Exploring the factor structure of the PTSD Checklist for DSM-5 in psychotic disorders

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Abstract

Objective: The PTSD Checklist for DSM (PCL) is the most widely used screener to assess posttraumatic stress disorder (PTSD) in those with psychotic disorders (psychosis), though previous research has questioned its validity in psychosis. Considerable symptom overlap between the two disorders (e.g., concentration difficulties, avoidance, etc.) along with the general underdiagnosing of PTSD in psychosis speaks to the need for consensus regarding brief screeners. This hypothesis-generating study is the first to explore the PCL-5 (its most recent iteration) factor structure in psychosis to assess if a more valid underlying structure may exist.

Method: Sixty-five individuals who met the DSM-5 PTSD criterion A traumatic event following an interview subsequently completed the PCL-5. Exploratory factor analysis was conducted to explore the latent structure of the PCL-5 in psychotic disorders.

Results: A four-factor solution differing from the DSM-5 four-factor model emerged as the best fitting model. Resulting PCL-5 dimensions in psychosis were identified as (1) Re-experiencing/Negative Affect; (2) Depressive; (3) Externalizing Anxious Behaviors; and (4) Avoidance/Physiological Reactivity.

Conclusions: Results guide the hypothesis that the latent structure of the PCL-5 may be unique in psychosis, which will have important clinical implications. Research is now needed to confirm the proposed model in larger samples of individuals with psychosis.

Keywords: psychosis; schizophrenia; PTSD; posttraumatic stress disorder; factor analysis

Clinical impact statement: This study is a starting point toward understanding how the influence of psychotic symptoms may impact the subjective experience of PTSD and more general posttraumatic stress symptoms (and vice versa) in people with psychosis. Our study makes a novel contribution toward validating the PCL-5 for use as a brief screener in psychotic disorders.

Lifetime prevalence of posttraumatic stress disorder (PTSD) is higher among those with psychotic disorders (herein psychosis) compared to the general population (e.g., Fisher et al., 2012; Morrison et al., 2003). The PTSD Checklist for DSM (PCL; Weathers et al., 1993; Weathers et al., 2013) is the most widely used self-report screener to assess PTSD and related symptoms in individuals with psychosis (Dallel et al., 2018). However, previous researchers have questioned the scale's validity for use in this population (Steel et al., 2017). The considerable symptom overlap between these two disorders (e.g., concentration difficulties, avoidance and numbing, intrusions that may exacerbate or be misinterpreted as hallucinations) is importantly theorized to contribute to the underdiagnosing of PTSD in psychosis (e.g., Lommen & Restifo, 2009). These issues taken together drive the need to better understand the dimensions of PTSD in psychotic disorders, pertinent to both research and routine care.

The objective of this hypothesis-generating study is thus to present interim results from an exploratory factor analysis (EFA) of the PCL-5, the scale's most recent iteration (Weathers et al., 2013). The study goal is to discern whether a more valid or concise underlying structure exists in psychosis, which to our knowledge has not been previously investigated. Specific aims are to determine the number of latent constructs underlying the scale's 20 items, and if relevant, to identify, label, and describe the content of emerging factors. These preliminary results were obtained from a small sample size of 65, which conforms to the acceptable absolute minimum of 50 (e.g., de Winter* et al., 2009; Sapnas & Zeller, 2002) and to the minimum of 60 proposed in MacCallum et al.'s (2001; 1999) widely accepted theoretical models for successful EFA.

Method

Participants

One hundred and two individuals completed an intake evaluation at a clinic specializing

in psychological interventions for psychosis. Eligibility included (1) a diagnosis of a schizophrenia spectrum or other psychotic disorder; being (2) ≥18 years of age; (3) clinically stable/receiving a stable dose of antipsychotic medication; and (4) having no major physical illness. Exclusion criteria were (1) a history of a medical or neurological condition that can affect cognition; and (2) current severe substance use disorder. Informed consent was obtained from all participants and respected the Douglas Mental Health University Institute's research ethics board policies. Assessments were administered by trained evaluators from January 2016 to May 2018. Participants consented to sharing data for the purpose of secondary analyses. Sixty-five people reporting a valid DSM-5 criterion A traumatic event were included in the analyses.

