The Impact of Aggression on the Relationship Between Betrayal and Belongingness Among U.S. Military Personnel.

Article in Military Psychology · February 2017
DOI: 10.1037/mil0000160

6 authors, including:

AnnaBelle Odette Bryan
University of Utah
26 PUBLICATIONS 181 CITATIONS

Craig J Bryan
University of Utah
157 PUBLICATIONS 2,325 CITATIONS

Bradley A Green
University of Southern Mississippi
54 PUBLICATIONS 885 CITATIONS

Michael D Anestis
University of Southern Mississippi
115 PUBLICATIONS 2,310 CITATIONS

Some of the authors of this publication are also working on these related projects:

The Minnesota Multiphasic Personality Inventory - 2 - Restructured Form (MMPI-2-RF) in a Sample of Individuals in Treatment for Sexual Addiction View project

Population Health and Social Media View project
The Impact of Aggression on the Relationship Between Betrayal and Belongingness Among U.S. Military Personnel

Rachel L. Martin and Claire Houtsma  
University of Southern Mississippi

AnnaBelle O. Bryan and Craig J. Bryan  
National Center for Veterans Studies, Salt Lake City, Utah, and The University of Utah

Bradley A. Green and Michael D. Anestis  
University of Southern Mississippi

The suicide rate among U.S. military personnel, particularly within the Army National Guard, is significantly higher than the rate found among the general population. To better understand why the Army National Guard has elevated rates of suicide, the current study examined how deployment-related moral injury interacts with interpersonal factors to predict suicide risk. Specifically, this study hypothesized that deployment-related betrayal, a facet of the Moral Injury Events Scale, would predict thwarted belongingness and that this relationship would be moderated by several types of aggression (physical aggression, verbal aggression, hostility, and anger). The current sample comprised 562 military personnel who had experienced at least 1 previous deployment. Results revealed that betrayal predicted thwarted belongingness in the presence of high but not low or mean levels of aggression among military personnel. This indicates that aggressive individuals who experience perceived betrayal while deployed may be at high risk for development of thwarted belongingness, an important risk factor for suicide. These results suggest the need for better assessment and treatment of betrayal among military personnel, as well as the need for programs to help soldiers manage aggression.

Keywords: suicide, military, betrayal, aggression

Until 2009, membership in the military appeared to confer some degree of protection against the development of suicidal ideation and suicidal behavior, yet suicide rates among the armed forces have dramatically increased (Nock et al., 2013). In recent years, military suicide rates have continued to rise, despite growing awareness and research (National Center for Telehealth and Technology, Defense Centers for Psychological Health [NCTT], 2014). The Army National Guard has the highest suicide rate of all branches and components of the military (33.4 per 100,000; NCTT, 2014), 78.6% higher than the rate among active duty military personnel (18.7 per 100,000; NCTT, 2014). When compared to that of men 20–29 years of age in the general population (23.4 per 100,000; Centers for Disease Control and Prevention, 2013), the suicide rate among Army National Guard military personnel is 42.7% higher. The elevated suicide rate of the National Guard has been a concern among researchers since it surpassed that of the active duty military (Griffith, 2012a, 2012b; Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011). One poten-
tial explanation for the elevated suicide risk in the National Guard is that, in contrast to military personnel in the active duty components, National Guard personnel separate from their unit after deployment. As such, interpersonal relationships may be strained with respect to both civilian and military life. If this is indeed the case, understanding specific vulnerabilities to interpersonal distress—particularly suicide-relevant interpersonal distress—is paramount. This study thus aims to determine to what extent specific military experiences are associated with interpersonal risk factors for suicide and, additionally, to what extent any such association is impacted by the response styles of the soldier.

