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Diagnostic Utility of the Posttraumatic Stress Disorder (PTSD) Checklist for Identifying Full and Partial PTSD in Active-Duty Military

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Abstract

The aim of this study was to determine optimally efficient cutoff scores on the Posttraumatic Stress Disorder Checklist (PCL) for identifying full posttraumatic stress disorder (PTSD) and partial PTSD (P-PTSD) in active-duty Marines and Sailors. Participants were 1,016 Marines and Sailors who were administered the PCL and Clinician-Administered PTSD Scale (CAPS) 3 months after returning from Operations Iraqi and Enduring Freedom. PCL cutoffs were tested against three CAPS-based classifications: full PTSD, stringent P-PTSD, and lenient P-PTSD. A PCL score of 39 was found to be optimally efficient for identifying full PTSD. Scores of 38 and 33 were found to be optimally efficient for identifying stringent and lenient P-PTSD, respectively. Findings suggest that the PCL cutoff that is optimally efficient for detecting PTSD in active-duty Marines and Sailors is substantially lower than the score of 50 commonly used by researchers. In addition, findings provide scores useful for identifying P-PTSD in returning service members.

Keywords

PCL, CAPS, PTSD, military, Marines, Sailors, subthreshold

One of the most commonly used instruments for assessing posttraumatic stress disorder (PTSD) in the military is the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993), a 17-item self-report questionnaire that has been shown to have excellent psychometric properties (see Wilkins, Lang, & Norman, 2011, for a recent review). However, with the exception of one study, the diagnostic utility of the PCL has not been evaluated in an active-duty military context. Consequently, most research investigating the prevalence of PTSD in the military has relied on diagnostic cutoff scores derived from studies of civilians or veterans with chronic PTSD (e.g., Hoge et al., 2004; Kim, Thomas, Wilk, Castro, & Hoge, 2010; Schneiderman, Braver, & Kang, 2008; Thomas et al., 2010). It is unclear whether these cutoffs generalize to active-duty personnel, particularly given the reluctance service members often have about reporting mental health problems (Hoge et al., 2004; Kim et al., 2010).

Recently, a new iteration of the PCL, the PCL-5, was developed to coincide with the publication of the *Diagnostic and Statistical Manual of Mental Disorders, fifth edition* (*DSM-5*; American Psychiatric Association, 2013). Although the revised measure will ultimately replace the PCL for *DSM-IV* (American Psychiatric Association, 1994), research on the original remains important, as these efforts guide retrospective analysis of archival data, including data collected from service members who deployed throughout Operations Iraqi Freedom, Enduring Freedom, and New Dawn (OIF/OEF/OND). Moreover, until further research is conducted on the PCL-5, therapists may find the PCL for *DSM-IV* a more informative clinical instrument.

Bliese et al. (2008) attempted to redress the problem of the military's reliance on diagnostic cutoffs derived from civilian

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and veteran samples. They collected PCL data from active-duty soldiers 3 months after participants returned from serving in OIF and OEF and validated them against the structured clinical PTSD assessment module of the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998). Their diagnostic utility analyses showed that cutoff values between 30 and 34 were the most efficient for detecting MINI-based PTSD cases, an important finding given the substantially higher cutoff of 50 found to be optimally efficient in previous studies with Vietnam War veterans (Forbes, Creamer, & Biddle, 2001; Weathers et al., 1993).

However, two methodological aspects of Bliese et al.'s (2008) study may limit the generalizability of their findings. First, the use of the MINI as the diagnostic criterion is a potential limitation because it is not widely employed as a measure of PTSD and has not been validated against the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995), which has excellent psychometric properties and is considered the gold standard for PTSD assessment (Keane, Street, & Stafford, 2004; Weathers, Keane, & Davidson, 2001; Weiss, 2004). Second, Bliese et al. validated the PCL in a sample of soldiers who screened positive for possible behavioral health problems during a first-stage assessment. Nearly half (49.5%) of potential participants screened negative and as a result were not administered the MINI or included in utility analyses. Thus, it is unclear whether the cutoff scores identified are useful for identifying cases of PTSD in unrestricted samples of active-duty personnel (e.g., in screening contexts or epidemiological studies).

