Lower intimate relationship satisfaction among partnered female service members/veterans is associated with the presence of suicidal ideation

Rebecca K. Blais

Department of Psychology, Utah State University, Logan, Utah

Correspondence
Rebecca K. Blais, Utah State University, 2810 Old Main SCCE 422, Logan, UT 84322.
Email: rebecca.blais@usu.edu

Funding information
Society for Military Psychology (Division 19), American Psychological Association

Abstract
Objectives: Risk for suicide among female service members/veterans (SM/Vs) is increasing, suggesting a need for additional studies of risk factors in this population. This study examined relationship satisfaction as a correlate of suicidal ideation (SI) after accounting for established risk factors for SI.

Method: Partnered female SM/Vs (N = 818) completed a demographic inventory and measures of SI, relationship satisfaction, sexual function, posttraumatic stress disorder (PTSD), and depression.

Results: After accounting for covariates, lower relationship satisfaction, higher depression and PTSD severity, and minority race were associated with the presence of SI. PTSD and depression severity did not moderate this association, suggesting that regardless of mental health symptoms, relationship satisfaction is associated with increased SI risk.

Conclusions: Screening for relationship satisfaction may identify SI risk in partnered female SM/Vs. Future studies should explore relationship satisfaction as a risk factor for suicidal attempts as not all SM/Vs who experience SI will attempt suicide.

Keywords
depression, females, PTSD, relationship satisfaction, suicidal ideation
1 | INTRODUCTION

Suicide is one of the leading causes of death in service members and veterans (Shively, 2010). Suicide risk in veterans increased by nearly 26% from 2005 to 2016 (U.S. Department of Veterans Affairs, 2016a), and increased in active duty service members in most military branches from 2017 to 2018 (Defense Suicide Prevention Office, 2018). Suicide among female service members/veterans (SM/Vs) is of paramount concern given their suicide risk and the rate of suicide is almost two times higher than their civilian counterparts (McFarland, Kaplan, & Huguet, 2010; U.S. Department of Veterans Affairs, 2016b). Indeed, suicide among female SM/Vs was called “a hidden epidemic” (McFarland et al., 2010). Not surprisingly, a better understanding of suicide risk in this population is identified as a VA “top clinical priority” in 2019 (U.S. Department of Veterans Affairs, 2019a). Examining correlates of suicidal ideation is one way to increase knowledge of factors associated with suicide risk. The information gained from this line of inquiry can develop or augment existing interventions aimed at reducing suicide risk.

Positive relationship satisfaction can buffer against suicidal ideation by providing key support to cope with stress and also increase a sense of inclusiveness and meaning (Cohen, 2004; LaCroix et al., 2018). Unfortunately, poor interpersonal functioning is considered a key risk factor for suicide (e.g., see review, Chu et al., 2017; Joiner, 2005; Till, Tran, & Niederkrotenthaler, 2017). Among SM/Vs, interpersonal risk factors for suicidal ideation and attempts include lower intimate relationship satisfaction (Blow, Farero, Ganoczy, Walters, & Valenstein, 2018; LaCroix et al., 2018; Langhinrichsen-Rohling, Snarr, Slep, Heyman, & Foran, 2011), interpersonal distress with loved ones (Griffith, 2012), relationship failures (Bush et al., 2013), and lower sexual function (Blais, Monteith, & Kugler, 2018). Recent research further suggests that risk for suicidal ideation and attempt may be particularly heightened among SM/Vs reporting a combination of lower relationship satisfaction and higher posttraumatic stress disorder (PTSD) and depression severity (Blow et al., 2018). Interestingly, very little of this extant research has examined interpersonal correlates of suicidal ideation among female SM/Vs. With the exception of Blais et al. (2018), existing research has exclusively or almost exclusively focused on males. That said, Langhinrichsen-Rohling et al. (2011) examined the impact of relationship satisfaction as a risk factor for suicide and found that lower relationship satisfaction was associated with higher suicide risk in both men and women.

