

Higher anhedonia and dysphoric arousal relate to lower relationship satisfaction among trauma-exposed female service members/veterans

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Abstract

Objective: Posttraumatic stress disorder (PTSD) symptoms of detachment, anhedonia, and hyperarousal are associated with poorer relationship satisfaction. Such findings are limited to earlier models of PTSD and samples that were almost exclusively male. The association of current PTSD symptom clusters with relationship satisfaction in partnered female service members/veterans (SM/Vs) are understudied.

Methods: This study examined the association of PTSD (PTSD Checklist-5 [PCL-5]) symptom clusters identified in the anhedonia model and relationship satisfaction (Couples' Satisfaction Index-4) in 477 partnered female SM/Vs.

Results: Higher anhedonia and dysphoric arousal were associated with lower relationship satisfaction. Among those who scored 31+ on the PCL-5 ($n = 255$, 53.46%), which is a suggested cutoff for a probable PTSD diagnosis, only higher anhedonia was associated with poorer relationship satisfaction.

Conclusions: The association of PTSD symptom clusters with relationship satisfaction are similar for male and female SM/Vs. Interventions to improve relationship satisfaction may focus on reducing anhedonia and dysphoric arousal.

KEYWORDS

females, military, PTSD, relationship satisfaction, trauma

1 | INTRODUCTION

Posttraumatic stress disorder (PTSD) is a disorder that may be diagnosed following exposure to a Criterion A trauma, which is defined as direct or indirect exposure to death, serious injury, or sexual violence (American Psychiatric Association, 2013). To meet criteria for PTSD, the Diagnostic and Statistical Manual for Mental Disorders, 5th edition (DSM-5; American Psychiatric Association, 2013) specifies that a trauma-exposed individual may be diagnosed if they experience symptoms within the clusters of (a) intrusions, (b) avoidance, (c) negative alterations in cognitions and mood (NACM), and (d) alterations in arousal and reactivity for a period of at least month following the trauma exposure. PTSD is one of the most frequently diagnosed mental health conditions among service members and veterans (e.g., Hoge et al., 2004). Among partnered service members and veterans (SM/Vs), higher PTSD symptoms are associated with poorer relationship satisfaction (see review, Taft, Watkins, Stafford, Street, & Monson, 2011), which is defined as the degree of happiness one experiences in their relationship, as well as how rewarding and warm they characterize their romantic relationship (Funk & Rogge, 2007).

Though DSM-5 suggests that PTSD has comprised the aforementioned four symptom clusters, factor analyses of the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013), one of the most frequently utilized measures of PTSD severity, rarely conform to this factor structure. Several alternate factor structures have been suggested and tested for model fit. Such studies find alternate models to be superior to the four-factor model suggested by DSM-5 (e.g., Armour, Contractor, Shea, Elhai, & Pietrzak, 2016; Blais, Geiser, & Cruz, 2018). One such model is the anhedonia model (Lui et al., 2014), which contains symptom clusters of (a) intrusions, (b) avoidance, (c) NACM, (d) anhedonia, (e) dysphoric arousal, and (f) anxious arousal. The anhedonia model has similarities to the DSM-5 model in that the intrusions and avoidance symptom clusters contain the same symptoms. Differences arise in the subsequent clusters. While both models have a symptom cluster of NACM, the anhedonia model has three fewer symptoms in this cluster. Those three symptoms are called the “anhedonia” cluster within the anhedonia model. Lastly, the symptoms contained in the alterations in arousal and reactivity symptom cluster of DSM-5 are split into “anxious arousal” (i.e., hypervigilance, exaggerated startle response) and “dysphoric arousal” (i.e., irritability, reckless behavior, difficulty sleeping, and concentrating) symptom clusters in the anhedonia model. Table 1 shows how the different symptoms are allocated between the DSM-5 and anhedonia models.