In this study, we sought to expand on the findings reported by Bliese et al. (2008) and fill gaps in the associated literature. To do so, we evaluated the diagnostic utility of the PCL in a large cohort of active-duty Marines and Sailors who were deployed to OIF/OEF. Using the CAPS for *DSM-IV* as the criterion, our aim was to determine optimally efficient cutoff scores for diagnosing PTSD. We chose to focus primarily on diagnostic efficiency, as it is a measure of test performance that represents a balance between high sensitivity (which minimizes the likelihood of false negatives) and high specificity (which minimizes the likelihood of false positives) and can be interpreted as the extent to which test results are accurate overall. Whereas a highly sensitive test is most appropriate for screening purposes (100% sensitivity ensures that all positive cases are identified), and a highly specific test is most appropriate for diagnostic confirmation (100% specificity ensures that a positive test is never wrong), a highly efficient test maximizes the overall accuracy and is thus optimal for differential diagnosis. Given service members' concerns about reporting mental health problems, as well as the relatively low cutoffs found by Bliese et al. (2008), we hypothesized that the optimally efficient cutoffs identified in our study would fall below 50.

In addition to determining PCL cutoffs for full PTSD, we also were interested in determining cutoffs for partial PTSD (P-PTSD). Also referred to as subthreshold or subsyndromal PTSD (Mylle & Maes, 2004; Zlotnick, Franklin, & Zimmerman, 2002), P-PTSD is associated with increased risk for delayed PTSD and comorbid disorders (Marshall et al., 2001; Pietrzak, Goldstein, Malley, Johnson, & Southwick, 2009), as well as higher levels of functional impairment, including occupational, relationship, and health problems (Breslau, Lucia, & Davis, 2004; Mylle & Maes, 2004; Pietrzak et al., 2009; Zlotnick et al., 2002). Furthermore, returning veterans with P-PTSD report similar rates of suicidal ideation, hopelessness, and aggressive acts as those with full PTSD (Jakupcak et al., 2007). Given the functional impairments associated with P-PTSD, the military considers it a stress injury, a psychological state falling between normal levels of stress reactions and stress-related illnesses such as PTSD (e.g., the Navy-Marine Corps Stress Continuum Model; Nash, 2011). It is assumed that if stress injuries are not adequately addressed, performance and mission-readiness are compromised. Because satisfactory recovery requires a combination of institutional support, social support, and formal intervention, it is critical that P-PTSD be accurately identified among service members (Litz, Steenkamp, & Nash, in press). To date, however, there is no consensus definition for P-PTSD. Thus, to examine the impact of adopting different definitions of P-PTSD, we employed lenient and stringent definitions and conducted separate diagnostic utility analyses for each.

Method

Procedure

Data were collected as part of the Marine Resiliency Study (MRS), a longitudinal project examining risk and resiliency factors among active-duty U.S. Marines and Sailors deploying to OIF/OEF. Assessments were conducted prospectively at one of two Marine bases located in southern California. Participation entailed completing a comprehensive battery of biopsychosocial measures, including self-report forms and structured diagnostic interviews (see Baker et al., 2012, for an overview of study procedures). Interviews were administered by master's and doctoral level clinicians with extensive psychological assessment training, and a subset of interviews were independently rated by a second study clinician to evaluate interrater reliability. The data analyzed in the present study were collected from four separate cohorts of Marines and Sailors who completed assessments at approximately 3 months postdeployment (i.e., 3 months after participants returned to the United States). Data collection took place between June, 2009 and September, 2011. Written informed consent was obtained from all study participants, and the Institutional Review Boards at the University of California, San Diego, the San Diego and Boston VA Healthcare

Table 1. Characteristics of the Study Sample.

Measure	*n*	%	*M*	*SD*
Age (years)			23.36	3.40
Race/ethnicity				
American Indian/Alaskan	15	1.5		
Asian American	26	2.6		
Black/African American	37	3.7		
Hawaiian/Pacific Islander	13	1.3		
Hispanic/Latino	233	23.1		
White	653	64.8		
Multiracial/other	31	3.1		
Military rank				
E1-E3	664	65.5		
E4-E5	283	27.9		
E6-E9	42	4.1		
O1-O3	20	2.0		
Warrant or field officer	4	0.4		
Education				
Some high school	26	2.6		
GED	20	2.0		
High school diploma	621	61.5		
Some college	284	28.1		
Associates degree	20	2.0		
4-year college degree	33	3.3		
Master's degree	5	0.5		
Marital status				
Never married	588	58.0		
Married	389	38.4		
Divorced/separated	36	3.6		
Time in military (years)			3.14	2.75
Previously deployed	440	43.5		
Number of deployments			1.46	0.96

Note. N = 1,016. Valid percentages reported.