Better understanding the association of relationship satisfaction and suicidal ideation among females is critical given that females represent one of the fastest growing demographic groups in the military and almost half are married (Patten & Parker, 2011). Moreover, socialization among females emphasizes the importance of strong interpersonal functioning (Levant, Richmond, Cook, House, & Auport, 2007), and research suggests that in times of distress, females may “tend-and-befriend” rather than isolate (Taylor et al., 2000). Thus, in times of stress, females may feel particularly inclined to turn to their partners for support, but an increase in intimate relationship satisfaction may exacerbate stress, feelings of loneliness, and deter turning towards their partner. Finally, extant literature examining interventions to improve intimate relationship satisfaction are primarily based on samples composed of male SM/Vs and their female partners (see review, Kugler, Andresen, Bean, & Blais, 2019), thereby resulting in a gap in our knowledge about how such factors may function in females and ultimately relate to suicide risk. Further exploring this association in females could inform the development or augmentation of screening and interventions as well as determine whether sex-specific interventions are needed.

The primary aim of the current study was to build on existing literature by examining relationship satisfaction as a correlate of suicidal ideation after accounting for established risk factors of suicide in a sample of partnered female SM/Vs. Furthermore, given previous research showing that depression and PTSD severity moderated the association of relationship satisfaction and suicide risk (i.e., Blow et al., 2018), an exploratory aim was to examine whether PTSD or depression severity moderated this association. It was hypothesized that lower intimate relationship satisfaction would be associated with higher suicide risk. Given the exploratory nature of the moderation analysis, no a priori hypotheses were developed.
METHODS

2.1 | Participants

Data utilized in the present investigation were extracted from a larger data set (N = 833) that was collected to understand the associations of military sexual trauma, sexual health, and relationship satisfaction among partnered SM/Vs (Blais, 2019). To be included in the current study, participants needed to identify as married or partnered but not married at the time of the study. The final sample included 818 (98.20%) participants.

2.2 | Procedure

Participants were recruited via listservs and social media using Institutional Review Board (IRB)-approved fliers. Those interested in participating advanced to the study protocol, which was administered through Qualtrics (2019; Provo, UT), an online platform for survey administration. Screening items confirming female sex, service in the military, and appropriate consenting age (age 18 or greater) were administered and those meeting eligibility criteria were presented with a Letter of Information and all study measures. No identifying information was collected but those wishing to receive $15 compensation navigated to a separate page to enter their names and mailing addresses. The Utah State University IRB approved the parent study from which these data are drawn.

2.3 | Measures

2.3.1 | Demographics

A demographic inventory assessed age, marital status (married, partnered but not married, and other), race/ethnicity (White vs. other), branch of service (Army vs. other), income, education, and discharge status (discharged vs. currently serving). As most of the sample reported Army service and White race (see Table 1), these categories were selected as index terms for these characteristics. Additional race/ethnicity and military service information is available upon request to the first author.

2.3.2 | Outcome

Suicidal ideation was measured using Item 9 of the Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002). Item 9 asks: “During the past 2 weeks, how often have you been bothered by thoughts that you would be better off dead or hurting yourself in some way?” Participants indicated their experience using a scale of 0 (not at all) to 3 (nearly every day). Extant suicide research using PHQ-9 Item 9 shows that this item adequately predicts increased risk for suicide in veteran samples (Louzon, Bossarte, McCarthy, & Katz, 2016).

2.3.3 | Independent variable

The Couples Satisfaction Index-4 (CSI-4; Funk & Rogge, 2007), a 4-item measure assessing overall relationship satisfaction, was used to measure relationship satisfaction. A sample item includes “Please indicate the degree of happiness, all things considered, of your relationship.” Items are scored using a Likert scale that ranges from 0 to 5 or 0 to 6. The items have different anchors. Items are then summed for a total score that ranges from 0 to 21. Higher scores
indicate greater relationship satisfaction. Scores < 13.5 are indicative of distressed relationships (Funk & Rogge, 2007). Psychometric properties in the norm sample demonstrated adequate convergent validity with other measures of relationship satisfaction (Funk & Rogge, 2007). Cronbach’s α in the current sample was adequate (Cronbach’s α = .93).

### 2.3.4 | Moderators

Moderators included depression and PTSD severity given previous research in military SM/Vs showing these to be moderators of the association of relationship satisfaction with suicide risk (Blow et al., 2018). The PHQ-8 (Kroenke et al., 2009), an 8-item inventory that assesses the severity of depressive symptoms over the past 2 weeks, was used to measure depression severity. A sample item includes: “Over the last 2 weeks, how often have you been bothered by any of the following problems? Feeling tired or having little energy.” Items are rated using an ordinal scale ranging from 0 (not at all) to 3 (nearly every day) and summed for a total score that ranges from 0 to 24. Higher scores indicate higher depression severity. The current sample showed adequate internal reliability (Cronbach’s α = .93).