Assessment procedure

The following assessment was used as a means to characterize the sample (the on-line Supplemental Method reports a detailed description of the assessment procedure and associated measures). Participants reported their age, sex, ethnicity, language, and years of education. Medical chart review confirmed diagnoses, duration of psychotic illness (DOI), and current medications. Psychotic symptoms were assessed with the Structured Clinical Interview for DSM-IV-TR /psychosis module (First, 2014) and the Psychotic Symptoms Rating Scales (PSYRATS; Haddock et al., 1999). Other measures included the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995), the Brief Cognitive Assessment Tool for Schizophrenia (B-CATS; Hurford et al., 2018), and the Social and Occupational Functioning Assessment Scale (SOFAS; Goldman et al., 1992). Participants completed version 2 of the PCL-5 (Weathers et al., 2013), which first assesses DSM-5 PTSD criterion A and is followed by the 20-item self-report symptoms questionnaire. The PCL-5 is rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*) and estimates symptoms severity by assessing the extent to which the person

was bothered by re-experiencing, avoidance, negative alternations in cognitions and mood (NACM), and arousal or hypervigilance in the last month. Items are summed to generate severity scores for each cluster; the total score ranges from 0 to 80. The PCL has moderate-to-high test-retest reliability (IICs from .43-.66) and internal consistency ranging from (α = .72-.87) (Goodman et al., 1999; Mueser et al., 2001) in those with severe mental illness.

Design and statistical procedure

This study employed a cross-sectional retrospective research design. Analyses were conducted using SPSS 26 and R Core Team. Tests' assumptions were verified, alpha levels were set at .05, and tests were two-tailed for all analyses, when/if appropriate. Means, standard deviations, ranges, percentages, and frequencies were calculated when appropriate. Exploratory factor analysis (EFA) determined the number of latent constructs underlying the 20 items of the PCL-5 using Principal Axis Factoring employing an oblique (oblimin) rotation. Factors with eigenvalues >1 were retained (Field, 2009; Kaiser, 1960) and confirmed via scree plot. Factor selection cutoff was at the point of inflection (levelling off) of the scree plot curve (Cattell, 1966; Field, 2009). Solutions were verified using parallel analysis of randomly generated eigenvalues (O'connor, 2000). Other fit indices included analysis of inter-factor correlation magnitudes, where high inter-factor correlations (r >.75) likely speak to issues related to discriminant validity (e.g., Farrell, 2010), and factors with at least three-item solutions (Schmitt et al., 2018). Finally, items with communalities of at least .5 with a gap of at least .2 between cross-loadings were retained (Fabrigar et al., 1999; Tabachnick et al., 2001). Scale reliability (Cronbach's alpha (α)) was estimated for each new factor, with the 'scale if item deleted' option selected and where .8 was considered good. Output was scrutinized to ensure that items did not decrease the overall α.

Results

Table 1 reports descriptive statistics for all variables. The on-line Supplemental Table 1 reports all item-level and total score descriptive statistics of the PCL-5. Items 2 and 16 were skewed and the distribution of the total scale was normal. Cronbach's α for the 20 PCL-5 items was .95, indicating excellent internal consistency. Factorability complied with recommended standards: all 20 items had inter-correlations exceeding $r = .3$ and all correlations in the anti-image correlation matrix exceeded $r = .5$; the Kaiser-Meyer-Olkin measure of sampling adequacy was high (KMO = .87); and Bartlett's test of sphericity was significant (χ^2 (190) = 896.17, $p < .05$). Communalities after extraction all exceeded .5 for items with factor loadings except for item 10 in factor 1 (see Table 2). Principal axis factoring revealed four initial eigenvalues >1. These first four factors explained 50.00%, 7.12%, 6.52%, and 5.05% of the variance respectively, or 68.69% of the cumulative variance. Parallel analysis confirmed the four-factor solution: random data eigenvalues were >1 for the first four factors. All cross-loadings had a gap of at least .3. All factors had at least three-item solutions. No factor correlation exceeded $r = .58$.

