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Abbreviated PTSD Checklist (PCL) as a guide to clinical response☆

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Abstract

Objective: The objective of this study was to evaluate two abbreviated versions of the PTSD Checklist (PCL), a self-report measure of posttraumatic stress disorder (PTSD) symptoms, as an index of change related to treatment.
Method: Data for this study were from 181 primary care patients diagnosed with PTSD who enrolled in a large randomized trial. These individuals received a collaborative care intervention (cognitive behavioral therapy (CBT) and/or medication) or usual care and were followed 6 and 12 months later to assess their symptoms and functioning. The sensitivity of the PCL versions (i.e., full, two-item, six-item), correlations between the PCL versions and other measures, and use of each as indicators of reliable and clinically significant change were evaluated.
Results: All versions had high sensitivity (.92–.99). Correlations among the three versions were high, but the six-item version corresponded more closely to the full version. Both shortened versions were adequate indicators of reliable and clinically significant change.
Conclusion: Whereas prior research has shown the two-item or six-item versions of the PCL to be good PTSD screening instruments for primary care settings, the six-item version appears to be the better alternative for tracking treatment-related change.
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Keywords: PTSD; Assessment; Primary care

1. Introduction

General medical clinics are an important arena in which to identify and treat patients with emotional disorders. Many patients with mental health disorders never seek care in specialty settings [1,2]. For instance, from August 2006 to July 2007, 59% of psychotropic medications were prescribed by general practitioners, obstetrician–gynecologists and pediatricians [3]. Given that much of the burden of treating mental health problems rests with generalists, it is important that there be appropriate tools to support their efforts.

Best practices for treatment of posttraumatic stress disorder (PTSD) involve regular tracking of symptom changes [4]. Within the Veterans Administration, for example, the PTSD Checklist (PCL) is required as an outcome measure for veterans in active treatment for PTSD [5]. The PCL [6] is a well-established self-report measure of

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PTSD symptoms with good psychometric properties [7]. PCL items map directly onto PTSD symptoms in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) [8] and ask respondents to rate the degree to which they were bothered by symptoms related to a stressful experience in the past month on a 1–5 scale. The PCL is widely used in mental health settings to quantify PTSD symptoms or come to a presumptive diagnosis [9]. Three PCL versions exist and differ with regard to the event they are anchored to and the wording describing the event. The PCL-military (PCL-M) anchors items to "stressful military experiences." The PCL-civilian (PCL-C) anchors items to "stressful experiences." The PCL-specific (PCL-S) is anchored to a specific traumatic event.

At 17 items, the full PCL may not be viable for repeated use in a general medical setting where appointment times are short and multiple issues are often tracked in a single visit. We previously developed two-item (PCL-2) and six-item (PCL-6) versions of the PCL-C to be used as a brief screening tool in primary care [10]. Because of their brevity, it would be desirable to use these measures to track response to treatment, but there are no data to support their use in this manner at this time.

The original PCL appears to be sensitive to treatment-related change. Forbes and colleagues [11] compared the PCL-M to the Clinician Administered PTSD Scale (CAPS) [12], which is considered by many to be the "gold standard" PTSD assessment tool [13], before and 9 months after treatment. They found that the effect size detected by the CAPS was greater than that detected by the PCL and that the correlations between the measures were greater at the initial assessment than after treatment. Monson and colleagues [14] compared change on the PCL-M and CAPS in two intervention trials. In contrast to Forbes et al., [11], Monson et al. [14] found more pronounced change on the PCL. Thus, the PCL appears to detect treatment-related change, but whether it overestimates or underestimates change relative to a clinician interview is unclear. Our interest, however, is to know whether or not the PCL's ability to detect change is preserved in the abbreviated versions. In addition, we were interested in the extent to which change on the symptom measure corresponded to changes in functioning or quality of life, which are arguably important ways of evaluating how a treatment is impacting a patient [15,16].