The Posttraumatic Stress Disorders Checklist for DSM-5 (PCL-5; Weathers et al., 2013), a 20-item inventory assessing how bothered participants were by each PTSD symptom during the past month, was used. A sample item includes “In the past month, how much were you bothered by avoiding memories, thoughts, or feelings related to the stressful experience?” Participants rated their agreement with each item using a 5-point Likert scale of 0 (not at all) to 4 (extremely). Items are summed for a total score, which ranges from 0 to 80. Higher scores indicate greater PTSD symptom severity. The PCL-5 shows good reliability and validity to detect PTSD and quantify PTSD symptoms (Weathers et al., 2013). The current sample showed adequate internal reliability (Cronbach’s α = .97).

### 2.3.5 | Covariates

The Female Sexual Function Index (FSFI; Rosen et al., 2000), a 19-item self-report questionnaire that assesses overall sexual function, was used to measure sexual function. The FSFI was included as a covariate given previous research showing that higher sexual dysfunction is associated with increased risk for suicidal ideation (Blais et al., 2018). A sample item includes “Over the past 4 weeks, how often did you feel sexually aroused (“turned on”) during sexual activity or intercourse?” Each item is rated using a variable anchor Likert scale. Items are summed by applying a scoring algorithm developed by the scale authors. Total scores range from 2 to 36. Higher scores indicate greater sexual function. Psychometric properties from the norm sample indicate good internal consistency, test–retest reliability, and adequate construct and divergent validity (Rosen et al., 2000). The current sample showed excellent internal reliability (Cronbach’s α = .97).

Demographic characteristics of Army service, race, and age were also included as covariates given previous research that demonstrates these variables are significantly associated with suicidal ideation (Defense Suicide Prevention Office, 2018). These data were collected using the demographic inventory described above.

### 2.4 | Data analysis

The sample characteristics for demographic and study variables were calculated using descriptive statistics. Bivariate tests were used to examine the associations of suicidal ideation with relationship satisfaction, depression, and PTSD, as well as covariates. Suicidal ideation was regressed on relationship satisfaction, PTSD, and depression, as well as covariates using ordinal regression. Ordinal regression was selected as the PHQ-9 Item 9 assesses the presence of suicidal ideation using an ordinal scale. To assess whether PTSD and depression moderated the association of relationship satisfaction and suicidal ideation, ordinal regression
with interactions were used (Aiken, West, & Reno, 1991). To create interaction terms, relationship satisfaction, PTSD, and depression were first centered and then multiplied (e.g., centered score of relationship satisfaction \( \times \) centered score of depression comprised the interaction term for relationship satisfaction and depression). The centered variables and their interaction, as well as covariates, were entered into the regression as predictors. Moderations of PTSD and depression were examined separately. For ease of interpretation, all linear variables were standardized in bivariate and adjusted tests. Missing data were handled using full information maximum likelihood, which is favored to other procedures given that it utilizes all data available to maximize power and reduce parameter estimate biases (Enders, 2010). Analyses were conducted in MPlus.

3 | RESULTS

The majority of the sample reported no suicidal ideation \((n = 519, 78.16\%)\), while 74 (11.14\%), 39 (5.87\%), and 32 (4.82\%) reported being bothered by suicidal ideation some days, more than half the days, and nearly every day over the past 2 weeks, respectively. Nineteen percent \((n = 154)\) of the sample did not complete the measure of suicidal ideation. The majority of the sample identified as White, married, and reported service in the Army (see Table 1). Means and standard deviations for age, relationship satisfaction, PTSD severity, and depression severity can be found in Table 1. As shown in Table 1, the average score on the CSI-4 was slightly above the threshold for distressed relationships. At the bivariate level (Table 1), those who reported lower relationship satisfaction and sexual function, and higher PTSD and depression severity were more likely to report the presence of suicidal ideation. Those who reported non-White race were also more likely to report suicidal ideation. Marital status, service in the Army, and age were unrelated to suicidal ideation.

