Psychometric properties of the Turkish version of the Child PTSD Symptom Scale

Muhammed Tayyib Kadak[a,*], Murat Boysan[b], Nesrin Ceylan[c], Veysi Çeri[a]

[a]*Department of Child and Adolescent Psychiatry, Cerrahpaşa School of Medicine, Istanbul University, Istanbul, Turkey*
[b]*Faculty of art and Science, Department of Psychology, Yuzuncu Yil University, Van, Turkey*
[c]*Department of Pediatria, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey*

Abstract

Objective: Psychometric properties of the Turkish version of the Child PTSD Symptom Scale (CPSS) were examined in a sample of young individuals who experienced a severe earthquake.
Method: Subjects were 479 children and adolescents recruited from schools after 18 months of Van earthquake. Mean age was 12.83 (SD ± 1.88), ranging from 8 to 18.
Results: Psychometric features were generally good for the CPSS. The original three-factor structure was replicated in this study. Internal consistency of the scale was good (ranged from $\alpha = .70$ to $\alpha = .89$ for total and subscale scores). The CPSS demonstrated good convergent validity with Child Post-Traumatic Stress Disorder Reaction Index scores as well as good divergent validity with the State and Trait Anxiety Inventory for Children and Child Depression Inventory. As an evidence for a good discriminant validity, the CPSS successfully distinguished high PTSD individuals from low PTSD individuals.
Conclusion: The CPSS had sound psychometric properties in a Turkish youth population.
© 2014 Elsevier Inc. All rights reserved.

1. Introduction

Posttraumatic stress disorder (PTSD) is the most common reaction in response to trauma-exposure [1]. Most individuals experiencing a highly adverse traumatic event undergo a natural recovery process in one month's time after the event that symptoms and functionality almost comes back to a level prior to the event; but a sizeable minority, approximately 30%, sustain eliciting various stress responses and suffer from persistent PTSD, even in all ages [2,3]. Limited evidence demonstrated that natural recovery from posttraumatic stress following a traumatic event decreases to 50% among younger children and a significant proportion was found to endure persistent symptoms of PTSD at least 2 years [4]. More efficient assessment of PTSD among children and adolescents may presumably allow clinicians to early interventions and more effectively manage PTSD symptoms in youth population.

A more prevailing understanding of psychopathology in children and adolescents lags behind our knowledge about adult mental health. This may be the consequence of various factors of which challenges of diagnosis in younger populations, lack of developmental sensitivity of current diagnostic systems and paucity of psychometrically sound assessment measures [5,6]. Young population seem to be an overlooked group in terms of posttraumatic interventions, whereas prevalence of trauma-exposure is ubiquitous among children and adolescents [7,8]. Exposure to traumatic events is not rare among children and adolescents, between 25 and 87% of this population report experiencing at least one type of trauma, and rates of estimated lifetime prevalence of PTSD in youth samples were through 5–10% [9,10]. High prevalence of exposure to traumatic events and presumably more severe consequences of traumatic experiences in children underscore the importance of tools to effectively screen child PTSD. Notwithstanding, only several psychometric instruments have been developed to assess PTSD in youth population. In a review of current and frequently used measures of child and adolescent PTSD, Hawkins and Radcliffe [11] detected only seven psychometric instruments as follows: Diagnostic

Interview for Children and Adolescents-Revised [12], Kiddie Schedule for Affective Disorder and Schizophrenia for School-age Children–Present and Lifetime Version [13], Clinician Administered PTSD Scale for Children and Adolescents [14], Impact of Events Scale-Revised [15], Child Posttraumatic Stress Disorder Reaction Index [16], Trauma Symptom Checklist for Children Posttraumatic Stress Scale [17], and child revision of the Posttraumatic Diagnostic Scale [18,19].

The Child Posttraumatic Stress Disorder Reaction Index (CPTSD-RI) has been the most widely used tool in non-English-speaking population, even in Turkey, to assess reactions of youth in response to trauma-exposure [11]. However, the Child PTSD Symptom Scale (CPSS) is a promising instrument to assess child trauma-induced reactions with sound preliminary psychometric properties. Hukkelberg, Ormhaug [20] demonstrated that the CPSS had comparable properties with the CPTSD-RI; despite low statistical agreement between diagnosis of these two instruments. On the contrary, scores on both clinical interview and self-report version of the CPSS revealed good convergent validity with The Schedule of Affective Disorders and Schizophrenia for School-Age Children-Revised as well as sound reliability [21]. Likewise, good reliability and validity have been reported for cross-cultural translations of the scale [22–24] and promising results have been replicated in English-speaking samples [25].

