Ethnoracial Differences in PTSD Symptoms and Trauma-Related Cognitions in Treatment-Seeking Active Duty Military Personnel for PTSD

Britanny N. Hall-Clark  
University of Texas Health Science Center at San Antonio

Antonia N. Kaczkurkin, Anu Asnaani, and Jody Zhong  
University of Pennsylvania

Alan L. Peterson  
University of Texas Health Science Center at San Antonio and South Texas Veterans Health Care System, San Antonio, Texas

Jeffrey S. Yarvis  
Carl R. Darnall Army Medical Center, Fort Hood, Texas

Elisa V. Borah  
University of Texas at Austin

Katherine A. Dondanville  
University of Texas Health Science Center at San Antonio

Elizabeth A. Hembree  
University of Pennsylvania

Brett T. Litz  
VA Boston Healthcare System, Boston, Massachusetts, and Boston University

Jim Mintz and Stacey Young-McCaughan  
University of Texas Health Science Center at San Antonio

Edna B. Foa  
University of Pennsylvania

For the STRONG STAR Consortium

Objective: It is uncertain whether ethnoracial factors should be considered by clinicians assessing and treating posttraumatic stress disorder (PTSD) among service members. The purpose of this study was to shed light on ethnoracial variation in the presentation of PTSD symptoms, trauma-related cognitions, and emotions among treatment-seeking active duty military personnel. Method: Participants were 303 male active duty military members with PTSD participating in a clinical trial (60% were self-identified as White, 19% as African American, and 21% as Hispanic/Latino). In the parent study, participants completed a baseline assessment that included clinician-administered and self-report measures of PTSD, trauma-related cognitions, and emotions. Results: Multivariate hierarchical regression models were used to examine ethnoracial differences in these variables, covarying age, education, military grade, combat exposure, and exposure to other potentially traumatic events. Hispanic/Latino and African American participants reported more reexperiencing symptoms, more fear, and more guilt and numbing than White participants. All effect sizes were in the small to medium range. Conclusions: These findings suggest ethnoracial variation in PTSD symptom burden and posttraumatic cognitions among treatment-seeking
Service members from diverse cultures, ethnicities, and racial groups may experience or cope with high-magnitude, war-related events differently, and thus may be at greater risk for posttraumatic stress disorder (PTSD; Ruef, Litz, & Schlenger, 2000). Yet several studies of war veterans have failed to find substantive differences in PTSD burden between ethnoracial groups (e.g., C’de Baca, Castillo, & Qualls, 2012). However, many previous studies were conducted with Vietnam veterans, did not specify military era, or compare conflict generations. Each conflict has unique contextual factors that may influence the experience of PTSD (e.g., draft status, public opinion, attitudes toward racial diversity). Many recent epidemiological studies have failed to test ethnoracial differences in the prevalence or severity of PTSD among deployed service members (e.g., Elhai et al., 2015), but those that do have found that service members of color are more likely to have PTSD (Sandweiss et al., 2011). However, these studies did not report the clinical significance and effect sizes of the differences found, making it difficult to assess the significance of the results.

In previous studies with veterans of color, observed ethnoracial differences in PTSD were explained by socioeconomic status and prior trauma (Pittman, 2014; Ruef et al., 2000). However, national studies have found that higher rates of PTSD persisted among African Americans even after combat was taken into account (Alegría et al., 2013; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Furthermore, African Americans and Latinos have reported more reexperiencing and dissociative symptoms than Whites (Alcántara, Casement, & Lewis-Fernández, 2013), which was accounted for by the extent of war zone exposure in one study (Alim, Charney, & Mellman, 2006). Several studies failed to replicate this finding (Monnier, Elhai, Frueh, Sauvegeot, & Magruder, 2002; Pittman, 2014). Hispanic/Latino veterans also endorse higher intrusive thoughts, avoidance, hyperarousal, and guilt compared with their White counterparts (Alcántara et al., 2013; Pittman, 2014).

In addition, because of differences in values, worldviews, and sociocultural experiences, racial/ethnic minorities possibly respond to trauma in culturally specific ways, which may be reflected in posttraumatic cognitions about the self, others, and the world. For example, Joseph and Gray (2010) found that PTSD symptoms and self-blame internal attributions of traumas were significantly related in African Americans, but not in Whites. Furthermore, Ford (2012) found that self-blame was associated with higher dissociation severity, higher PTSD severity, and substance use disorders, which varied according to race/ethnicity and education. Ethnoracial minorities have also endorsed more negative thoughts about themselves, negative cognitions about the world, and self-blame relative to Whites (Williams, Jayawickreme, Sposato, & Foa, 2012).