The regression of suicidal ideation on relationship satisfaction, PTSD, depression, and covariates accounted for 46% of the variance. Lower relationship satisfaction and higher depression and PTSD severity were associated with the presence of suicidal ideation. Non-White race was also associated with the presence of suicidal ideation. No other variables were significantly associated with suicidal ideation (see Table 1).

### Table 1: Demographics, bivariate associations, and regressions of suicidal ideation on relationship satisfaction, PTSD, and depression severity, as well as covariates

<table>
<thead>
<tr>
<th></th>
<th>N (%)/M (SD)</th>
<th>Unadjusted estimate (SE)</th>
<th>Adjusted estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship satisfaction</td>
<td>14.42 (5.01)</td>
<td>(-0.35 (0.04))***</td>
<td>(-0.13 (0.04))**</td>
</tr>
<tr>
<td>PTSD severity</td>
<td>24.62 (23.22)</td>
<td>0.51 (0.04)***</td>
<td>0.11 (0.05)*</td>
</tr>
<tr>
<td>Depression severity</td>
<td>9.66 (7.24)</td>
<td>0.65 (0.03)***</td>
<td>0.52 (0.05)***</td>
</tr>
<tr>
<td>Sexual function</td>
<td>21.98 (9.92)</td>
<td>(-0.29 (0.04))**</td>
<td>0.00 (0.05)</td>
</tr>
<tr>
<td>Married (^1) (1 = yes; 0 = no)</td>
<td>494 (77.40%)</td>
<td>(-0.01 (0.05))</td>
<td>(-0.04 (0.04))</td>
</tr>
<tr>
<td>Age</td>
<td>32.17 (7.35)</td>
<td>(-0.02 (0.09))</td>
<td>(-0.01 (0.04))</td>
</tr>
<tr>
<td>Army service (1 = yes; 0 = no)</td>
<td>355 (53.70%)</td>
<td>(-0.05 (0.05))</td>
<td>(-0.04 (0.04))</td>
</tr>
<tr>
<td>White race (1 = yes; 0 = no)</td>
<td>519 (78.20%)</td>
<td>(-0.12 (0.05))**</td>
<td>(-0.08 (0.04))*</td>
</tr>
</tbody>
</table>

\( R^2 \) .46 ***

Abbreviations: PTSD, posttraumatic stress disorder; SD, standard deviation; SE, standard error.

\(^1\)0 = partnered but not married.

* ≤ .05.

** ≤ .01.

*** ≤ .001.
3.1 | Moderation by PTSD and depression severity

The regression of suicidal ideation on relationship satisfaction, PTSD, their interaction, depression and covariates accounted for 46% of the variance, but the interaction of PTSD and relationship satisfaction was nonsignificant. The nonsignificant interaction indicates that PTSD did not moderate the association of relationship satisfaction and the presence of suicidal ideation.

The regression of suicidal ideation on relationship satisfaction, depression, their interaction, PTSD, and covariates accounted for 47% of the variance, but the interaction of relationship satisfaction and depression was nonsignificant. The nonsignificant interaction indicates that depression did not moderate the association of relationship satisfaction and the presence of suicidal ideation.

4 | DISCUSSION

The purpose of the current study was to examine whether lower intimate relationship satisfaction was associated with the presence of suicidal ideation after accounting for mental health symptoms and demographics in a sample of female SM/Vs. This study further examined whether a combination of lower relationship satisfaction and higher PTSD and depression severity increased risk for suicidal ideation. Findings revealed that lower intimate relationship satisfaction was associated with the presence of suicidal ideation above and beyond the effects of PTSD, depression, and covariates. These findings are consistent with leading theories that highlight the contribution of interpersonal distress on suicide risk (e.g., Joiner, 2005), and previous findings showing that interpersonal distress can elevate suicide risk (Blais et al., 2018; Blow et al., 2018; Bush et al., 2013; Griffith, 2012). Higher depression and PTSD severity were also associated with the presence of suicidal ideation, which is consistent with previous research in military samples (Elbogen et al., 2018; Langhinrichsen-Rohling et al., 2011; U.S. Department of Veterans Affairs, 2019b). However, and contrary to previous research (Blow et al., 2018), higher PTSD and depression severity did not moderate the association of relationship satisfaction and the presence of suicidal ideation. This latter finding suggests that regardless of the level of psychological distress, partnered female SM/Vs experiencing lower intimate relationship satisfaction are at heightened risk for suicide.