2. Methods

2.1. Participants

The Coordinated Anxiety Learning and Management (CALM) study was a large randomized trial of collaborative care for anxiety disorders [17]. Participants were recruited from 17 primary care clinics in Southern California; Seattle, WA; and Little Rock, AR. Clinics were selected for diversity of the patient population. The enrolled sample included 1004 primary care patients with panic disorder, social anxiety disorder, generalized anxiety disorder and/or PTSD enrolled between June 2006 and April 2008; many patients had more than one anxiety disorder and/or comorbid depression. Exclusions were for serious alcohol or drug use, unstable medical conditions, marked cognitive impairment, active suicidal intent or plan, psychosis or bipolar I disorder. Patients already receiving cognitive behavioral therapy, without routine access to a telephone, or who could not speak English or Spanish also were excluded. All subjects gave informed, written consent to participate in this study, which was approved by each of the institutions' respective Institutional Review Boards. The analyses herein are limited to the 181 patients who were diagnosed with PTSD at the initial assessment because the PCL was administered only to patients with an initial diagnosis of PTSD.

2.2. Procedures

Potentially eligible patients completed a semistructured diagnostic interview with a trained clinician to establish study eligibility. Consenting, eligible participants who completed a baseline questionnaire were randomized by The RAND Corporation (Santa Monica, CA) to usual care or an intervention, coordinated anxiety learning and management (CALM) [see 17] which offered cognitive behavioral therapy (CBT) and/or medication in a collaborative care framework. RAND conducted additional assessments before and 6, 12 and 18 months after the treatment period; data from the 6- and 12-month assessments are used herein.

2.3. Measures

The Mini International Neuropsychiatric Interview [18], a reliable and valid diagnostic clinician interview [19], was used to establish initial mental health diagnoses. The interview was conducted by a trained clinician (six social workers, five registered nurses, two masters-level psychologists and one doctoral-level psychologist) and was reviewed by a supervising psychologist.

The PCL-C (PCL) [20] is a 17-item self-report measure mapping directly onto DSM-IV criteria [8]. The PCL is a well-established self-report measure of PTSD symptoms with good reliability and validity [7].

The Overall Anxiety Severity and Impairment Scale (OASIS) [21] is a five-item self-report measure of severity and impairment associated with any anxiety disorder. The psychometric properties of the instrument were established with this study [21]. OASIS scores were followed during treatment, and a drop in the OASIS was used as a signal to end treatment. For this reason, OASIS scores were not used as an outcome variable herein.

Version 2 of the Short-Form Health Survey-12 item (SF-12) [22] is 12-item self-report measure that represents a reliable and valid subset of items from the 36-item Short-Form Health Survey [23–25]. The SF-12 queries about participants' health and how they feel they are able to engage in usual activities. It results in two summary components: a

mental component scale (MCS) and a physical health component scale (PCS) [22].

The Sheehan Disability Scale (SDS) [26] is a three-item measure of impairment in work, social and family settings. The reliability and validity are good, and the scale has been shown to reflect treatment-related change [27].

2.4. Analyses

We engaged in several steps to assess the performance of the PCL and its abbreviated versions in this sample. First, we examined the sensitivity, or the proportion of cases for which patients with a PTSD diagnosis are correctly detected by the measures [i.e., true positive/(true positive+false negative)]. Because the PCL was administered only to patients with PTSD, specificity, or the proportion of cases for which PTSD is correctly determined not to be present, could not be assessed.

Next, we were interested in the way that these measures performed when used over time. We calculated correlations among the three lengths of the PCL at all three time points and then examined the correlations between the PCL versions and indicators of functioning over time. We also assessed the magnitude of the correlation between the full PCL and other measures controlling for the abbreviated forms to determine whether or not the full PCL added additional information beyond what was conveyed in the shortened measure [28]. If the magnitude of the correlation was greatly reduced or if the correlation no longer reached significance, this was seen as evidence that the abbreviated version captured meaningful variance.

In addition, we assessed the effect size (Cohen's *d*) of the change in PTSD symptoms in the intervention and usual care groups as measured by the full PCL and the abbreviated versions. This allowed us to compare the effect size estimates generated by each version.

Finally, we were interested in evaluating the thresholds for reliable (i.e., not due to chance) and clinically significant change for the abbreviated versions. Following the Jacobson and Truax [29] method, we calculated a reliable change index using reliability estimates from the two samples in our previous work [30] and from this sample. Similarly, we established thresholds based on our previous work to assess the detection of clinically significant change. Using Jacobson and Truax's [29] criterion *c*, clinically significant change would be indicated by change of 4.7–5.3 on the PCL-2 and 14.4–15.6 on the PCL-6.

