were going to get hit …"

***Combat death as heroic.*** Veterans said that defining their comrade's combat death as heroic or meaningful eased their acceptance of his death. One articulated his own pain from losing his friend, while also imagining how his friend might have responded to dying in combat: "… it still hurts yes, but he died doing something he loved. He was one of my best friends … If he was going to go, that's the way he wanted to go …"

Others took comfort in their perception that their comrade had saved other comrades' lives.

***Brotherhood forged in combat.*** Veterans described sharing a common goal to protect the lives of other unit members during combat, which created a brotherhood several likened to a "tribe."

> One veteran who lost several comrades in combat and to suicide said:
>
> "… we all have a common goal … To come back home … you don't let the person that's to your left and right down, because they're depending on you … a bunch of brothers around one another, interact like brothers. That's what the tribe, being in that tribe, is like."

***Guilt over inability to prevent a comrade's death.*** Although acceptance of a comrade's death was based largely on the expected or unexpected nature of the death, guilt over comrades' deaths, whether in combat or by suicide, made the deaths more difficult to accept. In the case of a friend dying in combat, veterans recalled last-minute logistical changes that made the difference between who lived and who died. In other instances, veterans questioned if they had done enough to save a comrade's life.

When discussing a comrade's suicide, some participants described their guilt over not remaining in contact after returning home, or not being supportive enough when their friend reached out. One veteran recalled being unavailable when his friend called and wondered if taking the call could have saved his life:

> "And he wanted, 'Hey you gotta minute? We can talk' …. I'm like 'man I can't right now; let's do lunch sometime this week.' Well, it never happened. I'm in Tajikistan about a month later … His body was found in his house, and I was wracked with guilt … I could have stopped, spoke to him for five minutes …"

This guilt over a comrade's death is consistent with the theme of brotherhood and having a goal of protecting one's comrades' lives.

***Attribution of blame for a death provokes anger.*** When describing both combat and suicide deaths, veterans' attributions of blame provoked anger that they directed at whomever they felt was responsible for their comrades' deaths. In the case of combat deaths, they primarily directed their blame and anger at the enemy forces who took their comrade's life. In the case of suicide, veterans primarily directed blame at their comrade for taking his own life:

> "when my friend was killed in combat I was mad at the Iraqis for putting an IED out there. The terrorists, whatever you want to call them. Uh, then when my friend [name withheld] killed himself, I was mad that he had done that …"

Some veterans also blamed their comrades' combat deaths on military higher-ups who they felt made faulty decisions:

> "… every single person who died down range, died because of mistakes that did not have to happen, because somebody was lazy, or somebody was, you know, egotistical …"

Finally, some veterans also blamed suicide deaths on what they perceived to be inadequate resources at the Department of Veterans Affairs (VA) facilities.

***Detachment from the civilian world.*** The interviews revealed that detachment from the civilian world may make it more difficult to cope with comrades' deaths. Veterans described returning home to communities that they perceived as disengaged from their war experiences or self-image. One veteran cried as he recalled frustration over receiving praise from community members when he returned home, while he speculated that if he had actually performed better, fewer of his comrades would have died in combat:

> "… it's like, everybody telling me, I did a good job when you don't know what the hell I was doing … when you have no clue what I was doing or if I did a good job … How come, everybody else didn't get home … Yeah, it was like, shit, how was that a good job? That was like 14 of my guys."

### 4.3. Survey results

***Combat exposure and loss.*** The combat exposure scores ranged from 1 to 41. The higher participants scored on the combat exposure measure, the more comrades they had lost on average in combat. Those who scored from 1 to 14 ($n$ = 29) had lost an average of almost three comrades in combat, those who scored from 15 to 28 ($n$ = 99) had lost an average of six comrades in combat, and those who scored greater than 28 ($n$ = 44) had lost an average of 12 comrades in combat.