Suicide risk appears particularly pronounced in certain military subpopulations. For example, previously deployed military personnel accounted for 66.5% of military deaths by suicide in the year 2013 (NCTT, 2014). Elevated suicide rates among the Army National Guard and among military personnel with previous deployment(s) highlight the need for improved understanding of what increases suicide risk for these individuals. Recently, military suicide researchers have increased efforts to explore soldiers’ specific experiences during deployment and their effect on suicide risk (C. J. Bryan, 2015). One potentially fruitful variable to consider in this regard could be deployment-based betrayal, which is considered one component of moral injury. As a construct, moral injury was first defined as events “such as perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations” (Litz et al., 2009, p. 697). Nash and colleagues (2013) developed the Moral Injury Events Scale (MIES) to systematically measure moral injury. This scale identifies two elements of moral injury: perceived transgressions (acts of commission or omission done by self or others) and perceived betrayals by others. Previous research has shown that veterans who question their moral integrity during battle identify with emotions such as alienation, loneliness, and abandonment (Doka, 2002; Fiala, 2008; Harvey, 2002; Kauffmann, 2002; Shay, 1994). Such findings indicate that the experience of moral injury during deployment may lead to the development of isolation and substantially interfere with interpersonal relationships. Prior work considering moral injury and its association with suicide risk has focused primarily on transgressions (self and other); however, given the importance of social support and reciprocal relationships in suicide risk, betrayal—and the potential interpersonal distress it could cause—may represent an important variable to consider. Betrayal, which assesses “internal conflict due to perceived duplicity or deceit by military leaders, fellow service members, and individuals external to the military,” has been shown to have unique characteristics separate from perceived transgressions due to its involvement of interpersonal distress (C. J. Bryan et al., 2016, p. 559; Nash et al., 2013).

Research among Vietnam veterans revealed betrayal as a constant theme throughout veterans’ combat experiences (McCormack & Joseph, 2014). The veterans in the study reported an association between betrayal and decreased quality of interpersonal relationships, as demonstrated through increases in blame and rejection from others (McCormack & Joseph, 2014). Furthermore, veterans reported that their betrayal in combat was expressed either internally (self-blaming) or externally (rage). The veterans who experienced rage as a result of their betrayal during combat reported heightened aggression since the betrayal and directed it toward those around them (McCormack & Joseph, 2014). Additionally, a more recent study of military personnel found that perceived betrayal was significantly associated with post-traumatic stress and anger (C. J. Bryan et al., 2016). C. J. Bryan and colleagues (2016) found that betrayal and perceived transgressions against the self correlated most robustly with life events in which the individual was victim to violence, hostility, or another form of aggression. Such findings demonstrate the connections between perceived betrayal and aggression and highlight the need for further examination of this relationship. This study seeks to advance the current literature by identifying the relationship between betrayal and interpersonal risk factors for suicidal ideation (thwarted belongingness and perceived burdensomeness; Joiner, 2005). Furthermore, we sought to examine whether such associations would be moderated by various forms of aggression, with the magnitude of the relationship increasing among more aggressive soldiers.

One way to conceptualize suicide risk is to examine it from the perspective of the Interpersonal-Psychological Theory of Suicide (IPTS;
An important aspect of the IPTS is the emphasis on interpersonal relationships measured through the constructs of perceived burdensomeness (PB) and thwarted belongingness (TB). PB refers to the belief that one is a burden to others and that one’s death is worth more than one’s life. TB refers to the perception that one lacks positive, reciprocal relationships (Joiner, 2005). Prior research among military personnel has shown the importance of interpersonal relationships as protective factors against suicide (C. J. Bryan, 2011; C. J. Bryan, Clemons, & Hernandez, 2012; C. J. Bryan, McNaughton-Cassill, & Osman, 2013). Therefore, identifying the mechanisms by which interpersonal relationships are disrupted for these individuals is vital to understanding how suicidal desire develops. Given previous research on trust’s being an essential part of interpersonal relationships, it appears plausible that betrayal would be associated with elevated levels of thwarted belongingness (Finkel, Rusbult, Kumsashiro, & Hannon, 2002; Lewicki & Bunker, 1996; Lewicki, McAllister, & Bies, 1998).

Previous research on betrayal has identified negative effects on interpersonal relationships (Finkel et al., 2002; Lewicki & Bunker, 1996; Lewicki et al., 1998). Although betrayal may potentially lead to TB, clearly not all individuals who are betrayed feel isolated. Given previous findings linking betrayal to anger and aggression (Fehr & Baldwin, 1996; Finkel et al., 2002; Haden & Hojat, 2006; Lewicki & Bunker, 1996; Mikula, Scherer, & Athenstaedt, 1998), it appears plausible that some individuals who are betrayed respond aggressively or with increased anger, thereby increasing the odds of strained relationships. In this sense, various forms of aggression may represent important moderators in the association between betrayal and suicide risk factors such as TB. A common way to measure aggression is through the Buss-Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992), which examines aggression across four different subscales: physical aggression, verbal aggression, hostility, and anger. Each subscale includes questions on how individuals react internally and externally when in an aggressive state. Physical and verbal aggression assess individuals’ willingness to harm others, anger assesses heightened arousal in preparation for an altercation, and hostility assesses an individual’s cognitive biases of injustice (Buss & Perry, 1992).