Systems, and the Naval Health Research Center, San Diego approved all study procedures and materials.

Participants

Participants were 1,016 male, active-duty U.S. Marines and Sailors who had recently returned from serving in OIF/OEF (women were not included in our sample as all participants were members of infantry battalions). Assessments were conducted at approximately 3 months postdeployment; on average, participants had been back in the United States 98.58 days (*SD* = 14.50). Participant demographics are presented in Table 1.

Measures

Self-reported PTSD symptoms were assessed immediately following completion of the CAPS interview using the PTSD Checklist–Specific Version (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993), a 17-item measure assessing each symptom of PTSD contained in the *DSM-IV*. The PCL-S is one of three versions of the PCL, which differ only in terms of the index event to which symptoms are linked. Unlike the PCL civilian and military versions (PCL-C and PCL-M), which instruct individuals to link symptoms to "stressful experiences" and "stressful military experiences" respectively, the PCL-S is linked to a specific index event (in this case, the same index event that was used during participants' CAPS interviews). Consequently, the PCL-S may be more likely to capture PTSD and discriminate it from other forms of psychopathology than the PCL-C and PCL-M (Wilkins et al., 2011). The PCL-S has strong psychometric properties and is widely used by trauma researchers and clinicians (e.g., Wilkins et al., 2011). Internal consistency was high in the current sample, with a Cronbach's alpha of .90.

In addition, anxiety and depressive symptoms were assessed using the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) and Beck Depression Inventory–II (BDI-II; Beck, Steer, & Brown, 1996). These measures were included in the diagnostic utility analyses to provide a comparison for the performance of the PCL. The BAI and BDI-II are widely used and have been extensively tested and validated (e.g., Beck & Steer, 1991; Beck & Steer, 1993; Dozois, Dobson, & Ahnberg, 1998; Hewitt & Norton, 1993; Osman, Kopper, Barrios, Osman, & Wade, 1997). Both the BAI and BDI-II demonstrated high internal consistency in the current sample, each with an alpha of .92. To examine levels of functioning across diagnostic groups (i.e., full PTSD and lenient and stringent P-PTSD), we administered the World Health Organization–Disability Assessment Schedule II–Short Version (WHODAS-II Short Version; Smith & Epping-Jordan, 2000), a 12-item measure assessing a wide range of functional domains, including social and occupational functioning. Internal consistency was high, with an alpha of .91.

PTSD symptoms were also measured using the CAPS (Blake et al., 1995), a structured diagnostic interview assessing all *DSM-IV* criteria for PTSD. The CAPS assesses the frequency and intensity of PTSD symptoms on separate 5-point (0-4) rating scales. Consistent with previous recommendations (e.g., Weathers, Ruscio, & Keane, 1999), symptoms were considered present if they had occurred at least once within the past month and with at least moderate intensity (i.e., the "Frequency 1/Intensity 2" rule). Internal consistency, based on item severity scores (frequency plus intensity), was high, with an alpha of .81. Interrater reliability was previously evaluated in another MRS study using intraclass correlation coefficients and found to be high (see Yurgil et al., 2014).

Three criterion variables were computed for the purposes of this study, full PTSD and stringent and lenient

P-PTSD. For full PTSD, participants needed to endorse a sufficient number of symptoms to satisfy all *DSM-IV* criteria, that is, one criterion B symptom (re-experiencing), three criterion C symptoms (avoidance and numbing), and two criterion D symptoms (hyperarousal). For stringent P-PTSD, participants needed to endorse a minimum of one criterion B, two criterion C, and two criterion D symptoms (i.e., the same criteria as full PTSD save one criterion C symptom). For lenient P-PTSD, participants needed to endorse a minimum of one criterion B symptom plus three criterion C or two criterion D symptoms (i.e., participants did not need to endorse symptoms in all three clusters). Although numerous scoring rules have previously been used to operationalize P-PTSD, the current rules were selected based on their past use in the research literature, as well as their documented association with functional impairment (e.g., Adams, Boscarino, & Galea, 2006; Mylle & Maes, 2004; Pietrzak et al., 2009; Schnyder, Moergeli, Klaghofer, & Buddeberg, 2001). Given evidence that fear, helplessness, or horror are variably reported, and are less commonly endorsed by males in response to traumatic events (Creamer, McFarlane, & Burgess, 2005; O'Donnell, Creamer, McFarlane, Silove, & Bryant, 2010; Karam et al., 2010; Pereda & Forero, 2012), criterion A2 was not factored into the computation of our PTSD variables (criteria A1, E, and F were met by all participants assigned a diagnosis).