Four PCL-5 items did not meet the minimum criterion of having a factor loading of at least .4. These included items 2,8,17, and 20 (see Table 2). Item 2 had a floor effect, with 50.8% of participants not reporting the symptom. Table 2 presents the final four-factor matrix. Original PTSD factor labels were not retained as the new PCL-5 factor dimensions proposed in psychosis contain PCL-5 items from various DSM-5 PTSD symptom clusters. The proposed labels do however draw on previous research identifying six- and-seven-factor hybrid anhedonia and externalizing behavior models (e.g., Armour et al., 2015; Liu et al., 2014; Tsai et al., 2015). Proposed labels are Re-experiencing/Negative Affect (factor 1); Depressive (factor 2); Externalizing Anxious Behaviors (factor 3); and Avoidance/Physiological Reactivity (factor 4).

Items in Table 2 also highlight the DSM-5 PTSD symptom cluster represented by each PCL-5 item as well as scale reliability, which were all satisfactory. All items contributed meaningfully, i.e., alpha levels did not decrease for any items if the item were to be deleted.

Discussion

This interim analysis employed EFA to identify the potential dimensions of the PCL-5 in psychosis. Four independent dimensions emerged, with content differing from that of the DSM-5 four-factor model. The loading of intrusion and NACM symptoms in factor 1, "Re-experiencing/Negative Affect", is interesting considering the conceptual overlap with positive psychotic symptoms (such as hallucinations and delusions). Evidence suggests that those with histories of abuse and lifetime adversity form a subgroup of psychosis patients who respond poorly to antipsychotic medications (Hassan & De Luca, 2015). It is conceivable then, that the posttraumatic stress symptoms loading together in factor 1 may contribute to the subjective experience, exacerbation, and maintenance of positive symptoms, or vice versa. Items from the NACM PTSD cluster comprise the negative affect dimension proposed by Armour et al. (2015) with the exception of the trauma-related amnesia item, which did not load onto any factor.

Factor 2, labelled "Depressive", is empirically supported given three of the four items form the latent anhedonia dimension (Armour et al., 2015; Liu et al., 2014). Concentration difficulties from the arousal/hypervigilance symptom cluster also loaded onto the Depressive factor. Anhedonia is indeed considered a core negative symptom of psychotic disorders. Notably, though attention difficulties were historically subsumed under negative symptoms, studies often observe weak loadings on negative symptom clusters (e.g., Malla et al., 2002).

Factor 3, "Externalizing Anxious Behaviors", is also empirically supported given that two of the three included items: (1) reckless behaviors, and (2) irritable behavior/angry outbursts,

form the externalizing behaviors dimension proposed by Tsai et al. (2015), and later replicated by Armour et al. (2015). In psychosis, the exaggerated startle response symptom also loaded with externalizing behaviors, and as such was conceptually conceived of as anxious reactivity.

Finally, factor 4, “Avoidance/Physiological Reactivity” retained the DSM-5 avoidance symptom cluster and includes the physiological reactivity to internal and external cues intrusion symptom. Given that PCL-5 avoidance items do not explicitly address avoidance of physiological sensations, and that avoidance in part is an attempt to suppress physiological reactions, these symptoms are arguably intrinsically linked; it follows that they loaded together.

Four items failed to load on any factor; among them was item 2 “Repeated, disturbing dreams of the stressful experience?”. Over 50% of the sample reported not having had repeated or disturbing dreams. Interestingly, studies have reported decreased dream-recall in psychosis compared to healthy controls (e.g., Lusignan et al., 2009). Items 8, 17 and 20 (see Table 2) also did not load on any factor and thus, in our sample, were conceptually unrelated to the experience of posttraumatic stress symptoms.

