

Psychometric Properties of the PTSD Checklist for *DSM-5* in Treatment-Seeking Black Veterans

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Objective: Despite widespread use of the posttraumatic stress disorder (PTSD) Checklist for *Diagnostic and Statistical Manual of Mental Disorders*—fifth edition (PCL-5) across various trauma-exposed populations, little is known about the psychometric properties of the instrument in certain ethnic minority groups with increased risk of trauma exposure, including Black veterans. To this end, the current study examined the internal consistency of the PCL-5, convergent validity using correlations between the PCL-5 and another measure of PTSD, and discriminant validity using correlations between the PCL-5 and other commonly occurring psychiatric symptoms, including depression as well as alcohol and substance misuse. **Method:** The sample was composed of 327 Black veterans (84% male, $M_{\text{age}} = 51.87$, $SD = 13.72$) presenting to a PTSD specialty clinic at a large Veterans Affairs hospital in the Midwest United States to receive psychological services. In addition to a diagnostic interview, veterans were asked to complete a brief battery of self-report questionnaires to assist with diagnostic clarification and treatment planning. **Results:** The PCL-5 demonstrated excellent internal consistency. Furthermore, the PCL-5 was significantly and positively correlated with PTSD diagnostic status, suggesting evidence of convergent validity. Finally, the PCL-5 was strongly correlated with symptoms of depression and moderately correlated with alcohol and substance misuse. **Conclusions:** Findings suggest that the PCL-5 is a psychometrically sound measure to assess PTSD symptoms among Black veterans. Considering the brevity of PCL-5 administration, clinicians should consider utilizing this and other psychometric tests in clinical care to reduce disparities in health equity among Black patients.

Clinical Impact Statement

The posttraumatic stress disorder (PTSD) Checklist for *Diagnostic and Statistical Manual of Mental Disorders*—fifth edition (PCL-5), arguably the most widely used self-report assessment of trauma symptoms, was found to be a psychometrically sound measure of PTSD among a sample of Black veterans. Considering the increased rates of PTSD in such populations, these findings are encouraging and extend work in this area to include racial and ethnic minority groups.

Keywords: PTSD Checklist for *DSM-5*, psychometric, Black, veterans

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Posttraumatic stress disorder (PTSD) is a debilitating psychiatric condition associated with considerable impairment in social, occupational, and familial domains (Rodríguez et al., 2012). As currently conceptualized in the *Diagnostic and Statistical Manual of Mental Disorders*—fifth edition (*DSM-5*), PTSD can develop following exposure to one or more traumatic events and is comprised of 20 symptoms classified across four related yet distinct symptom clusters, including intrusions (e.g., distressing dreams or memories related to the trauma), avoidance (e.g., avoiding people, places, or things associated with the trauma), negative alterations in cognition or mood (e.g., negative thoughts about the self, others, or the world), and hyperarousal (e.g., hypervigilance; American Psychiatric Association, 2013). The lifetime prevalence rate of PTSD is estimated at 6.1% of the general U.S. population (Goldstein et al., 2016); however, rates are higher in certain subpopulations due to their increased likelihood of trauma exposure. Indeed, past-year prevalence rates of PTSD have been estimated at 23.0% among Operation Enduring Freedom and Iraqi Freedom veterans (Fulton et al., 2015), highlighting the need for accurate assessment and treatment in such populations.

Symptoms of PTSD are commonly assessed using the PTSD Checklist for *DSM-5* (PCL-5), a 20-item self-report questionnaire designed to measure symptoms according to the *DSM-5* criteria (Weathers, Litz, et al., 2013). The PCL-5 is routinely used for screening, assigning a provisional diagnosis, and monitoring symptom change throughout treatment. Initially validated in a veteran sample, the PCL-5 has strong psychometric properties, including excellent internal consistency, convergent and discriminant validity, test–retest reliability, and sensitivity to change (Blevins et al., 2015; Bovin et al., 2016). Despite widespread use of the PCL-5 across various trauma-exposed populations (Morrison et al., 2021; Wortmann et al., 2016), little is known about its psychometric properties in certain ethnic minority groups who have increased risk of trauma exposure, including Black people. Indeed, prior psychometric research has consisted of predominately White samples, with only between 7.7% and 25.0% of participants identifying as Black/African American (Blevins et al., 2015; Bovin et al., 2016).