***Predictors of grief and non-acceptance of loss.*** The mean level of grief for all study participants was 32.15 ($SD$ = 12.02), ranging from 12 to 60 (out of a possible maximum of 60). Although we hypothesized that the mode of death and unit cohesion would predict the total level of grief, our results did not support this hypothesis. The total level of grief was predicted by greater combat exposure, greater closeness with the comrade who died, and higher anger, controlling for a prior diagnosis of depression (see Table 1). Although neither the mode of death or

**Table 1**
Predictors of grief.[a]

| Variable | Model 1 ($n$ = 173) | | | Model 2 ($n$ = 169) | | |
|---|---|---|---|---|---|---|
| | β (95% *CI*) | *SE* | *t* | β (95% *CI*) | *SE* | *t* |
| Combat exposure | 0.13 (0.01, 0.25)* | 0.06 | 2.10 | 0.12 (0.00, 0.24)* | 0.07 | 2.04 |
| Closeness with deceased | 0.36 (0.24, 0.48)*** | 0.06 | 6.01 | 0.34 (0.22, 0.45)*** | 0.06 | 5.76 |
| Anger | 0.41 (0.30, 0.53)*** | 0.06 | 7.01 | 0.33 (0.21, 0.48)*** | 0.06 | 5.46 |
| Past depression diagnosis[b] | | | | 0.45 (0.22, 0.68)*** | 0.12 | 3.86 |

*Note.* Sample sizes vary because of missing data. The following variables were tested for inclusion in the models: combat exposure, mode of death, anger, total comrades lost, closeness to the deceased, pre-deployment life events, unit cohesion, current social support or relationships (with partner, family, friends, or other veterans), and demographics (i.e., gender, age, race/ethnicity, education, and income). Variables not listed in the tables were not significant ($p > .05$) and were removed from the final model.
*$p < .05$, **$p < .01$, ***$p < .001$.
[a] Coefficients for continuous variables (combat exposure, closeness, anger) are standardized; coefficient for past depression diagnosis is not.
[b] Past depression diagnosis coded 0 = No, 1 = Yes.

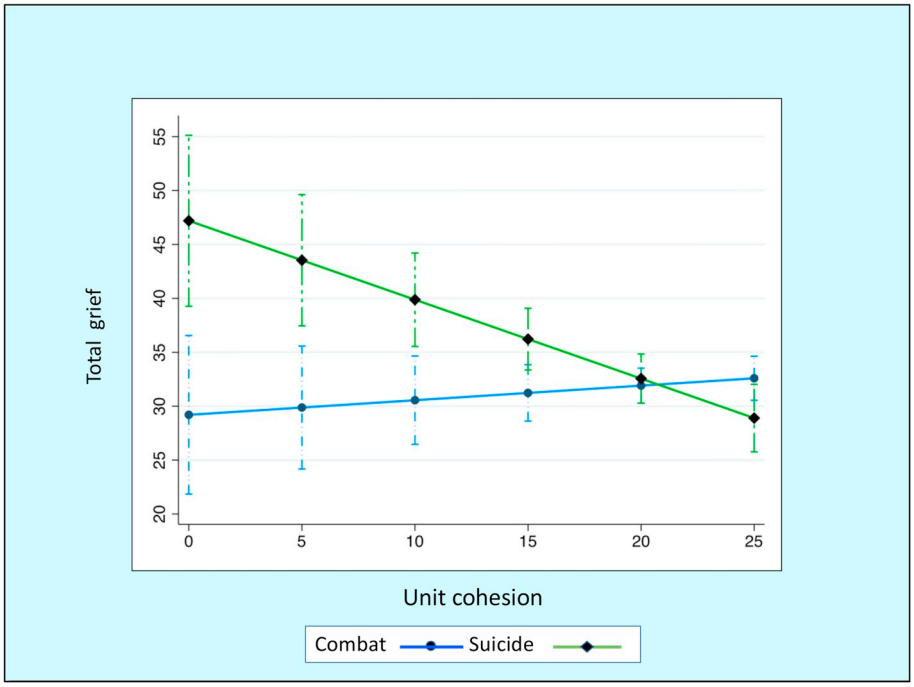


**Fig. 2.** Mode of death moderates the association between unit cohesion and grief ($n$ = 171)[1,2].
[1] $p < .01$.
[2] Covariates: Combat exposure ($p < .01$), closeness ($p < .001$), and anger ($p < .001$).