This study proposes a novel hypothesis of the PCL-5 dimensions in psychosis and draws empirical support from previous studies. The small sample size is indeed a limitation, though conforms to generally-supported absolute minimums for EFA. Given normality of the total scale, the small number of skewed items, absence of univariate outliers, and overall indicators of factorability, EFA was considered appropriate. To conclude, this interim analysis represents an important step in both validating the PCL-5 and in beginning to conceptualize the dimensions of PTSD in psychosis. Hypothesis-driven studies with larger sample sizes are a required next step.

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Table 1. *Sociodemographic and clinical sample characteristics.*

Variable	**Frequency**	***%***	
Sex			
Males	37	56.9	
Females	28	43.1	
Ethnicity			
Caucasian	49	75.4	
Visible minority	13	20.0	
Unknown	3	4.6	
Taking antipsychotics			
Yes	56	86.2	
No	8	12.3	
Unknown	1	1.5	
PTSD diagnostic cutoff			
Yes	13	20	
No	52	80	
	M	***SD***	**Range**
Age	39.78	11.3	19-61
Years of Education	12.02	2.41	7 - 18
DOI	14.33 (n=62)	11.83	0 - 52
SOFAS	50.03	13.51	25-90
PCL-5 total score	36.62	20.98	0-77
PSYRATS AHS			
Hallucinations present	26.5 (n=18)	7.94	4-38
PSYRATS DS			
Delusions present	14.67 (n=43)	3.78	8-24
DASS-21 Depression	10.08	5.76	0-21
DASS-21 Anxiety	9.29	5.82	0-26
DASS-21 Stress	10.05	5.73	1-24
DASS-21 Total	29.58	15.42	3-66
B-CATS			
Trail-Making Part A	49.07	34.95	17-238
Trail-Making Part B	106.55	49.59	39-311
Category Fluency	32.58	8.31	14-56
Digit Symbol	50.70	17.12	9-89

Note. n=65; PTSD diagnostic cutoff = total score ≥ 54 on the PTSD Checklist for DSM-5, indicating probable posttraumatic stress disorder in the psychosis population per Grubaugh et al., 2007; Range = the range of participant scores; DOI = duration of psychotic illness operationalized as the difference between the evaluation date minus first hospitalization or first reported instance of psychotic symptoms, in years; SOFAS = Social and Occupational Functioning Assessment Scale; PCL-5 = PTSD Checklist for DSM-5; PSYRATS AHS = psychotic symptoms rating scales, auditory hallucinations subscale and DS = delusions subscale; DASS-21 = Depression Anxiety Stress Scales-21; B-CATS = Brief Cognitive Assessment Tool for Schizophrenia and includes the Trail-Making Parts A & B = in seconds, Category Fluency, and Digit Symbol = total score.

Table 2. *Patten Matrix of factor loadings with labels of the proposed factor structure of the PCL-5 in psychosis, with communalities and the scale reliability of each proposed factor.*