A recent review of the literature examining the association of PTSD symptom clusters identified in pre-DSM-5 models and relationship function revealed that higher emotional numbing symptoms, which include feelings of detachment/estrangement from others and anhedonia, were most consistently associated with poorer relationship function. Moreover, hyperarousal symptoms were generally, though less consistently, associated with poorer relationship function. Finally, intrusion symptoms showed the weakest and least consistent association with relationship function (see review, Campbell & Renshaw, 2018). Such findings have important implications for treatment among partnered SM/Vs experiencing PTSD. That is, to reduce PTSD severity, therapies should primarily target symptoms of emotional numbing and hyperarousal, and couples' therapy, relative to individual therapy, may be well suited to simultaneously treat both PTSD and relationship distress (see review, Kugler, Andresen, Bean, & Blais, 2019). Trauma-specific therapies for couples, including conjoint behavioral couples therapy (CBCT; Monson & Fredman, 2012) and strategic approach therapy (SAT; Sautter, Glynn, Arseneau, Cretu, & Yufik, 2014), may be of particular utility (Kugler et al., 2019).

A notable limitation of the extant literature examining PTSD symptom clusters and relationship function is that no studies using DSM-5 PTSD criteria were found during the review period (Campbell & Renshaw, 2018). All of the studies included in the 2018 review utilized DSM-IV-TR (American Psychiatric Association, 2000) criteria or earlier. Critical changes to PTSD symptoms were made in DSM-5, including the addition of three symptoms (i.e., [a] having strong negative beliefs about the world, others, oneself, [b] blaming oneself or others for the trauma, and [c] feeling fear, horror, anger, shame, or guilt; American Psychiatric Association, 2013) and wording changes to several existing symptoms in DSM-IV-TR. Moreover, the majority of studies contained in the review were almost solely comprised male SM/Vs and their female partners (Campbell & Renshaw, 2018). However, Renshaw, Campbell,

TABLE 1 Symptoms of PTSD and their respective clusters in the DSM-5 model and the anhedonia model

| Symptom | DSM-5 | Anhedonia |
|--|-------|-----------|
| 1. Repeated, disturbing, and unwanted memories of the stressful experience? | INT | INT |
| 2. Repeated, disturbing dreams of the stressful experience? | INT | INT |
| 3. Suddenly feeling or acting as if the stressful experience were actually happening again (<i>as if you were actually back there reliving it</i>)? | INT | INT |
| 4. Feeling very upset when something reminded you of the stressful experience? | INT | INT |
| 5. Having strong physical reactions when something reminded you of the stressful experience (<i>e.g., heart pounding, trouble breathing, and sweating</i>)? | INT | INT |
| 6. Avoiding memories, thoughts, or feelings related to the stressful experience? | AVOID | AVOID |
| 7. Avoiding external reminders of the stressful experience (<i>e.g., people, places, conversations, activities, objects, or situations</i>)? | AVOID | AVOID |
| 8. Trouble remembering important parts of the stressful experience? | NACM | NACM |
| 9. Having strong negative beliefs about yourself, other people, or the world (<i>e.g., having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous</i>)? | NACM | NACM |
| 10. Blaming yourself or someone else for the stressful experience or what happened after it? | NACM | NACM |
| 11. Having strong negative feelings such as fear, horror, anger, guilt, or shame? | NACM | NACM |
| 12. Loss of interest in activities that you used to enjoy? | NACM | ANH |
| 13. Feeling distant or cutoff from other people? | NACM | ANH |
| 14. Trouble experiencing positive feelings (<i>e.g., being unable to feel happiness or have loving feelings for people close to you</i>)? | NACM | ANH |
| 15. Irritable behavior, angry outbursts, or acting aggressively? | AAR | DYS ARS |
| 16. Taking too many risks or doing things that could cause you harm? | AAR | DYS ARS |
| 17. Being "superalert" or watchful or on guard? | AAR | ANX ARS |
| 18. Feeling jumpy or easily startled? | AAR | ANX ARS |
| 19. Having difficulty concentrating? | AAR | DYS ARS |
| 20. Trouble falling or staying asleep? | AAR | DYS ARS |

Abbreviations: AAR, alterations in arousal and reactivity; ANH, anhedonia; ANX ARS, anxious arousal; AVOID, avoidance; DSM-5, Diagnostic and Statistical Manual for Mental Disorders, 5th edition; DYS ARS, dysphoric arousal; INT, intrusions; NACM, negative alterations in cognition and mood; PTSD, posttraumatic stress disorder.