Previous aggression research within military samples has indicated a relationship between aggression and interpersonal distress. Studies have shown that anger has been associated with negative interpersonal outcomes and an increase in hostility (Taft, Schumm, Panuzio, & Proctor, 2008; Teten et al., 2010). A study utilizing a sample of National Guard and Reserve members revealed that, among soldiers who had deployment-related posttraumatic stress disorder, 90.9% of men and 100% of women had problems with anger (Worthen et al., 2014). Moreover, another recent study has identified an association between stressful life events and suicide risk among deployed Army National Guard personnel (Griffith, 2015). Here, researchers found that feelings of loneliness, anger, and/or frustration were associated with suicide risk—but only when followed by interpersonal behavior problems, including aggressive behavior toward a significant other (Griffith, 2015).

We sought to build upon this literature base by identifying the extent to which aggression amplifies the association between betrayal and TB in a sample of previously deployed soldiers drawn largely from the Army National Guard. We hypothesized that betrayal would be positively associated with TB and that the four facets of the BPAQ—physical aggression, verbal aggression, hostility, and anger—would each moderate this relationship, such that the relationship between betrayal and TB increases in magnitude at higher levels of aggression. Given that TB and PB are typically highly correlated with one another and both are proposed as necessary cognitive experiences for the development of serious suicidal ideation (Joiner, 2005), we also wanted to examine the same model using PB as the outcome. The theoretical rationale for aggression’s impacting the extent to which betrayal is associated with soldier’s later feeling like a burden on others and believing his or her death is worth more than his or her continued life is less clear, however. As such, we did not put forth a priori hypotheses for that set of analyses. If the results are consistent with our hypothesis, it may hold clinical significance for military personnel returning from deployment. Primarily, it would suggest a need to focus clinical efforts on coping techniques for individuals with heightened aggressive re-
sponses, thereby potentially limiting the impact of betrayal on the development of broadly impaired relationships and potential future suicide risk. Furthermore, it may highlight the need for mental health professionals to provide a forum in which to address perceived betrayals.

**Method**

**Participants**

Participants were U.S. military personnel (89.4% Army National Guard) drawn from a larger sample \( (N = 937) \) who presented in groups of up to 25 at a large Joint Forces Training Center in the southern United States. Participants were eligible for the study if they were affiliated with the U.S. military, were over the age of 18, and could provide informed consent. The current study focused on a subsample of military personnel who had experienced at least one previous deployment \( (N = 562^1; \text{M} = 28.67, \text{SD} = 8.19; 83.8\% \text{ male}) \). The two most frequently endorsed times since most recent deployment were within the past month (57.5%) and more than three years ago (17.3%). The soldiers who had been deployed within the past month were demobilizing from Operation Enduring Freedom at the time of the assessment. All other participants included in analyses identified having one of the following: 1 to six months since their last deployment (5.3%), 6 months to 1 year since their last deployment (5.5%), between 1 and 2 years (6.6%), and between 2 and 3 years (7.8%). Participants in our sample primarily self-identified as White (66.7%), with African American (20.2%), Hispanic or Latino/a (6.4%), Other (3.6%) Asian/Pacific Islander (1.8%), and Native American (1.3%) also being endorsed. Approximately half (50.5%) of the participants were never married, 36.4% reported that they were currently living with one or more people (79.3%). Approximately half of the sample reported that they had obtained some college-level education (50.1%). The remaining participants reported obtaining a high school diploma or general equivalency diploma (26.5%), or a college degree (17.4%), a graduate school degree (3.8%), some graduate school (2.1%), or did not finish high school (2.2%) as their highest level of education. Most participants were either employed full-time (61.6%) or unemployed (25.8%). Finally, participants reported that their family’s annual income ranged between \$0-10,000 (4.7%), \$10,001-\$25,000 (14.4%), \$25,001-\$50,000 (39.5%), \$50,001-\$75,000 (23%), \$75,001-$100,000 (10.7%), and greater than \$100,000 (7.7%).