3. Results

3.1. Participants

The average age of this sample was 44.4 (S.D.=13.6, range 19–72). The majority (76.8%) were female. The ethnic distribution was 47.0% white or Caucasian, 21.0% African–American or Black, 20.4% Hispanic or Latino/a and 11.6% other. The mean PCL score at baseline was 55.9 (S.D.=12.4, range 23–85). The total sample from which these are a subset included 1004 patients from ethnically diverse clinics. More detail about the sample and primary outcomes can be found in Roy-Byrne et al. [31] and Craske et al. [32]. Trauma exposure was common in this sample, with 53% reporting at least one traumatic event [33].

Several cutoffs have been proposed for screening positive for PTSD on the PCL. Typically, in mental health settings, a score of 50 is used to indicate likely PTSD [6,34]. This cutoff also may be appropriate in primary care settings if rates of trauma exposure are low or if false positives would be problematic. In this diverse and highly trauma-exposed sample, the sensitivity of the PCL using this cutoff is .69. We previously suggested that a cutoff of 28–30 is more appropriate for primary care settings if rates of trauma exposure are high or if the priority is to not miss a case of PTSD [30]. A cutoff of 28 leads to a sensitivity of .99, and a cutoff of 30 results in a sensitivity of .98. Using cutoffs suggested in our initial investigation of the abbreviated measures [10], the PCL-2 (cutoff of 4) had a sensitivity of .97, and the PCL-6 (cutoff of 14) had a sensitivity of .92.

The correlations among the different length versions of the PCL were assessed at all three time points. At pretreatment, the full PCL correlated .77 with the PCL-2 and .92 with the PCL-6 version. At the 6-month follow-up, the full PCL correlated .85 with the PCL-2 and .96 with the PCL-6. At the 12-month follow-up, the correlations were .84 for the PCL-2 and .97 for the PCL-6. Presented in Table 1 are the correlations and partial correlations between PCL versions and contemporaneous other measures of symptoms and functioning. The pattern of correlations is very similar

Table 1
Correlations (*n*) and partial correlations between PCL versions and measures of symptoms and functioning at each point in time

	PCS	MCS	SDS	OASIS
Baseline				
PCL	−.29 (180)	−.52 (180)	.66 (177)	.50 (181)
PCL-2	−.23	−.40	.46	.31
PCL-6	−.29	−.52	.64	.50
PCL|PCL-2[a]	−.19, *P*<.05	−.36	.54	.43
PCL|PCL-6[a]	−.07, NS	−.13, NS	.18, *P*<.05	.20
6-month follow-up				
PCL	−.22 (157)	−.72 (157)	.80 (157)	–
PCL-2	−.24	−.57	.60	–
PCL-6	−.23	−.72	.79	–
PCL|PCL-2[a]	−.05, NS	−.55	.69	–
PCL|PCL-6[a]	−.01, NS	−.16, *P*<.05	.25	–
12-month follow-up				
PCL	−.28 (139)	−.74 (139)	.83 (138)	–
PCL-2	−.21	−.57	.64	–
PCL-6	−.26	−.73	.81	–
PCL|PCL-2[a]	−.21, *P*<.05	−.57	.70	–
PCL|PCL-6[a]	−.13, NS	−.20, *P*<.05	.28	–

All correlations are significant at *P*<.01 unless otherwise noted.
NS, not significant.
[a] Partial correlations are reported.

Table 2
Effect size (Cohen's *d*) for change from baseline to each follow-up using the PCL versions

	Baseline–6 months		Baseline–12 months	
	Intervention	Usual care	Intervention	Usual care
PCL	.96	.70	1.05	.67
PCL-6	1.01	.62	.96	.67
PCL-2	.93	.62	.91	.55

for the full PCL and the six-item version, but the correlations between the PCL-2 and other measures are generally smaller. After controlling for the PCL-6, correlations with the PCL are reduced and frequently become nonsignificant, meaning that the PCL-6 is capturing a substantial proportion of the information measured by the PCL; this was much less frequently the case for the PCL-2.

Effect sizes for change between baseline and the follow-ups are presented in Table 2. The effect size estimates are similar for all three versions of the PCL.