Item, (PCL-5 item number) and PCL-5 symptom cluster	Factor 1	Factor 2	Factor 3	Factor 4	Com.	Scale Reliability
Factor 1: Re-experiencing/Negative Affect						α = .90
Feeling very upset when something reminded you of the stressful experience? (4) ***B4***	.817				.786	
Having strong negative beliefs about yourself, other people, or the world (9) ***D2***	.687				.695	
Having strong negative feelings such as fear, horror, anger, guilt, or shame? (11) ***D4***	.548				.713	
Blaming yourself or someone else for the stressful experience or what happened after it? (10) ***D3***	.546				.493	
Suddenly feeling or acting as if the stressful experience were actually happening again? (3) ***B3***	.503				.560	
Repeated, disturbing, and unwanted memories of the stressful experience? (1) ***B1***	.461				.505	
Factor 2: Depressive						α = .90
Trouble experiencing positive feelings? (14) ***D7***		.838			.719	
Loss of interest in activities that you used to enjoy? (12) ***D5***		.751			.825	
Having difficulty concentrating? (19) ***E5***		.658			.756	
Feeling distant or cut off from other people? (13) ***D6***		.565			.695	
Factor 3: Externalizing Anxious Behaviors						α = .77
Taking too many risks or doing things that could cause you harm? (16) ***E2***			.703		.648	
Irritable behavior, angry outbursts, or acting aggressively? (15) ***E1***			.536		.553	
Feeling jumpy or easily startled? (18) ***E4***			.422		.635	
Factor 4: Avoidance/Physiological Reactivity						α = .83
Avoiding external reminders of the stressful experience? (7) ***C2***				.804	.774	
Avoiding memories, thoughts, or feelings related to the stressful experience? (6) ***C1***				.716	.636	
Having strong physical reactions when something reminded you of the stressful experience? (5) ***B5***				.609	.645	
Items with no factor loading						
Repeated, disturbing dreams of the stressful experience? (2) ***B2***					.439	
Trouble remembering important parts of the stressful experience? (8) ***D1***					.418	
Being “super alert” or watchful or on guard? (17) ***E3***					.360	
Trouble falling or staying asleep? (20) ***E6***					.480	

Note. n=65. PCL-5 = PTSD Checklist for DSM-5; Com. = communalities; B = re-experiencing symptom cluster; C = avoidance symptom cluster; D = negative cognition and mood symptom cluster; E = arousal and hyper-vigilance symptom cluster.

Appendix 1.

Narrative description: The data reported in this manuscript were collected as part of a larger data collection (pre-and-post clinical intake research evaluation). Findings have been reported in one other MS (MS 1) which aimed to determine i) the prevalence and severity of posttraumatic stress symptoms, ii) its associations with psychotic and affective symptoms (stress, anxiety, depression), as well as patient-centered variables (quality of life, wellbeing), and iii) to refine trauma screening recommendations in psychotic disorders. The PTSD Checklist for DSM-5 (PCL-5) is considered an overlapping variable. Participants in MS 1 were categorized into low, moderate, and severe posttraumatic stress symptoms based on the PCL-5, which was then included as a categorical variable in a MANOVA and ANOVA. In the current study, this variable was the subject of an exploratory factor analysis. Hence, the objective, analyses, and results of the current study are independent of MS 1.

Supplemental Table of Contents

Supplemental Method

Assessment procedure

Data was collected as part of a general semi-structured psychological intake evaluation, integrated within the context of a larger research program ongoing at the Center for Personalized Psychological Interventions for Psychosis (Ci3P) clinic of the Douglas Mental Health University Institute (DMHUI) in Montréal, Canada. Data obtained from this intake evaluation are reported in the current study as a means to characterize the sample and better contextualize results of the exploratory factor analysis. The assessment included measures of psychotic and affective symptomology, cognition, and functioning, in addition to posttraumatic stress symptoms. Intake evaluations were administered in English or French by trained evaluators from January 2016 to May 2018. Evaluators were full-time laboratory staff and doctoral-level clinical psychology interns. All evaluators received extensive training from senior staff. Ongoing supervision from senior staff and the principal investigator of the current study (ML) was provided to all evaluators. Participants were compensated $25.00 CAD and two public transportation tickets for each 2-hour evaluation session. Evaluations were typically completed in one, 2-hour session.

List of included measures

Demographic information. Participants self-reported their age, sex, ethnicity, and years of education by means of a general screening and demographics interview developed by our laboratory. Medical chart review confirmed diagnoses, duration of psychotic illness (DOI; operationalized as the difference between the evaluation date minus first hospitalization or first reported instance of psychotic symptoms, in years), and current medications.

Structured Clinical Interview for DSM-IV-TR /psychosis module (SCID/psychosis module). The SCID/psychosis module (First, 2014) is an interviewer-rated measure that was administered to confirm the presence of psychotic symptoms in the last month (yes/no). The SCID/psychosis module includes

23 items rated on a 4-point Likert scale ranging from ? (*questionable*) to 3 (*threshold*). Threshold-rated items indicate that the symptom is present.