**Measures**

**Predictor and moderator.**

*Moral Injury Events Scale (MIES; Nash et al., 2013).* The MIES is a nine-item measure that identifies the extent to which participants have observed, learned about, committed, or were victims of acts that violated their moral beliefs. A. O. Bryan and colleagues (2014) identified three distinct variables of the MIES on which we based our analyses. The three subscales are Other-Transgressions (seeing or learning about acts done by others that infringe on personal or moral beliefs), Self-Transgressions (acts completed by the individual that infringe on personal or moral beliefs), and Betrayal (the perception that the individual has been betrayed by others). Participants rated their agreement with having experienced such betrayals and transgressions on a 6-point scale ranging from 1 (Strongly Agree) to 6 (Strongly Disagree). This measure has demonstrated good internal consistency as well as strong convergent and discriminant validity within military samples (A. O. Bryan et al., 2014; C. J. Bryan et al., 2016; Nash et al., 2013). The internal consistency of the Betrayal subscale in our sample was .86. In the current study, all analyses were performed using the Betrayal subscale.

**Buss Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992).** The BPAQ is a 29-item questionnaire that measures four different subscales of aggression: Physical Aggression, Verbal Aggression, Hostility, and Anger. Physical Aggression is assessed by nine questions related to participants’ tendency to engage in physical altercations. The Verbal Aggression

---

1 Analyses were run on the subsample of deployed personnel. Due to missing data, our \( N \) varied between 219 and 217. Specific numbers can be found in Tables 2 and 3.
subscale consists of five items that measure participants’ argumentative nature. The Hostility subscale has eight items that assess cognitive processes related to aggression. Finally, Anger is a seven-item subscale that assesses participants’ temperament and control over their temperament. This self-report measure is scored on a 5-point scale ranging from 1 (Never or hardly applies to me) to 5 (Very often applies to me). Internal consistencies of the BPAQ for this sample were as follows: Physical Aggression, .72; Verbal Aggression, .78; Hostility, .82; and Anger, .74. This scale has demonstrated good reliability when first measured and when retested with both civilian and military samples (Buss & Perry, 1992; Harris, 1997; Teten et al., 2010).

Outcome. 
Interpersonal Needs Questionnaire (INQ – 15; Van Orden, Cukrowicz, Witte, & Joiner, 2012; Van Orden, Witte, Gordon, Bender, & Joiner, 2008). The INQ–15 measures levels of TB and PB. The subscales of this measure consist of nine items assessing TB and six items measuring PB. Each item is rated on a 7-point scale ranging from 1 (Not at all true for me) to 7 (Very true for me). Higher participant scores indicate a higher level of either TB or PB. The INQ–15 has demonstrated good construct validity, reliability, and generalizability (Van Orden et al., 2012). Previous research has tested the INQ–15 in military samples, and it has demonstrated good convergent validity and reliability (Gutierrez et al., 2016). The current study utilized TB as the outcome variable and PB as a covariate in our primary analysis and reversed the roles of those two variables in our exploratory analysis. The internal consistency in this sample was .89 for the TB subscale and .91 for the PB subscale.

Data Analytic Procedure

To test our hypothesis that the facets of the BPAQ would moderate the relationship between betrayal and TB, we ran a series of four hierarchical linear regressions using the PROCESS macro for SPSS (Hayes, 2013). Significant interactions were subsequently examined through analyses of simple slopes.

Results

Descriptive data for all variables used in analyses can be found in Table 1. A total of 28 (5.0%) of the soldiers in this sample reported current suicidal ideation, and a total of 34 (6.0%) reported a history of at least one lifetime suicide attempt.

To develop our list of covariates, we examined the associations between demographic variables and our predictor (betrayal), moderators (physical aggression, verbal aggression, hostility, and anger), and outcome variable (thwarted belongingness). By controlling for variables with significant associations with our primary variables of interest in each analysis, we aimed to conduct a stringent test of the proposed model while minimizing the impact

| Table 1 Descriptive Statistics and Correlations for Betrayal, Aggression, and Interpersonal Variables used in the Primary Analyses |
|---|---|---|---|---|---|---|---|
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Betrayal | — | — | — | — | — | — | — |
| 2. Physical aggression | — | — | — | — | — | — | — |
| 3. Verbal aggression | .24 | .63 | — | — | — | — | — |
| 4. Hostility | .26 | .55 | .60 | — | — | — | — |
| 5. Anger | .20 | .67 | .64 | .68 | — | — | — |
| 6. Thwarted belongingness | .31 | .21 | .26 | .52 | .35 | — | — |
| 7. Perceived burdensomeness | .30 | .18 | .19 | .44 | .28 | .69 | — |
| M | 4.57 | 22.76 | 13.95 | 18.51 | 14.94 | 18.10 | 7.63 |
| SD | 1.62 | 7.46 | 4.13 | 6.80 | 5.65 | 10.26 | 3.64 |
| Minimum | 1.00 | 9.00 | 5.00 | 8.00 | 7.00 | 9.00 | 6.00 |
| Maximum | 6.00 | 45.00 | 24.00 | 40.00 | 33.00 | 60.00 | 29.00 |

a Facets of moral injury. b Facet of aggression.