Meis, and Erbes (2014) observed that higher emotional numbing/withdrawal symptoms were associated with lower relationship satisfaction, and this association was stronger in females relative to males. A similar trend was observed in Erbes, Meis, Polusny, and Compton (2011), but the results did not reach significance, which might be due to the small sample of females in their study. Moreover, additional studies have been published since the 2018 review showing that specific PTSD symptom clusters have a unique association with relationship well-being in women. For example, Blais et al. (2018) observed that higher NACM, anhedonia, and dysphoric arousal were associated with sexual function and satisfaction in females, which are components of relationship quality.

It is critical that additional research is conducted to understand the association of DSM-5 PTSD symptom clusters with relationship satisfaction in females. Notably, females represent the fastest-growing demographic within the military and 46% are married (Patten & Parker, 2011). Moreover, civilian research shows that the prevalence rate for PTSD among females is higher than the prevalence rate observed in males (see reviews,

Brewin, Andrews, & Valentine, 2000; Ditlevsen & Elklit, 2012; Greene, Neria, & Gross, 2016; McLean & Anderson, 2009; Tolin & Foa, 2006), which may be due, in part, to having a higher likelihood of exposure to sexual violence (Frans, Rimmö, Åberg, & Fredrikson, 2005; Perrin et al., 2014). Finally, satisfying romantic relationships can buffer against suicidal ideation (e.g., Blow, Ganoczy, Walters, & Valenstein, 2018) and psychological distress (e.g., Taft et al., 2011), and emerging data reveals that among female SM/Vs, poorer relationship satisfaction is associated with increased suicide risk above and beyond the effects of PTSD and depression (Blais, 2019a). These studies highlight the critical need to further understand the association of PTSD symptom clusters and relationship satisfaction in females.

The current study aims to address this gap. Specifically, the current study examined the association of PTSD symptom clusters identified in the anhedonia model of PTSD and relationship satisfaction among a sample of trauma-exposed female SM/Vs who identified as partnered or married at the time of study participation. The anhedonia model was selected for this study as this model displayed the most optimal fit for the current sample (Blais et al., 2018). Consistent with previous research using earlier DSM PTSD criteria (e.g., Campbell & Renshaw, 2018), it was hypothesized that symptom clusters of anhedonia, NACM, and dysphoric arousal would be negatively associated with relationship satisfaction. These symptom clusters were selected as these three clusters are most similar to the emotional numbing and hyperarousal symptom clusters reported in Campbell and Renshaw (2018). Moreover, these symptoms reflect difficulties with interpersonal function and connection, including the expression of anger, which is negatively associated with relationship satisfaction (Renshaw, Blais, & Smith, 2010). As such, it makes sense that these clusters would have the most robust association with relationship satisfaction. Other symptom clusters, such as intrusions, may reflect more personally, rather than interpersonally, distressing symptoms, resulting in a less robust, or nonsignificant association with relationship satisfaction.

2 | METHODS

2.1 | Participants

Data were extracted from a larger study ($N = 833$) that examined the associations of sexual health, relationship satisfaction, and military sexual trauma (MST) in female SM/Vs (Blais, 2019b). Participants were included in the present study if they endorsed a possible DSM-5 Criterion A index trauma and identified as partnered or married at the time of participation. Possible Criterion A index traumas were reviewed to determine whether Criterion A was likely met by two licensed clinical psychologists. SM/Vs self-identified their Criterion A index trauma when completing the PCL-5 (see below). Participants who did not self-report a Criterion A exposure were also included if they reported experiencing sexual violence in another part of the survey. Of the original sample, 477 (57.3%) participants met the criteria for the present study and comprise the current sample.

2.2 | Procedure

Participants were recruited through advertisements placed on social media and circulated through electronic list serving female military SM/Vs. Individuals who were interested in participating in the study navigated to Qualtrics to complete screening items confirming female sex, service in the military, and appropriate consenting age. Those that passed screening questions were provided with an Institutional Review Board Letter of Information. Study questionnaires were then presented. Compensation of \$15 was offered for participation. The Utah State University Institutional Review Board approved the parent study from which these data were extracted.