unit cohesion were significantly associated with the level of grief, the mode of death moderated the association between unit cohesion and level of grief at lower levels of unit cohesion. When losing a comrade in combat, unit cohesion was positively associated with the level of grief. In contrast, when losing a friend to suicide, unit cohesion was negatively associated with the level of grief (see Fig. 2).

Non-acceptance of loss was predicted by the mode of death, greater closeness with the comrade who died, and anger, controlling for a past depression diagnosis. Increased non-acceptance of a death was associated with having lost a comrade to suicide, having greater anger, and having been diagnosed with depression in the past (see Table 2).

***Comparing combat exposure as a predictor of grief and PTSS.*** The multiple regression analyses comparing the strength of combat exposure's association with grief to the strength of its association with PTSS suggested that the strength of the association between combat exposure and grief was nearly equal to the strength of the association between combat exposure and PTSS, controlling for how close a veteran reported being to the deceased, pre-deployment life events, and level of education. All control variables were significant (see Table 3). Although combat exposure was a similarly strong predictor of both grief and PTSS, closeness to the deceased was the strongest predictor of grief, while pre-deployment life events and combat exposure were the strongest predictors of PTSS.

### 4.4. Mixed methods message

The results of the two components of this study tell a complex story about how combat veterans respond to the loss of their comrades and what factors predict their level of grief. The qualitative themes suggest that veterans experience suicide and combat deaths differently, characterizing combat deaths as expected and thus easier to accept, while regarding suicide deaths as unexpected and more difficult to accept. The quantitative analyses supported the qualitative themes, suggesting that the level of acceptance differed by mode of death, with suicide deaths being associated with a higher level of non-acceptance. Moreover, the qualitative results suggest that the role of "brotherhood" influences how intensely a loss is felt, while survey results suggested that unit cohesion (similar to the bonds of brotherhood) predicted different grief responses to the two modes of death.

**Table 2**
Predictors of non-acceptance of loss.[a]

| Variable | Model 1 ($n$ = 170) | | | Model 2 ($n$ = 166) | | |
|---|---|---|---|---|---|---|
| | β (95% *CI*) | *SE* | *t* | β (95% *CI*) | *SE* | *t* |
| Suicide mode of death[b] | 0.43 (0.15, 0.70)** | 0.14 | 3.07 | 0.39 (0.11, 0.66)** | 0.14 | 2.78 |
| Closeness with deceased | 0.21 (0.08, 0.35)** | 0.07 | 3.17 | 0.19 (0.06, 0.32)** | 0.07 | 2.82 |
| Anger | 0.41 (0.28, 0.54)*** | 0.07 | 6.21 | 0.34 (0.20, 0.47)*** | 0.07 | 4.80 |
| Past depression diagnosis[c] | | | | 0.34 (0.08, 0.62)* | 0.10 | 2.46 |

*Note.* Sample sizes vary because of missing data. The following variables were tested for inclusion in the models: combat exposure, mode of death, anger, total comrades lost, closeness to the deceased, pre-deployment life events, unit cohesion, current social support or relationships (with partner, family, friends, or other veterans), and demographics (i.e., gender, age, race/ethnicity, education, and income). Variables not listed in the tables were not significant ($p > .05$) and were removed from the final model.
*$p < .05$, **$p < .01$, ***$p < .001$.
[a] Coefficients for continuous variables (closeness and anger) are standardized; coefficient for mode of death and past depression diagnosis is not.
[b] Mode of death coded 0 = Combat, 1 = Suicide.
[c] Past depression diagnosis coded 0 = No, 1 = Yes.