Psychotic Symptoms Rating Scales (PSYRATS). If psychotic symptoms were present in the last month, the PSYRATS (Haddock et al., 1999) were administered to assess symptom severity in the last week. The PSYRATS is a 17-item interviewer-rated measure on a 5-point Likert scale, ranging from 0 to 4. Two stand-alone subscales (auditory hallucinations subscale (AHS), delusions subscale (DS)) measure the severity and distress of psychotic symptoms over the last week, where each item has different rating criteria, but exist on the same 5-point scale. The AHS consists of 11 items with a possible range of 0-44, and the DS consists of six items with a possible range of 0-24. Higher scores on the PSYRATS indicate greater psychotic symptom severity. The PSYRATS has excellent test-retest reliability: intraclass correlations (IICs) for the AHS range from .94-.99; the DS ranges from .96-.95. Both scales have acceptable internal consistency (AHS, $\alpha = .75$; DS, $\alpha = .70$) (Kronmüller et al., 2011).

Depression Anxiety Stress Scales-21 (DASS-21). Affective symptoms (depression, anxiety, stress) were measured using the 21-item version of the DASS (Lovibond & Lovibond, 1995). The DASS-21 is a self-report measure assessing affective symptoms over the last week and is measured on a 4-point Likert scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Each of the DASS-21 subscales (depression, anxiety, stress) contain 7 items that range from 0-21. Higher scores on the DASS-21 indicate increased symptomology. Scores between 11-13 (depression subscale), 8-9 (anxiety subscale), and 13-16 (stress subscale) indicate severe symptoms. Higher scores indicate extremely severe symptoms on each respective subscale. The DASS-21 has excellent internal consistency, where $\alpha =. 94$ for depression, .87 for anxiety, and .91 for stress (Lovibond & Lovibond).

Brief Cognitive Assessment Tool for Schizophrenia (B-CATS). Cognition was assessed using the B-CATS (Hurford et al., 2018), which is a neuropsychological battery known to test the capacities that

more consistently correlate with functional skills in people with psychosis (Green et al., 2000). The battery consists of the Trail-Making Parts A and B (Reitan & Wolfson, 1985), Category Fluency (animal and boy names) (Strauss et al., 2006), and the Digit Symbol subtest of the Wechsler Adult Intelligence Scale 3rd ed (Wechsler, 1997a). Trail-Making Parts A and B include two pencil-and-paper subtests that measure response time, with higher scores indicating deterioration. Both tests consist of 25 circles, each distributed over a single piece of paper. In Part A, the circles contain numbers from one to 25; participants are asked to connect the numbers sequentially by tracing a line from one to 25. In Part B, both numbers (1-11) and letters (A-L) are contained within the circles. Following the same instructions, participants alternate between the numbers and letters while connecting them in ascending order (i.e., 1-A-2-B, etc.). Category Fluency involves an evaluator asking the participant to list as many items as possible belonging to given category (e.g., boy's names) within a one-minute timeframe. The evaluator notes each item listed by the participant. Each correct item is given a score of 1 and each incorrect item receives a score of 0. A total score is derived by summing the number of correct items, with higher total scores indicating greater performance. Finally, the Digit Symbol subtest is a pencil-and-paper test wherein participants have two minutes to match symbols to numbers according to an answer key. Participants are given a score of 1 for every correct response and 0 for incorrect responses. Correct responses are summed to yield a total score, where higher scores indicate greater performance.

Social and Occupational Functioning Assessment Scale (SOFAS). The SOFAS estimates current global functioning, where 0 = inadequate information and scores range from 10 (*persistent inability to maintain minimal personal hygiene/inability to function without harming self or others or without considerable external support*), to 100 (*superior functioning in a wide range of activities*) (Goldman et al., 1992).