2.3 | Measures

2.3.1 | Demographics and covariates

Information on covariates of relationship status (partnered but not married and married) and duration (measured in years) were collected using a demographic inventory devised for the parent study. Additional demographic information, including branch, discharge status, rank, age, race, and a history of sexual violence during military service, was collected and reported here for the purpose of describing the study sample. Information on sexual orientation was not collected. Trauma type was also included as a covariate and was captured using a textbox write-in option following the PCL-5 administration. Traumas were coded as MST versus all else given the predominance of those identifying MST ($n = 263$, 55.14%) as their index trauma. Trauma type was included as a covariate given that MST, relative to other traumas, is associated with higher psychological distress (e.g., PTSD, depression, and sexual dysfunction) in several studies (e.g., Blais & Monteith, 2018; DiMauro, Renshaw, & Blais, 2018; Guina, Nahhas, Kawalec, & Farnsworth, 2019).

The *Couples' Satisfaction Index-4* (CSI-4; Funk & Rogge, 2007) was used to measure relationship satisfaction. The CSI-4 includes four self-report items measuring overall relationship satisfaction. A sample item includes: "In general, how satisfied are you with your relationship?" The four items are scored using a Likert scale ranging from 0 to 5 or 0–6 with varying anchor descriptors. The items are then summed for a total score ranging from 0 to 21. Higher scores are indicative of greater relationship satisfaction, and scores < 13.5 reflect distressed relationships (Funk & Rogge, 2007). Previous research using the CSI-4 shows that it has good psychometric properties and adequate convergent validity with other measures of relationship satisfaction (Funk & Rogge, 2007). Cronbach's alpha in the current sample was strong (Cronbach's $\alpha = .93$).

The PCL-5 (Weathers et al., 2013) was used to measure PTSD symptom cluster severity. The PCL-5 includes 20 self-report items. A sample item includes: "Over the past month, how much have you been bothered by repeated, disturbing, and unwanted memories of the stressful experience?" All 20 items are scored using a Likert Scale that ranges from 0 (*not at all*) to 4 (*extremely*). Scores are subsequently summed for a total severity score. Higher scores indicate greater distress. When compared with diagnostic interviews confirming a diagnosis of PTSD, self-report scores ≥ 31 indicate a probable PTSD diagnosis (Bovin et al., 2015). This cutoff was adopted in the current study.

Symptom clusters are created by summing items within a given cluster. The following symptom clusters are identified in the anhedonia model and include the following PCL-5 items: Intrusions (items 1 through 5; score range: 0–20; Cronbach's $\alpha = .93$), avoidance (items 6 and 7; score range: 0–8; Cronbach's $\alpha = .84$), NACM (items 8 through 11; score range: 0–16; Cronbach's $\alpha = .87$), anhedonia (items 12 through 14; score range: 0–12; Cronbach's $\alpha = .91$), dysphoric arousal (items 15, 16, and 19, 20; score range: 0–16; Cronbach's $\alpha = .81$), and anxious arousal (items 17 and 18; score range: 0–8; Cronbach's $\alpha = .86$).

2.4 | Analytic plan

Descriptive statistics were used to calculate sample characteristics of the study and demographic variables. Bivariate associations between PTSD symptoms clusters, relationship satisfaction, and covariates were assessed using Pearson's correlations and independent-samples t tests where applicable. Path analysis was then used to determine which symptom clusters were associated with relationship satisfaction while adjusting for covariates of relationship duration and type and trauma type (MST vs. all else). In Model 1 (see Figure 1), the full sample was used and in Model 2 (see Figure 2), only participants who scored 31 or higher on the PCL-5 ($n = 255$, 53.46%) were included. Relationship satisfaction was entered as the exogenous outcome variable and the six symptom clusters were entered as covarying endogenous variables with direct paths to relationship satisfaction. Relationship duration and type as well as trauma type were entered as covariates with direct paths to relationship satisfaction.