An age specific revision of PTSD diagnostic criteria as PTSD-AA proposed by Scheeringa, Zeanah [26] has been demonstrated to be more effective in assessing child PTSD among young individuals aged younger than six years old and more accurately predict latter onset of persistent PTSD among children [4,27,28]. It seems that, in line with PTSD-AA criteria for children, developmental differences for children were taken account for PTSD diagnosis in the DSM-5 whereby diagnostic criteria for children were distinctly defined for children younger than age 6. On the contrary, PTSD diagnosis for children and adolescents older than 6 years old was still isomorphic to adults as in the fifth revision [29]. Additionally, PTSD diagnosis became a four-factor structure of reexperiencing, avoidance/numbing, negative changes in mood and cognitions, and arousal clusters in the DSM 5. However, based on the research on youth population, young individuals were found to be typically manifesting with the traditional three-cluster symptom structure of PTSD [7,27,30]. The CPSS is probably the best measure to represent this view, thereby covering 17 symptoms from three symptom clusters primarily predicated in the DSM-IV.

Jensen, Rubio-Stipec [31] proposed a multimethod approaches in the assessment of children and adolescents, using either teacher or parent report supplement to information gathered from the cases, would allow a more comprehensive and less biased assessment of posttraumatic reactions. On the contrary, there has been a convincing evidence of that, upon comparing to child reports, either parents or other people may not be an accurate source of information in rating to the levels of posttraumatic reactions in children [32,33]. The CPSS is a readily administered self-report tool that can also be individually administered by clinicians in young population.

Given the various lines of research findings and theoretical considerations with respect to the assessment of PTSD in children and adolescents, the CPSS is a promising tool with sound properties. Also, unfortunately, very few tools to assess PTSD symptoms in children and adolescent are in use. The purpose of the current study was to assess psychometric properties of the Turkish version of the CPSS among Turkish children and adolescents.

2. Method

2.1. Participants and procedure

Participants were 479 children and adolescents recruited 18 months following the earthquake from secondary schools in Van, Turkey. Respondents were recruited by sending letters describing the study to their parents and children from a school population of Grades 4 through 12, most of whom had experienced a severe earthquake on September 23, 2011. Written consent was taken from all parents of participated children. The psychometric instruments of the study were administered in schools by the researchers in a quite classroom after the instructions were ended. 273 subjects were boys (57%) and 206 subjects were girls (43%). The mean age of the children was 12.83 (SD ± 1.88) and participants aged 8–18. The current research was conducted in line with the ethical standards approved by University Ethical Committee.

2.2. Psychometric instruments

2.2.1. Children's Posttraumatic Stress Scale-Self Report (CPSS-SR)

The CPSS is a child version the Posttraumatic Diagnostic Scale [18], a self-report measure designed to diagnose and assess severity of PTSD in children and adolescents [19]. The CPSS taps 24 items, 17 items of which maps on DSM-IV criteria for PTSD [34] and 7 questions for assessing functional impairment. 17 questions in the first part of the instrument are rated on a four-point Likert-type scale: 0 is not at all, 1 is once a week or less/once in a while, 2 is 2–4 times a week/half the time, and 3 is 5 or more times a week/almost always. 7 questions in the second part are scored dichotomously as absent (0) and present (0), with higher scores indicating greater functional impairment. To make a thorough assessment of psychopathology, the CPSS yields scores on three sub-scales of reexperiencing, avoidance and hyperarousal. Foa, Cashman [18] found in the initial validation study of the CPSS that the instrument has high test–retest reliability ($r = .84$ for the total score) and inter consistency ($\alpha = .89$ for the total score). A good convergent validity, particularly high correlations with the Child Post-Traumatic Stress Disorder Reaction Index, was reported for the instrument. Although a clinical cut-off score of greater or equal to 11 was established in the initial validation study of the psychometric instrument, a recent clinical study

suggested a cut-off of 21.5 or higher is more appropriate for determining PTSD [20].