**p < .01.
on statistical power. In this sense, variables were included as covariates in specific analyses only if the results described in the following paragraphs indicated that they exhibited a significant association with one or more of the primarily variables of interest in that specific analysis.

Continuous demographic variables were investigated using zero-order correlations. Examination of these variables revealed that age was significantly associated with all moderators (physical aggression, $r = -.24, p < .001$; verbal aggression, $r = -.15, p = .001$; hostility, $r = -.15, p = .001$; anger, $r = -.15, p = .001$), indicating that older age is associated with less aggression. Furthermore, socioeconomic status (SES) was significantly associated with TB ($r = -.13, p = .004$), such that greater SES levels were associated with less severe scores on TB. Last, level of education was significantly associated with physical aggression ($r = -.20, p < .001$), hostility ($r = -.11, p = .02$), and anger ($r = -.11, p = .02$), such that greater education was associated with less aggression.

Dichotomous demographic variables were investigated using analyses of variance. Examination of these variables revealed that there were significant between-groups differences by sex on levels of physical aggression, $F(1, 449) = 13.88, p < .001$, with men displaying higher mean levels of physical aggression than did women. There were also significant between-groups differences by race on thwarted belongingness, $F(5, 468) = 2.37, p = .04$. Although this omnibus test was significant, post hoc analyses did not reveal significant differences between any two races. Furthermore, there were significant between-groups differences by marital status on thwarted belongingness, $F(4, 467) = 5.33, p < .001$, with those who were widowed and not remarried reporting significantly higher mean levels of thwarted belongingness than did those who had never been married, those who were currently married, and those who were currently separated from their spouse. Additionally, there were significant between-groups differences by employment on betrayal, $F(2, 346) = 3.49, p = .03$, with individuals employed part-time endorsing significantly higher mean levels of betrayal relative to individuals employed full-time. Perceived burdensomeness, the other component of suicidal desire as conceptualized by the interpersonal-psychological theory of suicide (Joiner, 2005), was also included as a covariate in all analyses. This was done to determine whether the interaction of betrayal and aggression predict thwarted belongingness specifically, as opposed to suicidal desire more broadly. This approach has been utilized increasingly often in studies examining the IPTS (Forrest et al., 2016; Hill & Pettit, 2012; Moberg & Anestis, 2015) and has been proposed as a method of improving understanding of the extent to which specific variables exhibit differential relationships with TB and PB, thereby highlighting the need to consider those variables in isolation from one another. Additionally, the other facets of aggression characterized in the BPAQ were included as covariates in all analyses to determine the unique impact of each type of aggression on the relationship between betrayal and thwarted belongingness.

Primary Analyses

Results indicated that the interaction of betrayal and physical aggression significantly predicted thwarted belongingness, $t(216) = -2.54, p = .012, f^2 = .03$. Analyses of simple slopes further revealed that betrayal was associated with thwarted belongingness at high, $t(216) = -3.38, p = .001$, but not mean, $t(216) = -1.89, p = .061$, or low, $t(216) = .25, p = .806$, levels of physical aggression. Furthermore, results indicated that the interaction of betrayal and verbal aggression significantly predicted thwarted belongingness, $t(218) = -2.21, p = .028, f^2 = .03$. Examination of analyses of simple slopes revealed that betrayal was associated with thwarted belongingness at high, $t(218) = -3.02, p = .003$, but not mean, $t(218) = -1.66, p = .098$, or low, $t(218) = .15, p = .879$, levels of verbal aggression. These results are presented in Table 2 and Figure 1. Results also showed that the interaction of betrayal and hostility significantly predicted thwarted belongingness, $t(218) = -2.36, p = .019, f^2 = .03$. Simple slopes analyses further revealed that betrayal was associated with thwarted belongingness at high, $t(218) = -3.12, p = .002$, but not mean, $t(218) = -1.80, p = .074$, or low, $t(218) = .18, p = .858$, levels
of hostility. Finally, results indicated that the interaction of betrayal and anger significantly predicted thwarted belongingness, \( t(218) = -3.13, p = .002, f^2 = .05 \). Simple slopes analyses further indicated that betrayal was associated with thwarted belongingness at high, \( t(218) = -3.56, p = .001 \), but not mean, \( t(218) = -1.69, p = .092 \), or low, \( t(218) = .67, p = .505 \), levels of belongingness.