Relationship duration and type were allowed to correlate. Trauma type was allowed to correlate with each PTSD symptom cluster given previous research showing that MST, relative to other traumas, is associated with higher PTSD symptoms (Blais & Monteith, 2018; DiMauro et al., 2018; Guina et al., 2019). Model fit was examined using χ^2 , the comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). The goodness of fit was evaluated using fit statistics suggested by Hu and Bentler (1999), including ≥ 0.95 for CFI and TLI and ≤ 0.08 for RMSEA. Analyses were conducted in SPSS v.25 (IBM Corp, 2017) and Amos v.23 (Arbuckle, 2014).

3 | RESULTS

3.1 | Participants

The average age of participants was 32.40 (standard deviation [SD] = 7.20) years. The majority or near majority of the sample identified as White ($n = 360$, 75.47%), reported service in the Army ($n = 277$, 58.07%), junior enlisted status ($n = 228$, 47.80%), being married (vs. partnered but not married; $n = 363$, 76.10%), having at least some college education ($n = 441$, 92.45%), making \$50,000/year or more ($n = 292$, 61.22%), and being discharged from service ($n = 381$, 79.87%). The majority of the sample self-identified their Criterion A trauma as MST ($n = 263$, 55.14%). Other traumas included combat/deployment ($n = 106$, 22.22%), nonmilitary events ($n = 9$, 1.90%), domestic violence ($n = 8$, 1.70%), military noncombat experience ($n = 21$, 4.40%), and exposure to suicide ($n = 9$, 1.90%). Sixty-one (12.79%) participants did not self-identify a Criterion A trauma or did not provide enough detail to categorize the trauma, but endorsed exposure to MST that involved sexual violence in a separate part of the survey.

Means (M), SD s, and intercorrelations between relationship satisfaction, PTSD symptom clusters, and relationship duration are found in Table 2. Of note, the average score on the PCL-5 was 35.05 ($SD = 22.46$), suggesting the sample was experiencing clinical levels of PTSD. In fact, the majority of the sample ($n = 255$, 53.46%) scored 31 or higher on the PCL-5. The average score on the CSI-4 was slightly above the threshold for distressed relationships (see Table 2), and the full score range was observed in the current sample (range: 0–21). As shown in Table 2, relationship satisfaction was significantly and negatively correlated with each PTSD symptom cluster with

TABLE 2 Correlations, means, and standard deviations for all continuous variables used in the path model ($N = 477$)

| Variable | <i>M/SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------------|--------------|---------|--------|--------|--------|--------|--------|------|---|
| 1. Relationship satisfaction | 13.73 (5.25) | - | | | | | | | |
| 2. Intrusions | 8.19 (6.10) | -.25*** | - | | | | | | |
| 3. Avoidance | 4.08 (2.91) | -.19*** | .78*** | - | | | | | |
| 4. NACM | 6.95 (5.14) | -.31*** | .77*** | .77*** | - | | | | |
| 5. Anhedonia | 5.41 (4.10) | -.40*** | .68*** | .66*** | .77*** | - | | | |
| 6. Dysphoric arousal | 6.88 (4.51) | -.36*** | .71*** | .66*** | .76*** | .80*** | - | | |
| 7. Anxious arousal | 3.73 (2.77) | -.22*** | .68*** | .67*** | .70*** | .63*** | .74*** | - | |
| 8. Relationship duration | 5.84 (5.10) | -.15** | .01 | .01 | .01 | .05 | .01 | -.01 | - |

Abbreviation: NACM, negative alterations in cognition and mood.

* $p \leq .05$.