Data Analysis

A series of preliminary analyses were conducted to (a) determine the prevalence associated with each diagnostic scoring rule (full PTSD, lenient P-PTSD, stringent P-PTSD) and examine differences in functional impairment across groups; (b) obtain descriptive information for self-report measures (i.e., the PCL-S, BDI-II, and BAI) for purposes of comparison with other populations (i.e., to determine if symptom underreporting may be an issue in the current sample); and (c) obtain a nonparametric smoothing regression curve (i.e., a loess curve; Jacoby, 2000) to examine the relationship between participants' PCL-S scores and their total number of CAPS symptoms met (i.e., determine the extent to which this relationship is continuous). Loess (locally weighted scatterplot smoothing) can be used to fit a regression curve to scatterplot data without a priori specification of shape. SPSS defaults were used for smoothing parameters (an Epanechnikov kernel, 50% of data points incorporated). SPSS version 21.0 was used for all preliminary analyses. No participants were missing data on the PCL, BDI-II, BAI, or CAPS. Kraemer's signal detection methodology (Kraemer, 1987, 1992) was then used to evaluate the utility of the PCL in predicting full and partial PTSD.

Kraemer's approach involves calculation of measures of test performance, including sensitivity, specificity, efficiency, and positive and negative predictive values, as well as corresponding measures of test quality, which are weighted kappa coefficients that adjust for chance agreement between the test and criterion. Measures of test quality are unambiguous, calibrated indicators with endpoints ranging from .00, reflecting chance agreement between test and criterion, to 1.00, indicating perfect agreement. They allow identification of optimally sensitive cutoff scores, which minimize false negatives and thus are ideal for screening; optimally specific cutoffs, which minimize false positive and thus are ideal for confirmatory tests; and optimally efficient cutoff scores, which maximize agreement between test and criterion and thus are ideal for differential diagnosis. In the present study the focus was on optimally efficient tests. Because there are no absolute standards regarding acceptable test efficiency, the BDI-II and BAI were included to provide a basis of comparison. Following Kraemer's (1987) recommend-dation, all cutoffs examined were observed in at least 10 participants.

Results

Prevalence of full PTSD was 4.1% (n = 42). As expected, prevalence was higher for stringent P-PTSD (6.2%; n = 63) and highest for lenient P-PTSD (11.1%; n = 113). To examine differences in functioning across diagnostic groups, we conducted a one-way analysis of variance with Tukey post hoc comparisons. Post hoc comparisons revealed that, relative to participants with no diagnosis, Marines and Sailors in the lenient P-PTSD, stringent P-PTSD, and full PTSD groups scored significantly higher on the WHODAS-II (according to both ANOVA and Kruskal-Wallis tests), suggesting that the diagnostic scoring rules used in the current study are associated with significant functional impairment (see Table 2).

Descriptive information for the PCL-S, BDI-II, and BAI was as follows: participants' mean score on these measures was 22.37 (SD = 8.00; range = 17-67), 4.72 (SD = 6.73; range = 0-50), and 4.51 (SD = 7.04; range = 0-57), respectively. With regards to the frequency of minimum scores, 365 (35.9 %), 366 (36.0%), and 429 (42.2 %) participants reported the lowest possible score on each measure, respectively. Results from a nonparametric smoothing regression curve (Figure 1) demonstrate a continuous, positive relationship between participants' PCL-S scores and the number of PTSD symptoms met on the CAPS.