Screening for intimate relationship satisfaction among partnered female SM/Vs may help identify those at risk for suicidal ideation. The measure used in the current study to assess relationship satisfaction, the CSI-4 (Funk & Rogge, 2007), is well-validated and brief and may be an optimal tool to quickly and efficiently assess relationship satisfaction. The brevity of this measure should not add burden to clinicians providing care to these individuals, who may already be mandated to screen for numerous other conditions in a single visit (e.g., PTSD, depression, and homelessness). From an intervention perspective, addressing intimate relationship concerns within the context of suicide risk reduction strategies may be critical. Moreover, couples’ therapy interventions are well-suited to increase relationship satisfaction and therefore may reduce suicide risk. That said, studies of couples’ therapy interventions as a tool to mitigate suicide risk are greatly needed.

Consistent with previous research (Elbogen et al., 2018; Langhinrichsen-Rohling et al., 2011), higher depression and PTSD severity were associated with the presence of suicidal ideation. Such findings highlight the centrality of the individual, relative to interpersonal, risk factors for suicide. In combination with the observation that lower relationship satisfaction was associated with the presence of suicidal ideation in the current study, interventions that focus on bolstering both individual and interpersonal resources in times of stress may be most effective in reducing suicide risk. Also, non-White race was associated with the presence of suicidal ideation. This is consistent with research from the Defense Suicide Prevention Office (2018), which indicates the risk for suicide is increasing among non-White service members.

Our findings contradicted the findings from Blow et al. (2018), who observed that higher PTSD and depression severity, coupled with lower intimate relationship satisfaction, increased risk for suicide. It is
possible that the association of relationship satisfaction with suicidal ideation differs by gender. Indeed, Blow’s sample was predominantly male and the current sample was composed solely of women. Findings from the current study highlight the salience of positive relationship function among women regardless of accompanying psychological distress. That is, the association between their relationship satisfaction and risk for suicide is not dependent upon the level of psychological distress, but rather, relationship satisfaction is a unique contributor to their suicide risk.

Findings from the current study also deviated from previous findings showing that lower sexual function was associated with suicidal ideation (Blais et al., 2018). In the current study, lower sexual function was associated with suicidal ideation at the bivariate level but not in adjusted models. It appears that the variance explained by sexual function in previous research examining suicidal ideation may have been accounted for by relationship satisfaction and psychological distress in the current study. Indeed, lower sexual function is associated with poorer relationship satisfaction in female SM/Vs (Blais, 2019).

The current study is not without limitations. The study design was cross-sectional so causal conclusions about the direction of these associations cannot be made with confidence. It is possible, for example, that the presence of suicidal ideation erodes relationship satisfaction. Data were also based on a convenience sample of partnered female SM/Vs who were recruited via social media. Such findings may not generalize to those who do not use social media. Our study was also limited to suicidal ideation using a single-item measure. Though this measure does have adequate predictive validity in veteran samples (e.g., Louzon et al., 2016), other studies have found its predictive utility to be limited (e.g., Na et al., 2018). Future studies in this area could strengthen this line of inquiry by using measures that assess ideation using additional items and examining plans and attempts. Finally, relationship satisfaction was assessed using a 4-item measure. Though this measure has good reliability and validity (Funk & Rogge, 2007), future studies may consider alternate measures that assess different domains of relationship satisfaction (e.g., depth and quality).

Notwithstanding, such findings have important implications for screening, assessment, and treatment. That is, screening for relationship satisfaction among partnered female SM/Vs may help identify those at risk for suicide. Individual and interpersonal therapy may be particularly helpful in reducing suicide risk in this population.

ACKNOWLEDGMENT
Funding for this study was provided by American Psychological Association's Division 19 (Society for Military Psychology). The funders were not involved in study execution.

CONFLICT OF INTERESTS
The author declares that there are no conflicts of interest.

ORCID
Rebecca K. Blais http://orcid.org/0000-0002-2483-1576

REFERENCES


How to cite this article: Blais RK. Lower intimate relationship satisfaction among partnered female service members/veterans is associated with the presence of suicidal ideation. J. Clin. Psychol. 2020;76:1353–1361. https://doi.org/10.1002/jclp.22939