The current study sought to add to the limited literature on racial/ethnic differences in posttraumatic cognitions in military service members. The following hypotheses were tested: (a) Service members of color will report higher severity of PTSD symptoms than White service members, overall, and in specific symptom clusters (e.g., greater intrusive thoughts, avoidance, and hyperarousal); (b) Service members of color will endorse more fear-related and guilt and numbing emotions during and after the trauma than White service members; and (c) Ethnoracial differences will emerge in trauma-related cognitions, with service members of color reporting greater levels of negative thoughts about the world, negative cognitions about themselves, self-blame, and feelings of guilt compared with White service members.

Method

Participants

This study analyzed data collected as part of baseline screening of active duty service members seeking treatment for PTSD who met inclusion and exclusion criteria for the study (N = 366), which was conducted at Fort Hood, Texas, between 2009 and 2015. Filtering out groups with insufficient sample sizes, followed by listwise deletion to filter out cases missing total scores on any measure of interest, resulted in an n of 303 participants for the final analysis: 180 White (59.4%), 60 African American (19.8%), and 63 Hispanic/Latino (20.8%; see online supplemental materials for details on methods and demographics).

Measures

PTSD symptoms were measured using the PTSD Symptom Scale—Interview Version (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993) and the PTSD Checklist—Stressor-Specific Version (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993). Combat exposure was measured with the Deployment Risk and Resiliency Inventory (DRRI-Combat; King, King, Vogt, Knight, & Samper, 2006). Other traumatic life events were assessed using the Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004). Measures of trauma-related emotions and cognitions included the Peri-Traumatic & Posttraumatic Emotions Questionnaire (PTEQ; Rizvi, Kaysen, Gutner, Griffen, & Resick, 2008), the Cognitive Emotion Regulation Questionnaire—Short (CERQ; Garnefski & Kraaij, 2006), the Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orlinsky, 1999), and the Trauma-Related Guilt Inventory—Brief (TRGI; Kubany et al., 1996). Multivariate hierarchical regression was used to examine ethnoracial differences in these trauma-related emotions and cognition measures, while controlling for age, education, military grade, combat exposure, and other traumatic life events. Full scale descriptions, internal consistency measures, and models tested are provided in the online supplemental materials.
Results

PTSD Total Severity and Symptom Clusters

The overall multivariate test was significant (Wilks λ = .29), \( F(210, 1837) = 1.74, p < .001 \). After controlling for covariates, Hispanic/Latino and African American service members endorsed greater total PCL-S scores than non-Hispanic White service members (see Table 1 for regression statistics). Hispanic/Latino and African American participants endorsed greater reexperiencing, avoidance symptoms, and arousal symptoms than non-Hispanic White participants. Both Hispanic/Latino and African American participants reported experiencing more flashbacks than White individuals. The Hispanic/Latino group endorsed greater reexperiencing symptoms on the PSS-I than the White group and the African American group. No other significant differences were found.

Trauma-Related Emotions

Hispanic/Latino and African American participants endorsed experiencing more fear-related emotions as well as guilt and numbing-related emotions during the trauma compared with White participants (see Table 1). African Americans were less likely to endorse being composed during the trauma. Regarding emotions experienced after the trauma, Hispanic/Latino and African American participants endorsed experiencing more fear-related emotions than White participants.

Trauma-Related Cognitions and Guilt

Both Hispanic/Latinos and African Americans showed greater CERQ rumination and CERQ “putting into perspective” scores than Whites (see Table 1). African Americans endorsed less blaming of others on the CERQ, more negative cognitions about the world on the PTCI, and greater feelings of guilt regarding the lack of justification of their own actions during the traumatic event (TRGI) than Whites.

Discussion

Study results revealed that, consistent with previous work (Alcántara et al., 2013; Pittman, 2014), Hispanic/Latino and African American participants reported greater reexperiencing, avoidance, and arousal symptoms on the PCL-S compared with White participants. Hispanic/Latinos also showed greater reexperiencing on the PSS-I compared with Whites, but this difference was not observed for African Americans. Controlling for age, education, military grade, combat exposure, and other traumatic events did not mitigate ethnoracial differences, contrary to prior research that trauma survivors FDR correction for multiple comparisons.