Signal detection results are presented in Table 3. Across all three diagnostic criteria the PCL demonstrated substantially higher quality of efficiency than did the BDI-II and BAI. With regards to cutoffs, PCL scores of 39, 38, and 33 were found to be optimally efficient for detecting full PTSD, stringent P-PTSD, and lenient P-PTSD, respectively.

Table 2. Means and Standard Deviations of Functioning According to Diagnostic Scoring Rule.

	No PTSD/P-PTSD, *M* (*SD*)	Lenient P-PTSD, *M* (*SD*)	Stringent P-PTSD, *M* (*SD*)	Full PTSD, *M* (*SD*)	*F* (*df*)
n (%)	903 (88.9)	50 (4.9)	21 (2.1)	42 (4.1)	
WHODAS	13.76 $(4.04)_a$	15.93 $(5.56)_b$	18.43 $(8.85)_b$	17.67 $(6.75)_b$	20.58 (3, 1012)***

Note. PTSD = posttraumatic stress disorder; P-PTSD = partial posttraumatic stress disorder; WHODAS = World Health Organization Disability Assessment Schedule–II Short Version. Means with different subscripts differ significantly at $p < .01$. Valid percentages reported.
*** $p < .001$.

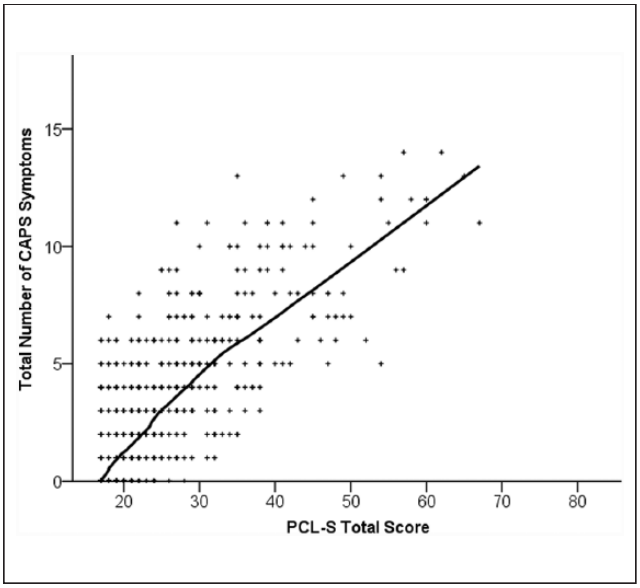

Figure 1. A nonparametric loess smoothing curve depicting the relationship between participants' scores on the PTSD Checklist–Specific Version (PCL-S) and their total number of PTSD symptoms, as determined using the Clinician Administered PTSD Scale (CAPS). Symptoms were considered present on the CAPS if they had occurred at least once within the past month and with at least moderate intensity.

Measures of test performance and quality for PCL cutoffs ranging from 30 to 50 for predicting full PTSD are presented in Table 4.

Discussion

Signal detection analysis was used to examine the diagnostic utility of the PCL among 1,016 MRS participants assessed at 3 months following return from deployment to OIF/OEF. To our knowledge, only one previous study (Bliese et al., 2008) has tested the diagnostic utility of the PCL in an active-duty population. Analyses revealed that a PCL cutoff score of 39 was optimally efficient for identifying full PTSD. Although this score is somewhat higher than the optimally efficient cutoffs (30-34) identified by Bliese et al., it is substantially lower than the cutoff of 50 found in previous studies conducted with Vietnam War veterans (Forbes et al., 2001; Weathers et al., 1993) and reaffirms that different cutoff values are indicated for identifying PTSD among active-duty versus veteran populations.

The lower diagnostic cutoff found in this study may reflect an unwillingness on the part of active-duty service members to report mental health problems due to concerns such as being stigmatized or being denied opportunities for advancement (Gorman, Blow, Ames, & Reed, 2011; Hoge et al., 2004; Kim et al., 2010). Such a response bias could affect scores on both the PCL and CAPS, lowering test scores and prevalence and thereby lowering the optimally efficient cutoff. Consistent with this hypothesis, self-report scores were highly positively skewed, and there was a preponderance of minimum values. Whereas the mean PCL-S score in our sample was 22.37, higher PCL means have been found in other published unrestricted samples, including in Persian Gulf War veterans (M = 34.77; Weathers et al., 1993).