Importantly, research suggests that Black people are disproportionately exposed to traumatic events compared to other racial groups (Dohrenwend et al., 2008; López et al., 2017). For example, Black Americans are exposed to pervasive racial discrimination, which has been linked to increased physical and mental health concerns (Bird et al., 2021; Carter et al., 2017). As a consequence of racialized society, Black Americans may even experience certain symptoms of PTSD (e.g., hypervigilance, sleep difficulties, etc.) in the absence of a verified diagnosis due to chronic racial stress. Consequently, the risk for PTSD is higher among Black people compared to non-Hispanic White people (Alegría et al., 2013). Despite increased prevalence rates, PTSD is often underdiagnosed and untreated in this population (Roberts et al., 2011; Spont et al., 2017), highlighting the need for accurate assessment of symptoms.

While research supports the psychometric properties of the PCL-5 in myriad populations (Forkus et al., 2023), only one study to date has examined the psychometric properties exclusively among Black people. Using item response theory, Mekawi et al. (2022) assessed item difficulty and discrimination in a sample of Black adults. The authors found that flashbacks, an inability to experience positive emotions, and nightmares were the most discriminating symptoms, with the least discriminating symptoms being psychological reactivity, diminished interest, and hypervigilance. Although these results emphasize

the relative importance of certain symptoms among Black people, the authors failed to examine more traditional psychometric properties including internal consistency, and convergent and discriminant validity. Furthermore, the findings of this study may not generalize to other populations including Black veterans who may be at even greater risk for developing PTSD due to their increased risk of trauma exposure as veterans and enduring racial stress.

To this end, the current study aimed to extend research on the psychometric properties of the PCL-5 in a sample of Black veterans. Specifically, we investigated the internal consistency of the PCL-5, convergent validity using correlations between the PCL-5 total and a gold standard assessment of PTSD (i.e., Clinician-Administered PTSD Scale for *DSM-5* [CAPS-5]; when assessed continuously and dichotomously), and discriminant validity using correlations between the PCL-5 and other commonly occurring psychiatric symptoms, including depression as well as alcohol and substance misuse, given the high rates of co-occurrence of these disorders with PTSD (Pietrzak et al., 2011; Reynolds et al., 2011). Consistent with the broader psychometric literature (Forkus et al., 2023), it was hypothesized that there would be high internal consistency and strong positive correlations between the total and subscale scores of the PCL-5 and CAPS-5. Additionally, it was hypothesized that there would be a strong, positive correlation between the PCL-5 and depression and moderate, positive correlations with alcohol and substance misuse.

Method

Participants and Procedure

The sample was composed of 327 Black veterans who presented to a PTSD specialty clinic at a large Veterans Affairs (VA) hospital in the Midwest United States to receive psychological services. In addition to a diagnostic interview, veterans were asked to complete a brief battery of self-report questionnaires to assist with diagnostic clarification and treatment planning. Given that the data were collected as part of routine clinical care, informed consent for research was not obtained. However, the VA Institutional Review Board (IRB) approved the use of these data for research purposes. All research was conducted according to the ethical standards outlined by the American Psychological Association regarding human subjects.

Veterans were primarily male (84.4%), with a M_{age} of 51.87 ($SD = 13.72$). The majority of veterans identified as non-Hispanic (91.7%). Most of the sample was married (45.8%), followed by divorced (23.2%), never married (19.3%), separated (8.3%), and widowed (3.4%). With regard to service era, 30.6% of veterans served during Operation Iraqi Freedom/Enduring Freedom/New Dawn, 29.4% Vietnam, and 21.1% Gulf War, with the remaining 18.9% serving immediately before or after the Vietnam conflict. The index traumas identified for the purposes of assessing PTSD symptoms were as follows: 22.6% combat, 12.8% military sexual trauma, 1.8% adult physical or sexual assault (nonmilitary-related), 1.0% childhood physical or sexual abuse, and 61.8% other (e.g., natural disaster, motor vehicle accident, etc.).