The reliable change index (i.e., the value for which change greater than this would occur by chance only 5% of the time) for the PCL-2 was calculated using the average reliability estimate from our previous samples[1] and this sample (Cronbach's α=.79) and the baseline standard deviation from this sample (1.93). The reliable change index was 2.21, meaning that change in either direction greater than 2 points should be considered reliable. Similarly for the PCL-6, average reliability from our previous sample[1] and this sample (Cronbach's α=.78) and baseline standard deviation from this sample (4.84) led to a reliable change index of 5.20, meaning that change greater than or equal to 5 points is reliable. The reliable change on the full PCL is considered to be 5–10 points [35]; based on the observed reliability (.87) and baseline standard deviation in this sample, 12 points would be considered to be reliable change. Hence, we compared reliable change on the full PCL as defined as a 10-point change with our calculated reliable change on the abbreviated versions because it is more consistent with our observed reliability than would be a 5-point change. Results are presented in Table 3. Agreement occurred between the full PCL and the PCL-2 71%–78% of the time, with approximately equal rates of each type of disagreement. Agreement between the full PCL and PCL-6 happened 81% of the time at 6 months but only 53% at 12 months, with the majority of disagreements being the PCL-6 classifying the change as unreliable when the PCL classified it as reliable. Because this pattern of disagreement suggests that the cutoff may be too conservative, we examined the use of a change of 4 or more points to indicate reliable change. This reduced the frequency of disagreements, particularly at 12 months (Table 3).

Clinically significant change (i.e., a clinically meaningful difference in symptoms) on the full PCL is indicated by a change of 10–20 points [35]. To use the more lenient threshold, both reliable and clinically significant change can be detected using the values described above. To use the more conservative standard of a 20-point change on the full PCL, higher thresholds for the abbreviated versions are needed, which we calculated for this investigation from our previous data (i.e., 5 points on the PCL-2 and 15 points on the PCL-6). Results are presented in Table 4. Patients were accurately classified by the PCL-2 83%–85% of the time and accurately classified by the PCL-6 72%–75% of the time. At 6 months, all of the discrepancies occurred when the PCL-2 did not classify as clinically significant a change that the full PCL did; the opposite was the case at 12 months. For the PCL-6, however, all errors occurred when clinically significant change identified by the full measure was not identified as such by the six-item measure. Thus, we conjectured that the threshold of 15-point change on the PCL-6 may be too conservative and evaluated lower thresholds. The overall agreement at lower thresholds using the 6-month data were as follows: 14 (78%), 13 (81%), 12 (83%). With the 12-month data, the overall agreement was 72% for a threshold of 14, 75% for a threshold of 13 and 81% for a threshold of 12 (Table 4).

4. Discussion

Treatment guidelines underscore the importance of systematically monitoring symptom levels. Because time is at such a premium in general medical settings, psychometrically sound, brief assessment tools are an asset. In response to this need, we previously developed two-item and six-item forms of a commonly used PTSD assessment tool, the PCL, for screening purposes. In this work, we evaluate the utility of those abbreviated versions for monitoring treatment response.

Based on our examination of sensitivity in this sample, use of the full PCL with a higher cutoff (i.e., total score of 50 or above) would miss approximately 30% of the PTSD cases. The lower cutoffs of 28–30 were highly sensitive to the presence of PTSD in this sample (.98–.99), as they had been in our previous findings [30], highlighting the importance of selecting an appropriate cutoff for each setting [7,34]. The sensitivity of the PCL-2 was similarly very high (.97), but the PCL-6 was slightly lower (.92). Without information about specificity, it is inappropriate to suggest modification of the previously published cutoffs [10], but future work should address this for different types of clinical settings.

In general, the PCL-2 and PCL-6 were strongly correlated with the full measure before and after treatment, with higher correlations at follow-up compared to pretreatment. As expected, the PCL-2 correlated less strongly with the full measure than did the PCL-6.

Because the PCL has established validity, it was expected that the full measure and the abbreviated versions would

[1] PCL-2 Cronbach's α=.80–.90, PCL-6 Cronbach's α=.88–.90.

Table 3
Correspondence between reliable change on the full PCL and abbreviated versions

		6 months (n=156)					
		PCL-2		PCL-6		PCL-6	
		Not reliable	Reliable	Not reliable	Reliable (≥5)	Not reliable	Reliable (≥4)
PCL	Not reliable	46 (29%)	20 (13%)	58 (37%)	8 (5%)	51 (33%)	15 (10%)
	Reliable	25 (16%)	66 (42%)	21 (14%)	69 (44%)	11 (7%)	79 (50%)
		12 months (n=138)					
PCL	Not reliable	36 (26%)	15 (11%)	51 (37%)	0 (0%)	41 (30%)	10 (7%)
	Reliable	15 (11%)	73 (52%)	66 (47%)	22 (16%)	12 (9%)	75 (54%)

correlate significantly with other measures of mental health symptoms and functioning and less highly with measures of other aspects of functioning. As predicted, the PCL correlated more highly with mental-health-related functioning as measured by the SF-12 than with physical-health-related functioning. The pattern of correlations was highly similar for the full PCL and the six-item version, with lower correlations using the two-item measure.