Regardless of the reasons for the lower test scores in this sample, it appears that a PCL cutoff of 50 is too high for identifying PTSD among active-duty service members returning from combat. We found a cutoff of 50 to have markedly lower quality of sensitivity relative to other cutoffs (Table 4), indicating that its use would result in a high rate of false negatives (i.e., a large number of unidentified cases). Based on these findings and the findings of Bliese et al. (2008), it appears that a self-reported PCL score in the mid- to upper-thirties is more appropriate for identifying PTSD in this population. It is noteworthy, however, that the level of sensitivity associated with a cutoff score of 39 (Sens = .60) was still relatively low, indicating that its use could result in a considerable number of false negatives. Thus, for screening purposes, a lower cutoff appears indicated.

In addition to identifying optimally efficient cutoff scores for detecting full PTSD, we also sought to identify cutoffs indicative of P-PTSD, a condition associated with functional impairment and increased risk for suicidal ideation (e.g., Marshall et al., 2001). To achieve this, we used two P-PTSD classifications, lenient P-PTSD and stringent P-PTSD, which meaningfully differentiated participants' functional impairment. Cutoffs of 33 and 38 were optimally

Table 3. Diagnostic Utility of Optimally Efficient Cutoff Scores on the PTSD Checklist, Beck Depression Inventory, and Beck Anxiety Inventory for Predicting Full PTSD, Stringent Partial PTSD, and Lenient Partial PTSD Diagnostic Status Based on CAPS F1/I2 Scoring Rule (*N* = 1,016).

Measure (cutoff score)	Level (%)	Sens	Spec	PPV	NPV	Eff	κ(0)	κ(.5)	95% CI	κ(1)
Full PTSD (Base rate = 4.1%)										
PTSD Checklist total (39)	5.0	.60	.97	.49	.98	.96	.47	.52	.39-.64	.57
Beck Depression Inventory (14)	9.7	.62	.93	.26	.98	.91	.23	.33	.23-.43	.58
Beck Anxiety Inventory (18)	5.5	.31	.96	.23	.97	.93	.20	.23	.11-.35	.27
Stringent P-PTSD (Base rate = 6.2%)										
PTSD Checklist total (38)	6.0	.56	.97	.57	.97	.95	.55	.54	.43-.65	.53
Beck Depression Inventory (14)	9.7	.52	.93	.33	.97	.91	.29	.36	.26-.46	.47
Beck Anxiety Inventory (13)	10.4	.43	.92	.25	.96	.89	.21	.26	.17-.36	.36
Lenient P-PTSD (Base rate = 11.1%)										
PTSD Checklist total (33)	9.7	.58	.96	.66	.95	.92	.61	.57	.48-.65	.53
Beck Depression Inventory (11)	14.9	.50	.90	.38	.94	.85	.30	.35	.27-.43	.42
Beck Anxiety Inventory (13)	10.4	.35	.93	.38	.92	.86	.30	.29	.20-.38	.28

Note. Values rounded to decimal places shown. Level = level of test (i.e., percentage of participants meeting cutoff); PTSD = posttraumatic stress disorder; Sens = sensitivity; Spec = specificity; PPV = positive predictive value; NPV = negative predictive value; Eff = efficiency; CI = confidence interval; κ (0) = quality of specificity; κ (.5) = quality of efficiency; κ (1) = quality of sensitivity. Confidence intervals provided for κ (.5). Measures of test quality are adjusted for chance agreement between the test and criterion. These values range from .00 (chance agreement) to 1.00 (perfect agreement).

Table 4. Diagnostic Utility of Alternative Cutoff Scores on the PTSD Checklist for Predicting Full PTSD Diagnostic Status.