Table 1
Ethnoracial Hierarchical Regression Results

<table>
<thead>
<tr>
<th>Measure</th>
<th>Direction</th>
<th>β</th>
<th>B</th>
<th>SE</th>
<th>( n(296) )</th>
<th>( p )</th>
<th>95% CI</th>
<th>( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCL-S Total</td>
<td>AA &gt; W</td>
<td>.21</td>
<td>5.58</td>
<td>1.59</td>
<td>3.51</td>
<td>&lt;.001*</td>
<td>[2.45, 8.71]</td>
<td>.41</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.20</td>
<td>5.12</td>
<td>1.49</td>
<td>3.44</td>
<td>&lt;.001*</td>
<td>[2.19, 8.06]</td>
<td>.40</td>
</tr>
<tr>
<td>PCL-S Reexperiencing</td>
<td>AA &gt; W</td>
<td>.19</td>
<td>1.94</td>
<td>.61</td>
<td>3.17</td>
<td>.002*</td>
<td>[73, 3.14]</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.17</td>
<td>1.68</td>
<td>.57</td>
<td>2.93</td>
<td>.004*</td>
<td>[55, 2.80]</td>
<td>.34</td>
</tr>
<tr>
<td>PCL-S Avoidance</td>
<td>AA &gt; W</td>
<td>.19</td>
<td>2.51</td>
<td>.81</td>
<td>3.10</td>
<td>.002*</td>
<td>[92, 4.11]</td>
<td>.36</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.18</td>
<td>2.30</td>
<td>.76</td>
<td>3.02</td>
<td>.003*</td>
<td>[80, 3.79]</td>
<td>.35</td>
</tr>
<tr>
<td>PCL-S Arousal</td>
<td>AA &gt; W</td>
<td>.12</td>
<td>1.12</td>
<td>.56</td>
<td>1.98</td>
<td>.049</td>
<td>[01, 2.22]</td>
<td>.23</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.13</td>
<td>1.16</td>
<td>.53</td>
<td>2.19</td>
<td>.029</td>
<td>[12, 2.20]</td>
<td>.25</td>
</tr>
<tr>
<td>PCL-S Flashbacks</td>
<td>AA &gt; W</td>
<td>.22</td>
<td>6.11</td>
<td>.17</td>
<td>3.65</td>
<td>&lt;.001*</td>
<td>[28, 9.3]</td>
<td>.42</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.22</td>
<td>6.00</td>
<td>.16</td>
<td>3.83</td>
<td>&lt;.001*</td>
<td>[29, 9.0]</td>
<td>.45</td>
</tr>
<tr>
<td>PSS-I Reexperiencing</td>
<td>AA &gt; AA</td>
<td>.23</td>
<td>1.61</td>
<td>.50</td>
<td>3.21</td>
<td>.002*</td>
<td>[62, 2.60]</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.13</td>
<td>.91</td>
<td>.40</td>
<td>2.26</td>
<td>.025</td>
<td>[12, 1.70]</td>
<td>.26</td>
</tr>
<tr>
<td>Peri-TEQ Fear-Related Emotions</td>
<td>AA &gt; W</td>
<td>.15</td>
<td>2.63</td>
<td>1.10</td>
<td>2.38</td>
<td>.018</td>
<td>[46, 4.80]</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.13</td>
<td>2.22</td>
<td>1.03</td>
<td>2.15</td>
<td>.033</td>
<td>[18, 4.26]</td>
<td>.25</td>
</tr>
<tr>
<td>Peri-TEQ Guilt/Numbing-Related</td>
<td>AA &gt; W</td>
<td>.20</td>
<td>2.79</td>
<td>.86</td>
<td>3.25</td>
<td>.001*</td>
<td>[1.10, 4.48]</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.18</td>
<td>2.52</td>
<td>.81</td>
<td>3.13</td>
<td>.002*</td>
<td>[94, 4.11]</td>
<td>.36</td>
</tr>
<tr>
<td>Peri-TEQ Emotional Composure</td>
<td>AA &lt; W</td>
<td>-.14</td>
<td>-2.03</td>
<td>.90</td>
<td>-2.27</td>
<td>.024</td>
<td>[3.80, -27]</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.14</td>
<td>2.57</td>
<td>1.05</td>
<td>2.44</td>
<td>.015</td>
<td>[50, 4.65]</td>
<td>.28</td>
</tr>
<tr>
<td>CERQ Rumination</td>
<td>AA &gt; W</td>
<td>.12</td>
<td>.63</td>
<td>.32</td>
<td>1.98</td>
<td>.049</td>
<td>[003, 1.25]</td>
<td>.23</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.16</td>
<td>.79</td>
<td>.30</td>
<td>2.65</td>
<td>.009*</td>
<td>[20, 1.37]</td>
<td>.31</td>
</tr>
<tr>
<td>CERQ Putting Into Perspective</td>
<td>AA &gt; W</td>
<td>.13</td>
<td>.59</td>
<td>.29</td>
<td>2.02</td>
<td>.044</td>
<td>[02, 1.17]</td>
<td>.23</td>
</tr>
<tr>
<td></td>
<td>H &gt; W</td>
<td>.14</td>
<td>.63</td>
<td>.28</td>
<td>2.29</td>
<td>.023</td>
<td>[09, 1.17]</td>
<td>.27</td>
</tr>
<tr>
<td>CERQ Blaming of Others</td>
<td>AA &lt; W</td>
<td>-.14</td>
<td>-.88</td>
<td>.40</td>
<td>-.22</td>
<td>.027</td>
<td>[1.66, -10]</td>
<td>.26</td>
</tr>
<tr>
<td>PTCI Negative Cognitions-World</td>
<td>AA &gt; W</td>
<td>.15</td>
<td>.45</td>
<td>.19</td>
<td>2.41</td>
<td>.016</td>
<td>[08, .82]</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>AA &gt; H</td>
<td>.15</td>
<td>.44</td>
<td>.22</td>
<td>1.99</td>
<td>.047</td>
<td>[01, .87]</td>
<td>.23</td>
</tr>
<tr>
<td>TRGI Feelings of Guilt/Lack of Justification of Own Actions</td>
<td>AA &gt; W</td>
<td>.18</td>
<td>.57</td>
<td>.20</td>
<td>2.86</td>
<td>.005*</td>
<td>[.18, .96]</td>
<td>.33</td>
</tr>
<tr>
<td></td>
<td>AA &gt; H</td>
<td>.18</td>
<td>.58</td>
<td>.23</td>
<td>2.50</td>
<td>.013</td>
<td>[.12, 1.04]</td>
<td>.29</td>
</tr>
</tbody>
</table>