---

Table 2
Physical Aggression and Verbal Aggression as Moderators of the Relationship Between Betrayal and Thwarted Belongingness

<table>
<thead>
<tr>
<th>Variable</th>
<th>( N = 217 )</th>
<th>( N = 219 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( R^2 )</td>
<td>( \Delta R^2 )</td>
</tr>
<tr>
<td>Model summary</td>
<td>.555</td>
<td>.544</td>
</tr>
<tr>
<td>Age</td>
<td>-.05</td>
<td>.08</td>
</tr>
<tr>
<td>SES</td>
<td>-.25</td>
<td>.47</td>
</tr>
<tr>
<td>Race</td>
<td>-.38</td>
<td>.45</td>
</tr>
<tr>
<td>Marital status</td>
<td>-.19</td>
<td>.59</td>
</tr>
<tr>
<td>Employment status</td>
<td>1.27</td>
<td>.63</td>
</tr>
<tr>
<td>Education</td>
<td>-.02</td>
<td>.61</td>
</tr>
<tr>
<td>Sex</td>
<td>.02</td>
<td>1.34</td>
</tr>
<tr>
<td>Verbal aggression</td>
<td>-.21</td>
<td>.17</td>
</tr>
<tr>
<td>Hostility</td>
<td>.45</td>
<td>.11</td>
</tr>
<tr>
<td>Anger</td>
<td>.06</td>
<td>.13</td>
</tr>
<tr>
<td>Perceived burdensomeness</td>
<td>8.19</td>
<td>.85</td>
</tr>
<tr>
<td>Physical aggression</td>
<td>.40</td>
<td>20.00</td>
</tr>
<tr>
<td>Betrayal</td>
<td>1.64</td>
<td>1.01</td>
</tr>
<tr>
<td>Interaction</td>
<td>.569</td>
<td>.014</td>
</tr>
<tr>
<td>Betrayal × Physical Aggression</td>
<td>-.10</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note. SES = socioeconomic status.
of anger. These results are presented in Table 3 and Figure 2.2.

**Exploratory Analyses**

Given the conceptual overlap between TB and PB and their proposed combined role in the development of suicidal ideation (Joiner, 2005), we also reran our moderation analyses with PB rather than TB serving as the outcome variable. In each case, the interaction between aggression (physical aggression, verbal aggression, anger, hostility) and betrayal was nonsignificant ($p > .12$). The main effect of betrayal was significant in three of the four analyses (physical aggression, hostility, anger: $b = .11$, $p < .032$). The main effect was nonsignificant in the verbal aggression moderation equation. This is likely explained by the fact that the covariate list was slightly different (education level was not associated with verbal aggression and, as such, was not included in that analysis). None of the aggression subscales exhibited a significant main effect on PB.

**Discussion**

The present study sought to examine the relationship between betrayal and TB in a large sample of previously deployed soldiers drawn largely from the Army National Guard, the military component with the highest suicide rate. This study further sought to examine whether various aspects of aggression impacted the strength of this relationship. Consistent with our hypotheses, each facet of aggression identified in the BPAQ (physical aggression, verbal aggression, hostility, and anger) significantly moderated the relationship between betrayal and TB, such that betrayal was associated with TB at high but not mean or low levels of aggression. These preliminary findings indicate that military personnel who have experienced betrayal during deployment may be particularly vulnerable to developing severely impaired relationships (TB) if they tend to exhibit an aggressive response pattern. Given that TB is a risk factor for the development of suicidal ideation, these findings represent preliminary evidence that the path from difficult deployment experiences to the eventual development of suicide risk (e.g., ideation) may be heavily influenced by trait response patterns such as aggression, thereby highlighting vital treatment and prevention targets.