** $p \leq .01$.

*** $p < .001$.

small-to-medium effect sizes. PTSD symptom clusters were significantly and positively correlated with one another with large effect sizes. Shorter relationship duration was correlated with higher relationship satisfaction with small effect size, but unrelated to PTSD symptom clusters (see Table 2). Reporting exposure to MST was associated with lower relationship satisfaction ($M = 13.37$, $SD = 5.37$) relative to other traumas ($M = 14.57$, $SD = 4.86$, $t[407] = 2.27$, $p = .02$). Notably, those who reported exposure to MST had an average score on the CSI-4 that was slightly below the clinical threshold for distressed relationships. Those who reported exposure to MST (vs. all other traumas) also reported higher PTSD symptoms clusters (all $ps < .02$; specific test statistics are available upon request to the author). Being married was associated with lower relationship satisfaction ($M = 13.47$, $SD = 5.17$) relative to being partnered but not married ($M = 14.60$, $SD = 5.43$, $t[468] = 2.00$, $p = .05$). Being married was associated with a longer duration of relationship ($M = 6.87$ years, $SD = 5.31$) relative to being partnered but not married ($M = 2.53$ years, $SD = 2.18$, $t[426] = -12.34$, $p = .001$). Marital status was unrelated to PTSD symptom cluster severities ($ps > .05$; specific test statistics are available upon request to the author).

The model depicted in Figure 1 had an excellent fit to the data ($\chi^2[14, N = 477] = 0.651$, $p = .95$, CFI = 1.00, TLI = 1.01, RMSEA = 0.000). Higher relationship satisfaction was associated with lower dysphoric arousal, anhedonia, and shorter relationship duration. Higher relationship satisfaction was associated with higher avoidance. Given the negative bivariate correlation observed between relationship satisfaction and avoidance (see Table 2), the positive association between avoidance and relationship satisfaction observed in the path model is unexpected and likely due to suppression (MacKinnon, Krull, & Lockwood, 2000). Re-experiencing, NACM, anxious arousal, marital status, and trauma type (MST vs. all else) were unrelated to relationship satisfaction (see Figure 1).

When the model was rerun using only those participants who scored 31 or higher on the PCL-5 ($n = 255$, 53.46%), the model also had an excellent fit to the data ($\chi^2[14, N = 255] = 10.05$, $p = .76$, CFI = 1.00, TLI = 1.03, RMSEA = 0.000; see Figure 2). Higher relationship satisfaction was associated with lower anhedonia. Similar to the model with all participants, higher relationship satisfaction was also associated with higher avoidance, which was interpreted to be a result of suppression (MacKinnon et al., 2000). Dysphoric arousal was not significantly associated with relationship satisfaction, though the association trended toward significance ($p = .07$). Finally, similar to

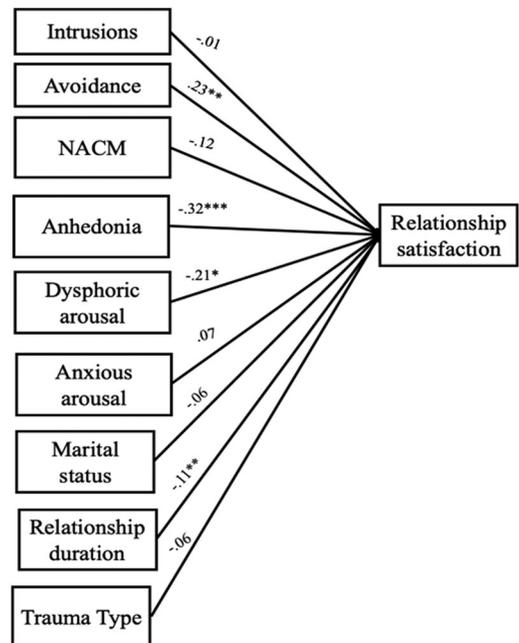


FIGURE 1 Path model of relationship satisfaction, PTSD symptom clusters, and covariates in the full sample. PTSD symptom clusters were allowed to covary. Marital status and relationship duration were allowed to covary. Trauma type (MST = 1 vs. all else = 0) was allowed to covary with symptom clusters. MST, military sexual trauma; NACM, negative alterations in cognition and mood; PTSD, posttraumatic stress disorder