Measures

CAPS-5

The CAPS-5 is a 30-item clinician-administered semistructured interview designed to assess current (i.e., past month) and lifetime

PTSD diagnostic status (Weathers, Blake, et al., 2013). Administration of the CAPS-5 requires the identification of an index traumatic event (i.e., a very stressful experience involving actual or threatened death, serious injury, or sexual violence). In addition to assessing the 20 *DSM-5* PTSD symptom criteria, the CAPS-5 assessed symptom onset, duration, and associated functional impairment. Each item consisted of standardized questions and probes, and responses were rated by the clinician on a 5-point severity rating scale ranging from 0 (*absent*) to 4 (*extreme*). In addition to diagnostic status (i.e., PTSD present or absent), a total score was determined by the summation of symptom severity scores for each of the 20 *DSM-5* PTSD symptoms. Furthermore, subscale scores were calculated by the summation of individual item scores corresponding to *DSM-5* symptom clusters. In the current study, the CAPS-5 was administered by predoctoral interns and licensed clinical psychologists. All interviews conducted by an intern were reviewed with a licensed psychologist during a weekly supervision meeting. Given that these interviews were administered as part of routine clinical care, no interrater reliability data were collected.

PCL-5 With Criterion A Component

The PCL-5 with Criterion A component is a 20-item self-report questionnaire designed to measure each of the 20 *DSM-5* PTSD symptom criteria (Weathers, Litz, et al., 2013). After identifying an index traumatic event, veterans were instructed to indicate their level of distress as it related to symptoms experienced within the past month. Items are rated using a 5-point Likert-type scale ranging from 0 (*not at all*) to 4 (*extremely*). Items are summed to yield a total score ranging from 0 to 80, with higher scores reflecting increased PTSD symptom severity. In addition to a total score, four subscale scores were calculated to reflect the *DSM-5* symptom clusters of PTSD. The PCL-5 has demonstrated strong psychometric properties (Blevins et al., 2015).

Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT is a 10-item self-report questionnaire developed by the World Health Organization to screen for harmful alcohol use (Saunders et al., 1993). Veterans were instructed to answer questions regarding the quantity and frequency of alcohol use-related behaviors and complications over the past year using a 5-point Likert-type scale ranging from 0 to 4. Items are summed to yield a total score (ranging from 0 to 40), with higher scores reflecting increased symptom severity. The AUDIT has been demonstrated to have strong psychometric properties (Meneses-Gaya et al., 2009). In the current study, the AUDIT displayed excellent internal consistency ($\alpha = .91$).

Drug Abuse Screening Test (DAST-10)

The DAST-10 is a 10-item self-report questionnaire designed to screen for problems related to drug use other than alcohol (Skinner, 1982). Veterans were asked to answer questions regarding drug use in the past year using binary response options (i.e., yes/no). Items are summed to create a total score (ranging from 0 to 10), with higher scores indicating increased symptom severity. The DAST-10 has been found to have strong psychometric properties (Yudko et al., 2007). In the current study, the DAST-10 demonstrated excellent internal consistency ($\alpha = .90$).

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a nine-item self-report questionnaire designed to assess depression diagnostic criteria and other leading major depressive symptoms (Kroenke et al., 2001). Veterans were asked to indicate how often they have experienced symptoms within the last 2 weeks using a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Items are summed to create a total score, with higher scores indicating increased symptom severity. The PHQ-9 has been found to have strong psychometric properties (Beard et al., 2016). In the present study, the PHQ-9 demonstrated good internal consistency ($\alpha = .86$).

Data Analysis

All analyses were conducted using IBM SPSS Statistics Version 28.0. First, data screening was performed, including running descriptive statistics to check for data entry errors, missing data, and outliers. Second, we evaluated descriptive statistics (including means and standard deviations), interitem correlations, and internal consistency for the PCL-5 total and subscale scores. Third, to examine convergent validity, we examined zero-order correlations between the PCL-5 total score and the CAPS-5 total score as well as PTSD diagnostic status. Fourth, to evaluate discriminant validity, we conducted correlations between the PCL-5 total score and the PHQ-9, AUDIT, and DAST-10 total scores.