Cutoff	Sens	Spec	PPV	NPV	Eff	κ(0)	κ(.5)	κ(1)
30	.81	.89	.24	.99	.88	.20	.32	.78
31	.81	.90	.26	.99	.90	.23	.35	.78
32	.79	.92	.29	.99	.91	.26	.39	.76
33	.79	.93	.33	.99	.93	.30	.44	.76
34	.79	.94	.35	.99	.93	.32	.45	.76
35	.76	.95	.38	.99	.94	.35	.48	.74
36	.71	.96	.42	.99	.95	.39	.50	.69
37	.67	.96	.43	.99	.95	.41	.50	.64
38	.64	.97	.44	.98	.95	.42	.50	.62
39	.60	.97	.49	.98	.96	.47	.52	.57
40	.52	.97	.47	.98	.96	.45	.47	.50
41	.52	.98	.49	.98	.96	.47	.48	.50
42	.48	.98	.50	.98	.96	.48	.47	.45
43	.45	.98	.53	.98	.96	.51	.47	.43
44	.45	.98	.56	.98	.96	.54	.48	.43
45	.43	.98	.55	.98	.96	.53	.46	.41
46	.36	.99	.56	.97	.96	.54	.42	.34
47	.36	.99	.58	.97	.96	.56	.42	.34
48	.31	.99	.59	.97	.96	.57	.39	.29
49	.29	.99	.60	.97	.96	.58	.37	.27
50	.24	.99	.59	.97	.96	.57	.32	.23

Note. Values rounded to decimal places shown. PTSD = posttraumatic stress disorder; Sens = sensitivity; Spec = specificity; PPV = positive predictive value; NPV = negative predictive value; Eff = efficiency; κ(0) = quality of specificity; κ(.5) = quality of efficiency; κ(1) = quality of sensitivity. Measures of test quality are adjusted for chance agreement between the test and criterion. These values range from .00 (chance agreement) to 1.00 (perfect agreement).

efficient for detecting lenient P-PTSD and stringent P-PTSD, respectively. Given that stringent P-PTSD differed from full diagnostic status by only one Criterion C symptom, it is not surprising that the stringent P-PTSD cutoff was very similar to that suggesting full PTSD.

Clinicians and researchers hoping to apply study results should be mindful of the purpose for which cutoffs are being used. In situations where it is preferred that fewer PTSD or P-PTSD cases go undetected, lower identified cutoff values are indicated. Conversely, in situations where it is preferred that false positives be minimized, higher cutoffs are recommended. Additionally, individuals wishing to use cutoffs for screening or diagnostic confirmation purposes should be mindful that optimally efficient cutoffs may have relatively poor sensitivity or specificity. As no absolute standards exist regarding “acceptable” sensitivity, it is necessary to adjust cutoffs to meet the needs of particular populations in particular contexts.

There are several important limitations to our study. Although our sample is large and likely representative of Marine Corps and Navy personnel, it is not a stratified random subgroup of Marines and Sailors and does not include female service members, which may affect generalizability. Similarly, our results are based on cutoff scores on the PTSD Checklist–Specific Version (PCL-S), which although highly similar to other versions of the PCL, may be better able to discriminate PTSD from other forms of psychopathology due to differences in instruction set (Wilkins et al., 2011). Of note, administration of the CAPS and PCL was not counter-balanced, and administering the PCL immediately following the CAPS may partly explain why it outperformed the BDI-II and BAI across all diagnostic utility analyses. In addition, a relatively low base rate of PTSD was observed in the current sample, which may have affected diagnostic utility results. Finally, it is important to note that, due to time constraints, comprehensive diagnostic interviews could not be administered, precluding assessment of comorbid psychological conditions.

Limitations notwithstanding, our study makes several important contributions. Most notably, this is only the second study to examine the diagnostic utility of the PCL in an active-duty population, and the first to validate the PCL among active-duty Marines and Sailors. In addition, this is the first study to examine the diagnostic utility of the PCL in any active-duty population using the CAPS, widely considered the gold standard for PTSD assessment, as the diagnostic criterion. As hypothesized, active-duty personnel appeared more likely to underreport PTSD symptoms on the PCL, thus making it important to use lower diagnostic cutoff scores. These findings will help guide indicated prevention efforts within the military and assist researchers and epidemiologists more accurately estimate rates of PTSD and P-PTSD, particularly when conducting archival analysis of data collected from active-duty service members prior to *DSM-5*. Study findings also have important implications for the validation and use of the PCL-5, namely that it be evaluated separately in active-duty and Veteran populations and that screening efforts take into account the possibility of underreporting by using cutoffs demonstrating high sensitivity. Last, while beyond the scope of this article, these findings call attention to the impact of active-duty status on the diagnostic utility of self-report assessment more generally and the extent to which self-report screeners can adequately differentiate service members’ diagnostic status. Further research is needed to address these concerns and generate recommendations for optimizing the efficiency of early PTSD and P-PTSD detection.

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