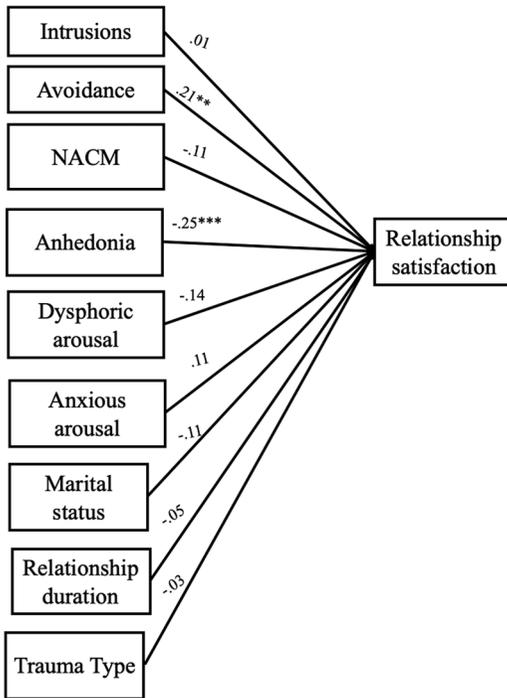


FIGURE 2 Path model of relationship satisfaction, PTSD symptom clusters, and covariates in the sample of those experiencing clinical levels of PTSD (PCL-5 = 31+). PTSD symptom clusters were allowed to covary. Marital status and relationship duration were allowed to covary. Trauma type (MST = 1 vs. all else = 0) was allowed to covary with symptom clusters. DSM-5, Diagnostic and Statistical Manual for Mental Disorders, 5th edition; MST, military sexual trauma; NACM, negative alterations in cognition and mood; PCL-5, PTSD Checklist for DSM-5; PTSD, posttraumatic stress disorder

the first model, re-experiencing, NACM, anxious arousal, marital status, and trauma type (MST vs. all else) were unrelated to relationship satisfaction (see Figure 2).

4 | DISCUSSION

The purpose of the current study was to extend extant literature on the association of PTSD symptom clusters and relationship satisfaction among partnered SM/Vs. In particular, this association was examined in a sample of trauma-exposed females using DSM-5 PTSD symptoms and symptom clusters identified in the anhedonia model of PTSD (Lui et al., 2014). Consistent with hypotheses, higher anhedonia and dysphoric arousal symptom clusters were associated with lower relationship satisfaction. However, when aggregating the sample to only those experiencing probable clinical levels of PTSD, only higher anhedonia was associated with poorer relationship satisfaction. Dysphoric arousal only trended toward significance. Inconsistent with hypotheses, NACM was unrelated to relationship satisfaction after accounting for other symptom clusters and covariates. Higher avoidance was associated with higher relationship satisfaction after accounting for covariates and other symptom clusters, but this association was likely due to suppression has given the negative bivariate association. Suppression is not atypical in path models (MacKinnon et al., 2000), particularly those that include independent variables that are highly correlated, which was the case for all of the PTSD symptom clusters. As noted by Maassen and Bakker (2001), suppression variables constrain extraneous variance observed in other variables and improve the prediction of the outcome variable. Such effects should not be interpreted.

The current findings are largely consistent with the recent review that explored relationship function with pre-DSM-5 PTSD symptom clusters in samples that were largely comprised, males. Indeed, the prior study observed that emotional numbing and hyperarousal were the most commonly occurring symptom clusters associated with poorer relationship satisfaction (Campbell & Renshaw, 2018). Though the symptom clusters examined in the current study are identified by a different name relative to the pre-DSM-5 clusters, the symptoms that fall within these clusters are

very similar. Such results suggest consistency of this association across changes in the DSM and also suggest that symptoms of PTSD may be similarly related to relationship satisfaction among male and female SM/Vs.

American Psychiatric Association (2013) suggests that dysphoric arousal and anxious arousal symptom clusters identified in the anhedonia model can be captured in the same symptom cluster called alterations in arousal and reactivity. Interestingly, in the current study, only dysphoric arousal was associated with poorer relationship satisfaction, but only in the full sample. When the sample was aggregated to those who scored 31 or higher on the PCL-5, the association only approached significance. Findings from the current study suggest that these two symptom clusters function separately, and therefore, may be better captured by two distinct symptom clusters. Indeed, dysphoric arousal contains behaviors that are associated with interpersonal conflicts, such as irritability, anger, and aggression (Watkins, Sippel, Pietrzak, Hoff, & Harpaz-Rotem, 2017). Anxious arousal, on the other hand, includes symptoms of hypervigilance. While hypervigilance may be bothersome to partners of those with PTSD, such symptoms are less likely to directly result in interpersonal conflict.