Results

Internal Consistency

Means and standard deviations for individual PCL-5 items are presented in Table 1. The PCL-5 interitem correlation was in the moderate range ($r = .41$; range = .06–.73). The PCL-5 total score demonstrated excellent internal consistency ($\alpha = .93$). Additionally, internal consistency for PCL-5 intrusion ($\alpha = .89$), avoidance ($\alpha = .83$), negative alterations in cognitions and mood ($\alpha = .84$), and arousal ($\alpha = .82$) were good.

Convergent Validity

Means, standard deviations, skewness, kurtosis, and zero-order correlations for the PCL-5 and CAPS-5 cluster and total scores are presented in Table 2. The PCL-5 total score was significantly and positively correlated with the CAPS-5 total score and PTSD diagnostic status, suggesting evidence of convergent validity. Furthermore, all PCL-5 subscales were significantly and positively correlated with the respective CAPS-5 subscales.

Discriminant Validity

The mean PHQ-9 total score was in the moderately severe range ($M = 16.33$, $SD = 5.39$). The mean AUDIT total score was slightly below the hazardous or harmful drinking cut score ($M = 7.02$, $SD = 9.45$) of 8, whereas the mean DAST-10 total score was in the low range ($M = 1.39$, $SD = 2.53$). The PCL-5 total score was strongly correlated with the PHQ-9 ($r = .65$, $p < .001$) and moderately correlated with the AUDIT ($r = .20$, $p < .001$) and DAST ($r = .22$, $p < .001$).

Table 1
Means, Standard Deviations, and Zero-Order Correlations Among PCL-5 Items

PCL-5 item (DSM-5 symptom)—item description	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. (B1)—memories	3.00 (0.97)	—																		
2. (B2)—dreams	2.80 (1.17)	.68	—																	
3. (B3)—flashbacks	2.49 (1.22)	.67	.63	—																
4. (B4)—cued distress	3.01 (1.05)	.66	.53	.58	—															
5. (B5)—cued physical reactions	2.91 (1.08)	.62	.56	.61	.64	—														
6. (C1)—avoiding memories	2.94 (1.08)	.47	.43	.48	.49	.52	—													
7. (C2)—avoiding external reminders	2.98 (1.10)	.47	.45	.53	.47	.71	.19	—												
8. (D1)—dissociative amnesia	1.78 (1.43)	.11	.11	.19	.15	.24	.27	.34	.18	—										
9. (D2)—negative beliefs	2.61 (1.27)	.42	.34	.41	.38	.37	.34	.35	.14	.56	—									
10. (D3)—blame	2.37 (1.36)	.44	.37	.41	.43	.31	.41	.34	.18	.56	.62	—								
11. (D4)—negative feelings	2.98 (1.09)	.52	.42	.48	.50	.50	.43	.40	.20	.61	.46	.55	—							
12. (D5)—loss of interest	2.97 (1.12)	.51	.44	.45	.45	.42	.42	.45	.13	.54	.46	.67	.67	—						
13. (D6)—detachment/estrangement	3.08 (1.06)	.42	.33	.36	.43	.42	.44	.47	.19	.60	.43	.57	.73	.73	—					
14. (D7)—numbing	2.59 (1.23)	.44	.35	.42	.38	.40	.38	.40	.14	.58	.46	.54	.64	.64	.40	—				
15. (E1)—irritability or aggressive behavior	2.58 (1.28)	.47	.46	.44	.44	.43	.40	.29	.34	.11	.47	.35	.50	.47	.48	.30	—			
16. (E2)—reckless behavior	1.61 (1.38)	.26	.28	.35	.28	.31	.22	.24	.21	.43	.39	.34	.33	.33	.40	.51	.51	—		
17. (E3)—hypervigilance	3.21 (0.99)	.49	.39	.33	.51	.46	.43	.49	.10	.36	.28	.42	.47	.47	.43	.46	.37	.64	—	
18. (E4)—exaggerated startle	2.85 (1.13)	.46	.37	.46	.49	.44	.33	.38	.14	.39	.34	.46	.53	.42	.44	.52	.37	.40	.58	—
19. (E5)—concentration	2.80 (1.13)	.39	.28	.43	.33	.42	.27	.28	.23	.41	.32	.43	.51	.47	.50	.46	.39	.40	.44	.37
20. (E6)—sleep	3.35 (0.96)	.42	.46	.40	.37	.35	.31	.32	.06	.30	.19	.26	.45	.40	.41	.36	.30	.44	.37	.37