## 5. Discussion

The interviews and survey results tell a different story than grief research in the civilian community, which has classified both violent and suicide deaths as unexpected (Bailley et al., 1999). Our finding that the mode of death moderated the association between unit cohesion and grief (Fig. 2) was complemented by the qualitative theme describing the depth of bonding, the "brotherhood" forged in combat–a form of unit cohesion in the case of the all-male participants in our study's qualitative component. Additionally, the two components of the study intersected: the qualitative themes told a narrative of blame and anger, while the survey results found anger to be a significant predictor of the level of grief.

Importantly, our results are salient in the context of grief and suicide research. Studies have linked grief to suicidal ideation (Prigerson et al., 1999; Stroebe et al., 2005) and have found that suicide exposure is also a risk for a number of mental health difficulties among veterans, including depression, anxiety, and suicidal ideation (Cerel et al., 2015). In light of the fact that the majority of participants in the 2017 Iraq and Afghanistan Veterans of America survey knew a veteran who had died by suicide or had attempted suicide (IAVA, 2017), grief over loss of comrades may be contributing to the increased rate of veterans' suicides. In addition, although combat exposure is a well-studied risk factor for PTSS (Lubens and Bruckner, 2018; Xue et al., 2015), our finding that combat exposure is an equally strong risk factor for grief suggests that the research and clinical focus on mental health outcomes in combat veterans, with scant attention paid to grief over loss of comrades, represents a significant oversight as scholars and clinicians seek to understand and heal the wounds of war.

### 5.1. The value of the mixed methods design

The two components of this study sought to achieve a holistic understanding of grief in combat veterans in a way that neither component could have exhibited alone. While the qualitative interviews suggested that combat deaths are easier to accept than suicide deaths because dying in combat is perceived to be expected and can be regarded as heroic or meaningful, the survey allowed for empirical measurements that quantified the association between the mode of death and its acceptance. Similarly, although the analysis of survey results found that anger was a predictor of grief, without the voices of the veterans describing the blame that provokes their anger, we would have been left with only partial elements of the story.

In addition, it is unlikely that the interviews alone would have revealed the finding that combat exposure may be an equally strong risk for grief as it is for PTSS. Even if veterans who had been diagnosed with combat-related PTSD had perceived that it was really grief from which they were suffering, rather than or in addition to PTSD, it would have been pure speculation in the absence of an empirical assessment. The topic of combat exposure as a risk for grief never arose in any of the interviews. This lack of discussion is likely because there has been little, if any, research exploring combat exposure's association with grief. Thus, it is not part of the public discourse or clinical approaches.

### 5.2. Strengths and limitations

In addition to being the first study of which we are aware to focus on suicide loss and combat loss in veterans and to examine whether the mode of death is associated with grief in combat veterans, the strength of this study was its geographic diversity, with veterans from more than

**Table 3**
Comparison of the strength of association of combat exposure with grief and PTSS (n = 171).[a,b]

| Variable | Grief | | | PTSS | | |
|---|---|---|---|---|---|---|
| | β (95% *CI*) | *SE* | *t* | β (95% *CI*) | *SE* | *t* |
| Combat exposure | 0.21 (0.08, 0.34)** | 0.06 | 3.16 | 0.26 (0.11, 0.41)*** | 0.07 | 3.59 |
| Closeness with deceased | 0.44 (0.33, 0.59)*** | 0.07 | 6.68 | 0.22 (0.07, 0.37)** | 0.07 | 2.99 |
| Pre-deployment life events | 0.19 (0.24, 0.28)** | 0.06 | 3.10 | 0.27 (0.13, 0.41)*** | 0.07 | 4.15 |
| Education[c] | −0.15 (−0.25, −0.18)* | 0.06 | −2.51 | −0.23 (−0.36, −0.10)** | 0.07 | −3.46 |

*$p < .05$, **$p < .01$, ***$p < .001$.
[a] Coefficients for continuous variables (combat exposure, closeness) are standardized; coefficients for education are not.
[b] PTSS = posttraumatic stress symptoms.
[c] Reference group is less than a high school diploma.