Note. Both standardized (\( \beta \)) and unstandardized (\( B \)) regression coefficients are reported. Unadjusted \( p \) values are reported. Asterisks indicate that \( p \) values survived FDR correction for multiple comparisons. \( SE \) = Standard Error; CI = Confidence Interval; PCL-S = PTSD Checklist - Stressor Specific; PSS-I = PTSD Symptom Scale - Interview; TEQ = Traumatic Emotions Questionnaire; CERQ = Cognitive Emotion Regulation Questionnaire; PTCI = Posttraumatic Cognitions Inventory; TRGI = Trauma-Related Guilt Inventory; AA = African American; W = non-Hispanic White; H = Hispanic/Latino; \( d \) = effect size computed using Cohen’s \( d \).

* Findings are significant at the .01 level.
exposure and higher levels of combat largely explain elevated rates of PTSD seen among African Americans (Alim et al., 2006).

Our study found differential results for PTSD symptom clusters endorsed based on type of assessment measure, with the PCL-S showing ethnoracial differences for all PTSD clusters (reexperiencing, avoidance, and arousal), whereas the PSS-I only found ethnoracial differences for reexperiencing. Indeed, others have found that people of color report greater PTSD severity on paper-and-pencil measures than with interview-based measures (Alcántara et al., 2013; Pittman, 2014). Cultural differences between the interviewer and interviewee and missing cultural aspects in PTSD diagnostic criteria could contribute to these inconsistent findings.

The current study also found that ethnoracial minority service members reported more fear-related and guilt and numbing emotions during and after the trauma than White service members, consistent with the cultural expressiveness hypothesis suggested for African Americans and Hispanic/Latinos (Alcántara et al., 2013). In addition, the current study showed that African American participants showed greater feelings of guilt regarding the lack of justification for their own actions during the traumatic event than either White or Hispanic/Latino participants. The concept of lack of justification may reflect a sense of pointlessness or cognitive dissonance about one’s actions, consistent with literature on African American Vietnam veterans wrestling with the aftermath of their battlefield actions (e.g., Ruef et al., 2000).

Lastly, the current study found ethnoracial differences in trauma-related cognitions, with both Hispanic/Latino and African American individuals being more likely to cope with stressful events through rumination and putting events into perspective, and less likely to blame others relative to White service members. The CERQ Putting Into Perspective subscale reflects a tendency to downplay the severity of events, consistent with cultural values such as caballerosim [a cultural value describing men as nurturing providers that defend the weak and live by an ethical code of chivalry (Herrera, Owens, & Mallinckrodt, 2013)] or “John Hen- ryism Active Coping,” which emphasizes determination and hard work in the face of adversity. Also, consistent with previous findings (Williams et al., 2012) in civilian samples, African American service members with PTSD endorsed greater negative cognitions about the world compared with the other two groups, which may be related to the fact that African Americans with PTSD may expect to be treated unfairly and have a history of increased exposure to violence and discrimination (Alim et al., 2006). Contrary to what was expected, service members of color did not show greater self-blame about the trauma or negative cognitions about the self than Whites.

Limitations of the current study include the use of service members with PTSD seeking treatment, which may not be generalizable to all military personnel; the use of broad ethnoracial categories, which may mask within-group differences; and the lack of specific cultural measures (e.g., values, beliefs). Future research should investigate cultural influences on PTSD, such as machismo, and culturally unique stressors, such as racism (Ruef et al., 2000). The clinical implications of this study suggest that clinicians could incorporate information about cultural differences in psychoeducation about PTSD, explore cultural variations during assessment of trauma and its aftermath, and target relevant negative cognitions during treatment.

References


Received June 24, 2016
Revision received September 29, 2016
Accepted November 6, 2016