2.2.2. Child Post-Traumatic Stress Disorder Reaction Index (CPTSD-RI)

The CPTSD-RI is a 20-item self-report scale designed to assess the posttraumatic stress reactions of school-aged children and adolescents. The CPTSD-RI was one of most widely used measures for assessing PTSD among children and adolescents. It was reported that the measure correctly identified 78% of individuals who met the DSM criteria for PTSD by using a cut-off score of 40 or higher than 40 [35]. The reliability and validity study of the Turkish version of the measure was conducted in school-aged children who were survivors of an explosion in Turkey. For the Turkish version of the instrument, the test–retest reliability was .86 and internal consistency was .75 [36]. Gokler used the CPTSD-RI to assess the predictor variables of the PTSD symptoms of 519 children exposed to the 1999 Marmara Earthquake and reported that the CPTSD-RI showed high internal consistency (Cronbach's alpha = 0.84).

2.2.3. State and Trait Anxiety Inventory for Children (STAI-C)

This STAI-C was developed by Spielberger [37] to assess severity of state and trait anxiety among children. State anxiety connotes to the experienced anxiety under certain conditions and at a certain time and changes according to external factors. On the other hand, trait anxiety refers to the anxious feelings of the individual in general and reflects the individual's general predisposition to anxiety. Each scale composed of 20 multiple choice questions. Each item is scored through 0–2 according to the severity of the symptom. The reliability and validity study of the scale for the Turkish population was conducted by Özusta [38].

2.2.4. Child Depression Inventory (CDI)

The 27-item scale was developed by Kovacs [39]. Each item is scored on scale ranging from 0 to 2 according to the severity of the depressive symptoms. The reliability and validity study of the scale for the Turkish population was conducted by Öy [40]. For the Turkish version, internal consistency (alpha) was $\alpha = .77$, and test–retest reliability was $r = .80$. The specificity was 95% for the cut-off score of 19.

2.3. Statistical analysis

In the preliminary analyses descriptive statistics were run. Confirmatory factor analysis was performed to test original three-factor structure derived from the initial validation study by Foa, Johnson [19] which mainly maps on DSM-IV clusters of PTSD diagnosis. The Satorra-Bentler correction was utilized for deriving goodness of fit statistics. To assess reliability, internal consistency and temporal stability of scale scores over a 15-day interval were evaluated. Differences between high and low PTSD individuals were analyzed with one-way ANOVA models for the discriminant validity of the scale. Finally, Pearson

moment-product correlation coefficients were obtained. Significance threshold was held at $p < .05$.

3. Results

3.1. Descriptive statistics

Initially, we computed descriptive item statistics and test statistics for all of the psychometric tools. Item descriptive statistics are presented in Table 1.

Means and standard deviations of symptom severity for the total and sub-scales of the CPSS were calculated. Mean CPSS score was 18.54 (SD ± 11.14) for the global CPSS scores; 6.02 (SD ± 3.91) on the reexperiencing subscale; 6.72 (SD ± 4.92) on the avoidance scale, and 5.80 (SD ±3.88) on the arousal subscale.

3.2. Confirmatory factor analysis

We used confirmatory factor analysis to test validity of the original three-factor structure the CPSS based on DSM-IV of among Turkish children and adolescents. Goodness of fit was tested with a set of indices: RMSEA equal to .08 or lower, the Tucker-Lewis Index and Comparative Fit Index higher than .90 and Standardized RMR lower than .08. Confirmatory factor analysis with Satorra-Bentler correlation was run for the model specified that three factors intercorrelated. χ^2 value with a 116 degree of freedom was 143.77 ($p < .001$). The RMSEA value was .02 ($p < .05$). The Tucker-Lewis Index was .99 and Comparative Fit Index was 1.00 which were excessively higher than acceptable cut-off values. Finally, standardized RMR was .04. The model accounted for 35% of the total observed variance. Goodness of fit indexes revealed that original three-factor structure was confirmed in the analysis. Maximum likelihood estimations of factor loadings are presented in Table 2.