Note. PCL-5 = PTSD Checklist for DSM-5; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Discussion

Despite widespread use of the PCL-5 across various trauma-exposed populations (Forkus et al., 2023), little is known about the psychometric properties of this self-report symptom assessment in certain ethnic minority groups who have increased risk of trauma exposure, including Black people. Although prior research has examined the psychometric properties of prior versions of the PCL in Black individuals (Kibler et al., 2011), to the best of our knowledge, only one study to date has done so using an updated symptom assessment. Such an endeavor is of particular importance given the myriad of changes made to the PTSD diagnostic criteria from *DSM-IV* to *DSM-5* (Friedman, 2013), as well as research suggesting that Black people are exposed to traumatic events at disproportional rates compared to other racial and ethnic groups (Dohrenwend et al., 2008; López et al., 2017). To this end, the current study was designed to examine traditional psychometric properties of the PCL-5 using a sample of Black veterans. Specifically, we examined the internal consistency of the PCL-5, convergent validity using correlations between the PCL-5 and CAPS-5, and discriminant validity using correlations between the PCL-5 and other commonly occurring psychiatric symptom measures.

Consistent with hypothesis, PCL-5 subscale and total scores demonstrated excellent internal consistency. These findings support and extend prior research among trauma-exposed college students (Blevins et al., 2015), predominantly White veterans (Bovin et al., 2016), and Black adults (Mekawi et al., 2022). Notably, the mean PCL-5 total score was considerably higher than that observed in a previous study among a veteran population (Bovin et al., 2016), supporting research to suggest that Black people often experience a more severe and chronic course of PTSD compared to other racial groups (Sibrava et al., 2019; Steenkamp et al., 2017).

With regard to convergent validity, consistent with hypothesis and prior research (Blevins et al., 2015), PCL-5 and CAPS-5 subscales and total scores were moderately and positively correlated. The moderate strength of the correlations was expected, considering that the PCL-5 is a self-report measure while the CAPS-5 is a clinician-administered measure designed to aid in diagnostic decision making. It is possible that individuals completing the PCL-5 questionnaire may consider their symptoms to be more severe than a trained clinician, causing discrepancies between assessment scores. In addition, as with all screening measures, the PCL-5 results in a high rate of false positives. For this reason, both the PCL-5 and CAPS-5 are often administered together. Of note, not all individuals in the sample met criteria for PTSD, which could explain the somewhat weaker relationship between the PCL-5 subscale and total scores relative to PTSD diagnostic status.

As hypothesized, we also found evidence for discriminant validity, such that the PCL-5 total score had a strong, positive correlation with depression scores and moderate positive correlations with alcohol and drug use scores. These findings are consistent with prior research examining the discriminant validity of the PCL-5 with other common psychiatric symptoms (Blevins et al., 2015; Morrison et al., 2021). Furthermore, these findings are consistent with validation research by Weathers et al. (2018) who found moderate, albeit slightly stronger, correlations between PCL-5 and PHQ-9 total scores. Although this could be due to common method variance and/or shared symptoms across PTSD and depression (e.g., anhedonia and sleep difficulties), future studies should examine the

Table 2
Descriptive Statistics and Zero-Order Correlations for PCL-5 and CAPS-5 Cluster and Total Scores