These findings have important implications for interventions designed to improve relationship satisfaction among partnered SM/Vs. Though individual therapies may effectively reduce PTSD symptoms and in turn, improve relationship satisfaction, couples' therapy interventions for trauma (e.g., CBCT; Monson & Fredman, 2012; SAT; Sautter et al., 2014) may be of optimal utility. Interventions may benefit from focusing on reducing the anhedonia and dysphoric arousal components of PTSD. Such interventions might include behavioral activation strategies (e.g., Jakupcak, Wagner, Paulson, Varra, & McFall, 2010), such as increasing engagement in positive, enjoyable activities, as well as increasing positive interactions with romantic partners. As dysphoric arousal includes symptoms of anger and irritability, and anger and irritability are negatively associated with relationship satisfaction (e.g., Renshaw et al., 2010), it may be helpful for individuals and couples to work on effective anger management and expression.

The use of alternate symptom clusters for PTSD should be used with caution. To make a diagnosis of PTSD, clinicians will need to rely on DSM-5 symptoms. Thereafter, clinicians could use information gained from this study to inform their treatment practices. It is critical that clinicians understand that the factor structure for the current study was determined following a factor analysis that determined the best fit for this sample. It is possible that another factor structure may be more appropriate if their clients differ in meaningful ways from those in the current sample. Additional research with other samples of female SM/Vs could help determine the most universally accepted factor structure and help identify whether the associations detected in the current investigation hold across other samples and study designs.

It is worth noting that the majority of the sample identified their Criterion A exposure as MST. Given the interpersonal nature of MST, it is possible that this type of trauma may be exerting unique effects on the association of PTSD with relationship satisfaction. For example, recent research shows that the association of exposure to MST and relationship satisfaction is mediated by sexual function and satisfaction (Blais, 2019b), and sexual function and satisfaction are associated with higher PTSD severity (Blais et al., 2018). Though trauma type was unrelated to relationship satisfaction in the path analysis, bivariate associations did reveal that those reporting MST (vs. all other traumas) reported significantly lower relationship satisfaction and higher PTSD symptom severity. Such results suggest that it may be important to consider the relative impact of trauma type in future studies examining the association of PTSD and relationship satisfaction. Such results further suggest that when it comes to interpersonal function, the traumatic reaction may be a better predictor of distress relative to the traumatic exposure. This is consistent with some of the conclusions drawn from a recent review of the literature examining the association of PTSD and sexual function (see review, Yehuda, Lehrner, & Rosenbaum, 2015).

The current study is not without limitations. The sample was comprised of a convenience sample of female SM/Vs who were primarily White. Results may not generalize to minority groups or civilians. Probable Criterion A trauma exposure and PTSD symptom cluster severity were based on self-report and not corroborated by a trained mental health professional. The current study did not assess for the presence of multiple trauma exposures and many military service members experience several traumatic experiences during their service (e.g., Kilpatrick et al., 2013). Results were also based on cross-sectional study design, so the true directionality of the association

between PTSD and relationship satisfaction cannot be determined. Furthermore, information on when the trauma occurred was not collected, so it is unclear how chronic the PTSD symptoms may have been at the time of the study. As PTSD can erode relationship satisfaction over time (e.g., Creech et al., 2019), future studies may covary for the duration of time that has passed since the trauma occurred. At the same time, it is also well-established that this association is cyclic in nature and bidirectional (Monson, Taft, & Fredman, 2009), so these results should be considered with caution.

Future research in this area would be strengthened by measuring the partner's perception of PTSD symptoms and their level of satisfaction with the relationship to gain a more comprehensive understanding of the relationship. Extant literature shows that partners' perceptions of PTSD distress yield important information about relationship function (e.g., Renshaw & Caska, 2012). Finally, future research may consider moderators (e.g., duration of time since trauma, whether the trauma occurred during their current partnership, and whether their partner knows the details of their trauma history) of the association of DSM-5 PTSD symptom clusters and relationship satisfaction in male and female SM/Vs.

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