Experiencing betrayal can be isolating for many reasons. When an individual loses trust in those around them, the person may begin to feel lonely and withdrawn from others and/or express outward resentment. Past studies have found that betrayal can result in reassessment of relationships, regret, sadness, anger, and loss of self-esteem (e.g., Fehr & Baldwin, 1996; Finkel et al., 2002), indicating that such an experience may impact perceptions of connectedness with others. This may be especially true for military personnel, who are trained to depend on fellow soldiers and who develop strong connections to these individuals. Experiencing betrayal at the hands of such trusted comrades could cause an individual to question military bonds, which may result in increased TB. This point may be particularly amplified in the National Guard because soldiers in this component of the military alternate between civilian and military lifestyles, thereby diminishing the extent to which they can fully integrate into either world. Aggression could also be a foundation for decreased quality of interpersonal relationships. Individuals who score high on the BPAQ answered questions relating to their interactions with others such as “Once in a while I can’t control the urge to strike another person” and “I often find myself disagreeing with people”; Buss & Perry, 1992, p. 454). These negative interactions could contribute to a lack of positive interpersonal relationships, and once these individuals feel as though they have been betrayed, these negative reactions and resentments could manifest and influence other relationships. Our results are consistent with those of previous research in which higher scores on an aggression questionnaire were associated with decreased quality of interpersonal relationships (Taft et al., 2008; Teten et al., 2010).

Our exploratory analyses examining this same model in the prediction of PB produced a different profile of results. In these analyses, none of the interaction terms were significant, indicating that aggression does not influence any association be-

---

2 In order to ensure that our demographic covariates did not spuriously influence the results, we reran our analyses without demographic covariates. Results were unchanged with respect to statistical significance and the nature of the conditional effects.
between betrayal and feelings of burdensomeness. There was a modest main effect of betrayal on PB in three of the four analyses, which represents preliminary evidence that feeling betrayed by others during deployment may result in soldiers’ later developing a sense that their death is worth more to others than their continued life. Given our lack of a priori hypotheses for these analyses and their cross-sectional nature, however, further replication in alternate study designs is needed before

---

**Table 3**

*Hostility and Anger as Moderators of the Relationship Between Betrayal and Thwarted Belongingness*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$N = 219$</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>$N = 219$</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>$\Delta R^2$</td>
<td>$b$</td>
<td>$SE$</td>
<td>$p$</td>
<td>$R^2$</td>
<td>$\Delta R^2$</td>
<td>$b$</td>
<td>$SE$</td>
</tr>
<tr>
<td><strong>Model summary</strong></td>
<td>.545</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.554</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>- .05</td>
<td>.08</td>
<td>.535</td>
<td></td>
<td>.05</td>
<td>.08</td>
<td>.535</td>
<td></td>
<td>.05</td>
</tr>
<tr>
<td>SES</td>
<td>- .27</td>
<td>.46</td>
<td>.554</td>
<td></td>
<td>.23</td>
<td>.46</td>
<td>.554</td>
<td></td>
<td>.23</td>
</tr>
<tr>
<td>Race</td>
<td>.24</td>
<td>.44</td>
<td>.590</td>
<td></td>
<td>.23</td>
<td>.43</td>
<td>.593</td>
<td></td>
<td>.23</td>
</tr>
<tr>
<td>Marital status</td>
<td>- .29</td>
<td>.59</td>
<td>.621</td>
<td></td>
<td>- .31</td>
<td>.58</td>
<td>.597</td>
<td></td>
<td>- .31</td>
</tr>
<tr>
<td>Employment status</td>
<td>1.20</td>
<td>.63</td>
<td>.056</td>
<td></td>
<td>1.35</td>
<td>.62</td>
<td>.031</td>
<td></td>
<td>1.35</td>
</tr>
<tr>
<td>Education</td>
<td>.06</td>
<td>.60</td>
<td>.926</td>
<td></td>
<td>.20</td>
<td>.60</td>
<td>.745</td>
<td></td>
<td>.20</td>
</tr>
<tr>
<td>Physical</td>
<td>- .05</td>
<td>.09</td>
<td>.587</td>
<td></td>
<td>- .04</td>
<td>.09</td>
<td>.660</td>
<td></td>
<td>- .04</td>
</tr>
<tr>
<td>Anger</td>
<td>.12</td>
<td>.13</td>
<td>.366</td>
<td></td>
<td>.73</td>
<td>.24</td>
<td>.003</td>
<td></td>
<td>.73</td>
</tr>
<tr>
<td>Perceived burdensomeness</td>
<td>7.64</td>
<td>.87</td>
<td>.000</td>
<td></td>
<td>7.96</td>
<td>.85</td>
<td>.000</td>
<td></td>
<td>7.96</td>
</tr>
<tr>
<td>Hostility</td>
<td>.89</td>
<td>.22</td>
<td>.000</td>
<td></td>
<td>.46</td>
<td>.11</td>
<td>.000</td>
<td></td>
<td>.46</td>
</tr>
<tr>
<td>Betrayal</td>
<td>1.27</td>
<td>.90</td>
<td>.160</td>
<td></td>
<td>1.70</td>
<td>.83</td>
<td>.043</td>
<td></td>
<td>1.70</td>
</tr>
<tr>
<td>Interaction</td>
<td>.557</td>
<td>.012</td>
<td></td>
<td></td>
<td></td>
<td>.575</td>
<td>.021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betrayal × Hostility</td>
<td>-.10</td>
<td>.04</td>
<td>.019</td>
<td></td>
<td></td>
<td>-.15</td>
<td>.05</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Betrayal × Anger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* SES = socioeconomic status.
any firm conclusions can be developed regarding those relationships.