Measure	M (SD)	Range	Skewness	Kurtosis	1	2	3	4	5	6	7	8	9	10
1. PCL-5 total	54.77 (15.14)	5–80	−0.80	0.58	—									
2. PCL-5 intrusions	14.20 (4.57)	0–20	−0.80	0.17	.84***	—								
3. PCL-5 avoidance	5.92 (2.01)	0–8	−0.97	0.35	.70***	.61***	—							
4. PCL-5 NACM	18.38 (6.14)	0–28	−0.83	0.36	.89***	.62***	.56***	—						
5. PCL-5 arousal	16.39 (4.99)	2–24	−0.67	0.04	.86***	.65***	.48***	.69***	—					
6. CAPS-5 total	31.98 (11.18)	1–67	−0.11	−0.01	.43***	.35***	.29***	.42***	.38***	—				
7. CAPS-5 intrusions	7.80 (3.21)	0–17	0.01	−0.16	.39***	.41***	.26***	.31***	.33***	.77***	—			
8. CAPS-5 avoidance	4.19 (1.53)	0–7	−0.42	−0.23	.23***	.19***	.21***	.20***	.21***	.69***	.56***	—		
9. CAPS-5 NACM	10.93 (5.17)	0–25	−0.04	−0.51	.37***	.24***	.26***	.44***	.28***	.88***	.50***	.50***	—	
10. CAPS-5 arousal	9.12 (3.67)	0–22	−0.12	−0.09	.35***	.28***	.19***	.31***	.38***	.83***	.54***	.49***	.61***	—
11. CAPS-5 PTSD % positive	81.00%	—	—	—	.22***	.14**	.18**	.23***	.19***	.64***	.46***	.45***	.56***	.56***

Note. PCL-5 = PTSD Checklist for DSM-5; CAPS-5 = Clinician-Administered PTSD Scale for DSM-5; NACM = Negative Alterations in Cognitions and Mood; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.
** $p < .010$. *** $p < .001$.

extent to which Black veterans present with more distress as opposed to fear-based symptoms. Indeed, using a sample of combat veterans, Miller et al. (2008) found that individuals presenting with clinically elevated PTSD displayed more symptoms on the anxious-misery factor (e.g., depression and generalized anxiety disorder) than on the fear (e.g., obsessive-compulsive disorder and panic disorder) or externalizing factors (e.g., alcohol or substance misuse).

The current study has important clinical implications worth noting. The PCL-5 appears to be a psychometrically sound measure of PTSD symptoms among Black veterans. Although encouraging, future research should consider broadening Criterion A traumatic events to incorporate race-based trauma, as such events have been found to predict traditional trauma symptoms (Roberson & Carter, 2022). Additionally, studies have demonstrated racial disparities in service-connected PTSD among veterans, such that Black veterans are less likely to receive VA disability benefits (Murdoch et al., 2003; Redd et al., 2020). Notably, when psychometric testing is utilized, this racial disparity is no longer significant (Marx et al., 2017). Considering the brevity of PCL-5 administration, clinicians should consider utilizing this and other psychometric tests in clinical care to reduce disparities in health equity among Black patients.

Findings from the current study should be interpreted within the context of several limitations. First, our sample included exclusively Black veterans who were predominately male and middle age. This may potentially limit generalizability to Black women and/or Black civilians as well as individuals of other age groups. Indeed, recent research has found that gender and age interact to predict the development of PTSD symptoms following a motor vehicle accident (Kobayashi et al., 2019). Second, differentiation between our sample (i.e., veterans living in the Midwest) and the overall VA patient population may exist, therefore limiting generalizability to other veteran samples. Future research is needed to cross-validate these findings. Third, given the cross-sectional nature of data, we were unable to examine other common psychometric properties, including test-retest reliability. Fourth, despite the use of well-validated assessments, PTSD measures have been criticized for the underidentification of certain factors (e.g., avoidance which is commonly assessed using two items) as well as redundant or underperforming items (Rasmussen et al., 2019), highlighting the need for continued research in this area. Fifth, given the specialty nature of the clinic, information on other psychiatric diagnoses outside of PTSD were not ascertained. Similarly, given the routine nature of data collection, information about other commonly co-occurring conditions were unavailable. Likewise, given that the CAPS-5 was administered for clinical and not research purposes, reliability checks were not conducted. As such, future research should seek to examine the psychometric properties of the PCL-5 using other symptom assessments and more rigorous methods as diagnostic reliability is essential for establishing validity (Chmielewski et al., 2015). Despite these limitations, this investigation extends prior research and suggests that the PCL-5 is a psychometrically sound measure to assess PTSD symptoms among Black veterans. Continued efforts validating PTSD measures are needed in order to inform diagnostic impressions and treatment efforts.

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