PTSD Checklist for DSM 5. Participants completed version 2 of the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013) which first assesses the presence of a Criterion A traumatic event by

defining what constitutes an event, and then provides examples of qualifying events. The participants then reported their worst event. According to the DSM-5, a Criterion A traumatic event includes exposure to actual or threatened death, sexual violence, or serious injury in one of the following ways: (1) direct experience; (2) witnessing the event; (3) learning about a traumatic event that occurred to a family member or close friend, of which in the case of actual or threatened death, the event was violent or accidental; and (4) having experienced repeated or extreme exposure to details of a traumatic event. If a psychotic episode was identified as a worst event, this was also considered a Criterion A event, which is typical of studies investigating trauma in psychosis (Mueser et al., 2002).

Participants then completed the PCL-5 symptoms questionnaire, a 20-item self-report on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The symptoms questionnaire assesses the extent to which an individual was bothered by the four core PTSD criterion symptom clusters: (B) re-experiencing; (C) avoidance; (D) negative cognitions and mood; and (E) arousal or hypervigilance, in the last month. Item scores are summed to generate a total score and a continuous measure of PTSS for symptom clusters. A diagnostic cut-off of 54 on the total score has been proposed for the psychosis population (Grubaugh et al., 2007). A provisional DSM-5 PTSD diagnosis can be obtained by considering all items rated 2 “moderately” or higher as “symptoms endorsed”, and then following the diagnostic rule of at least one B, one C, two D, and two E symptoms. Data from the PCL-5 were analyzed if (1) the participant reported a traumatic event that indeed meets Criterion A, or (2) they were not comfortable to disclose the nature of the traumatic event but did complete the questionnaire. The PCL has been partially validated in severe mental illness with moderate-to-high test-retest reliability (IICs ranging from .43- .66) and internal consistency ranging from (α = .72-.87) (Goodman et al., 1999; Mueser et al., 2001).

Supplemental Table 1. *Item-level and total score descriptive data of the PCL-5.*

PCL-5 item	Item description	*M*	*SD*	Skewness	Kurtosis	Range
1 (B1)	Memories	2.12	1.31	-.148	-1.075	0-4
2 (B2)	Dreams	1.12	1.38	**.851**	-.691	0-4
3 (B3)	Flashbacks	1.48	1.39	.443	-1.103	0-4
4 (B4)	Distress	2.15	1.37	-.174	-1.102	0-4
5 (B5)	Physiological reactions	1.55	1.49	.287	-1.419	0-4
6 (C1)	Internal avoidance	2.06	1.50	.036	-1.408	0-4
7 (C2)	External avoidance	1.95	1.47	-.069	-1.368	0-4
8 (D1)	Dissociative amnesia	1.45	1.53	.496	-1.347	0-4
9 (D2)	Negative beliefs	2.29	1.55	-.222	-1.475	0-4
10 (D3)	Blame	2.02	1.62	-.049	-1.604	0-4
11 (D4)	Negative feelings	2.40	1.48	-.309	-1.353	0-4
12 (D5)	Loss of interest	2.12	1.59	-.184	-1.574	0-4
13 (D6)	Detachment	2.03	1.54	-.053	-1.512	0-4
14 (D7)	Emotional numbing	1.82	1.57	.116	-1.508	0-4
15 (E1)	Irritability / aggression	1.66	1.60	.413	-1.409	0-4
16 (E2)	Reckless behavior	1.05	1.35	**1.051**	-.172	0-4
17 (E3)	Hypervigilance	1.89	1.39	.126	-1.263	0-4
18 (E4)	Startle response	1.72	1.50	.319	-1.293	0-4
19 (E5)	Concentration	2.03	1.55	-.053	-1.548	0-4
20 (E6)	Sleep	1.69	1.63	.271	-1.595	0-4
Total score		36.62	20.98	-.055	-.953	0-77

Note. n=65. PCL-5 = PTSD Checklist for DSM-5; Standard error of skewness for all variables = .297; B = re-experiencing symptom cluster; C = avoidance symptom cluster; D = negative alterations in cognitions and mood symptom cluster; E = arousal and hyper-vigilance symptom cluster; skewed items are represented by bolded skewness scores.

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