We were also interested to what extent important information would be lost if the shortened versions were used. Partial correlations indicated that much of the information captured by the PCL is also captured by the PCL-6, as suggested by previously strong correlations becoming small and/or nonsignificant. This was not the case with the PCL-2, suggesting that it is missing information captured by the full measure. Effect size (Cohen's d) of the change in PTSD symptoms across treatment was examined, and we found that the three performed very similarly. In addition, we were able to establish thresholds for reliable and clinically significant change for both the PCL-2 and PCL-6 that reasonably correspond to the full PCL. Because of the exploratory nature of this work, however, these should be examined in additional samples.

In summary, past work has shown the PCL-6 to be a very adequate tool for screening for PTSD, and this work suggests that it may also be useful for monitoring treatment in primary care settings. It does not correspond perfectly with the longer measure; this potential loss of information should be weighed against the time saved in deciding about the use of the measure in a given clinic. A summary of recommended cutoffs and thresholds for reliable and clinically significant change is presented in Table 5. Although past work has shown that the PCL-2 may be an efficient screening tool, we suggest that the six-item measure is a better choice to gauge treatment response in primary care. As we have emphasized previously, the performance of such tools is setting-specific, so these findings should not be generalized to mental health specialty clinics, where initial symptom severity is likely higher than was observed in this sample, or to other primary care settings, which might have lower rates of trauma exposure than those seen here. We also caution against generalizing these results to the PCL-M or PCL-S because these abbreviated forms of the PCL were created using the PCL-C. Recent findings, however, suggest that PCL wording changes do not alter symptom reports [36].

Table 4
Correspondence between clinically significant change on the full PCL and abbreviated versions

		6 months (n=156)					
		PCL-2		PCL-6		PCL-6	
		Not clinically significant	Clinically significant	Not clinically significant	Clinically significant (≥15)	Not clinically significant	Clinically significant (≥12)
PCL	Not clinically significant	113 (72%)	0	113 (72%)	0	113 (73%)	0
	Clinically significant (≥20)	26 (17%)	18 (11%)	39 (25%)	4 (3%)	27 (17%)	16 (10%)
		12 months (n=138)					
PCL	Not clinically significant	68 (49%)	20 (14%)	88 (64%)	0 (0%)	87 (63%)	1 (1%)
	Clinically significant (≥20)	1 (1%)	50 (36%)	39 (28%)	11 (8%)	25 (18%)	25 (18%)

Table 5
Cutoffs for screening for PTSD and thresholds for reliable and clinically significant change for the PCL and abbreviated versions

	Suggested cutoff	Reliable change	Clinically significant change
PCL[a]	28–50	±5–10	±10–20
PCL-6	14	±4	±4-12
PCL-2	4	±2	±2-5

[a] Based on Lang et al., 2005, NCPTSD [30].

As we have emphasized, it is important to understand the performance of these tools in the settings in which they are applied. For this reason, future work to evaluate the PCL-2 and PCL-6 in settings such as deployment screening clinics and specialty medical settings would be useful. There is also a tremendous need for brief screening tools for PTSD worldwide. The performance of the PCL-2 as an initial screening device should be evaluated in other countries (and languages) and in field settings such as disaster response centers and refugee camps. Finally, additional normative data would be useful to better establish thresholds for reliable and clinically significant change as the previous samples on which our norms were based may have had other disorders that elevated the PCL scores.

Prior work has suggested that the PCL-2 and PCL-6 are reasonable alternatives for PTSD screening in general medical settings. Based on this study, the PCL-6 is a reasonable tool for tracking progress across treatment in situations where use of the full PCL is not feasible. Shorter by 11 items, this measure likely requires less than half of the administration time needed for the full measure. Importantly, the PCL-6 was highly correlated with the PCL across time, exhibited similar correlations with mental and physical health measures when compared to the full measure, accounted for much of the information captured by the full PCL and demonstrated similar effects size change in response to treatment.

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