30 U.S. states participating in the survey. In addition, despite the use of snowball and convenience sampling, the ethnic and racial composition of the survey sample was very similar to the ethnic and racial composition of the post-9/11 U.S. veteran population.

The limitation of the qualitative component of the study is the possibility that veterans willing to participate in interviews and tell their stories of loss and grief are not representative of U.S. combat veterans. As noted earlier, some veterans described what they perceived to be civilian disinterest in their war experiences and how they had conditioned themselves to stay silent. Thus, those who were willing to participate in interviews may be among the minority of veterans willing to break that silence.

The quantitative component's primary limitations were the relatively small sample size and the recruitment strategy. Recruitment through social media and through veteran's services offices on college campuses limits the study population to those who visit IAVA chapter Facebook pages, or who are college students who access campus veterans' service offices. Thus, this was a convenience sample, recruited through multiple methods, but might not be representative of combat veterans as a whole. Moreover, lack of data about how many veterans received the recruitment messages prevented a more precise calculation of a participation rate. In addition, although the percentage of females in this study sample of 12.7% is larger than the 9.4% that the Department of Veterans Affairs reports as the percentage of female veterans in 2015 (National Center for Veterans Analysis and Statistics, 2018), we do not know the representativeness of the females who participated. Finally, a comparison of our two methods may be biased by the fact that although all qualitative participants had lost comrades to both combat and suicide, only two-thirds of the survey participants had lost comrades to both modes of death. This disparity in the two samples should be addressed in future research.

Lastly, although veterans were asked to report if a psychologist or physician had ever diagnosed them with PTSD or depression, we do not have any additional details about their history of treatment for either disorder. Additional details about treatment would allow for a finer analysis of the association of PTSD and depression with grief, and could elucidate if treatment history or treatment status might mediate the association. In addition, studies of Iraq and Afghanistan veterans have found the rate of PTSD to range from 14% (Tanielian and Jaycox, 2008) to 24% (Fulton et al., 2015), and the rate of depression to range from 5.7% for men and 15.7% for women (Wells et al., 2010). Given that 57.4% of our study participants reported having been previously diagnosed with PTSD and 43.3% reported having been previously diagnosed with depression, our sample's mental health history may not be representative of OEF/OIF veterans.

## 6. Conclusions

Grief in veterans appears to have been largely overlooked by researchers studying the aftermath of war (Lubens and Silver, 2019). Our study tells an important story about veteran grief in light of research that has found deleterious prolonged mental and physical health effects of grief (e.g., Hibberd et al., 2010; Prigerson et al., 1997; Stroebe et al., 2007; Toblin et al., 2012). Results of the few studies that have explored grief in Vietnam-era combat veterans — conducted decades after they lost comrades in combat (e.g., Currier and Holland, 2012; Pivar and Field, 2004) — suggested that prolonged grief adversely affected family relationships and mental health, and that combat losses were more likely predictors of grief than depressive symptoms or stress responses to traumatic events (Currier and Holland, 2012). Our study's results serve as a clarion call for further attention to be paid to grief in the current generation of veterans.

The toll of serving in combat is extensive and bringing troops home from war is only the first stage of a long, arduous struggle to recover. Research focusing on the health of OEF/OIF veterans since the onset of the wars in Afghanistan and Iraq has quantified the adverse mental (Hoge et al., 2004; Luxton et al., 2010), behavioral (Gallaway et al., 2012; Skipper et al., 2014), and physical (Bagnell et al., 2013; Granado et al., 2009) outcomes. Despite such research, scholars have clearly overlooked grief as another consequence of serving in war. This study begins to fill that research chasm.

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