An examination of our covariates yielded some significant results. For the interaction of physical aggression moderating the relationship between betrayal and TB, hostility was significantly associated with TB ($p = .000$). When verbal aggression moderated the relationship, employment ($p = .036$) and hostility ($p = .000$) were significantly associated with TB. When hostility moderated, PB was a significant covariate ($p = .000$). Finally, when anger moderated, employment ($p = .031$), hostility ($p = .000$), and PB ($p = .000$) were all significant. Should this pattern replicate in future examinations of this model, this may indicate that such variables are important clinical targets in reducing vulnerability to TB; however, given the variability in significant covariates across analyses and our lack of a priori predictions for those variables, we are hesitant to express any pronounced beliefs on their meaning.

In the current study, we chose to limit our investigation to the associations between betrayal and TB because we felt it was the clearest model that fit best with prior literature. However, future studies should examine the possibility that important relationships may exist between the current variables under investigation, as well as the other two aspects of the Moral Injury Events Scale (self-transgressions and other-transgressions) and perceived burdensomeness. Future studies should investigate these relationships to understand how moral injury and suicidal desire interact more broadly.

Although we believe these results provide important information in understanding suicide risk within the National Guard, we also note that this study had several limitations. First, the information for this study was gathered through electronic self-report surveys. Similar to the case in any self-report survey, the data collected may not accurately portray the participants’ beliefs or experiences. This limitation is especially noteworthy within military populations because military personnel tend to underreport or modify reporting of specific symptoms, such as suicidal thoughts (Blocker & Miller, 2013; Hoge & Castro, 2012; Rudd, 2013). Another limitation to this study is that the data were cross-sectional in nature, which prevents us from drawing causal inferences about the relationship between betrayal, aggression, and TB. These preliminary findings should be replicated assessing soldiers’ aggression and feelings of betrayal pre- and postdeployment. Doing so will allow increased confidence in the proposed directionality of the effects in our model. Additionally, we assessed for SES and not rank. Using a military sample, rank could provide insight into work-related stressors and responsibilities. Furthermore, a limitation is the use of the INQ–15 instead of other psychometrically established measures for TB and PB. Finally, because the sample consisted of primarily National Guard soldiers, we cannot generalize these findings to other components of the military. In particular, the extent to which these results would apply to active duty military who live on base between deployments should be specifically investigated in the future. Future work should consider examining to what extent our model directly predicts suicidal ideation. Given the low level of current ideation in our sample, we were unable to address that component of the model.

Despite the aforementioned limitations, this study has important strengths. First, the large sample size lent statistical strength to the study. The sample itself comprised military personnel, primarily drawn from the Army National Guard. This is particularly important because the National Guard is an understudied population at increased risk for suicide. Finally, this study is one of the first to investigate the impact of perceived betrayal on suicide risk. The results indicate that experiencing betrayal may lead to TB, particularly when the betrayed individual also has high levels of aggression. This study identifies that a unique deployment-related experience, betrayal, can influence suicide risk among previously deployed military personnel. Therefore, identifying soldiers who have had betrayal experiences may aid risk assessment and also provide clinicians with a target for treatment. Furthermore, these findings indicate a need for interventions that address aggression among military personnel. Such interventions would be especially useful for individuals who have experienced moral injury during combat.

References


Bryan, C. J. (2011). The clinical utility of a brief measure of perceived burdensomeness and


Received October 27, 2015
Revision received December 2, 2016
Accepted December 13, 2016