3.3. Reliability of the CPSS

As demonstrated in Table 1, for the total and subscale scores of the CPSS revealed good internal consistency of that total scores had a Cronbach alpha value of $\alpha = .89$, $\alpha = .77$ on reexperiencing subscale, $\alpha = .77$ on avoidance subscale, and $\alpha = .70$ on arousal subscale. Kuder-Richardson was KR = .80 for functional impairment.

To examine temporal reliability, we computed intra-class correlation coefficients between applications among 33 participants at two time points with a 15-day interval. Test-retest reliability of the scale was good. Intra-correlation coefficient for the total scores was $r = .88$ ($p < .01$); $r = .87$ for the reexperiencing subscale ($p < .01$), $r = .71$ for the avoidance subscale ($p < .01$), $r = .68$ for the arousal subscale ($p < .01$), and $r = .52$ on the impairment subscale ($p < .01$).

Table 1
Descriptive statistics and item statistics of the measures.

	n	α	Rjt	Inter-item r	M	SD	M range (items)	SD range (items)
Child PTSD Symptom Scale (CPSS)	445	.89	.39–.61	.15–.52	1.08	1.11	.69–1.43	1.01–1.23
CPSS – Reexperiencing	463	.77	.44–.60	.30–.49	1.21	1.09	0.94–1.43	1.02–1.16
CPSS – Avoidance	461	.77	.35–.57	.16–.52	0.95	1.10	0.69–1.15	1.01–1.16
CPSS – Hyperarousal	471	.70	.40–.50	.24–.41	1.154	1.15	0.99–1.35	1.11–1.23
Functional Impairment	461	.80	.49–.63	.24–.50	0.45	.50	0.35–0.53	.48–.71
Child Post-Traumatic Stress Disorder Reaction Index	445	.94	.41–.78	.10–.72	1.30	1.43	0.57–1.80	1.12–1.63
State and Trait Anxiety for Children (STAI-C)	479	.94	.27–.70	−.02–.70	1.82	0.75	1.29–2.32	0.57–1.29
STAI-State anxiety	479	.89	.29–.70	−.02–.70	1.79	0.73	1.29–2.32	0.57–1.29
STAI-Trait Anxiety	479	.90	.39–.65	.12–.57	1.84	0.76	1.52–2.08	0.65–0.88
Child Depression Inventory	.479	.88	.23–.58	−.04–.46	0.54	0.68	0.21–0.82	0.54–0.85

n, sample size; α, Cronbach's; rjt, corrected item-total correlations (range); inter-item r, Spearman inter-item correlations (range); M, mean; SD, standard deviation; M range (items), item means (range); SD range (items), item standard deviations (range).

3.4. PTSD diagnosis according to the CPSS and CPTSD-RI

When scored according to DSM-IV diagnostic criteria for PTSD, 58% of the sample had a PTSD diagnosis. Upon scoring according to the cut-off value suggested by the most recent research conducted by Hukkelberg, Ormhaug [20], individuals with a score of 21.5 or higher were 47% of the sample, classified in the high PTSD group. On the contrary, 28% of the sample were markedly affected with PTSD according to the cut-off criterion of the CPTSD-RI. Although there were considerable differences between diagnoses rates

derived from the CPTSD-RI and CPSS whether scored according to DSM-IV criteria or cut-off value, we found higher agreement of PTSD diagnoses with the CPTSD-RI and CPSS using cut-off score 21.5 (κ = 58) than with the CPSS diagnosis according to DSM-IV criteria (κ = 39). If the CPTSD-RI is accepted as a golden standard for current PTSD to compare with under- and over-scoring individuals of cut-off value on the CPSS, 87.7% of the sample were true positives and 75.5% of the sample were true negatives.

3.5. Percentage endorsement of PTSD symptoms

Participants reported 40 or higher scores than 40 on the CPTSD-RI determined as high PTSD subjects (N = 130; 27.6%). The frequencies of each individual CPSS item endorsed are presented by groups in Table 3. Percentages of endorsement rates were compared between the low and high PTSD groups by using the two proportion Z test. Children with high scores on the CPTSD-RI endorsed all of 17 symptoms more frequently than did subjects with low PTSD. The range of endorsement for individual items for the high PTSD group ranged from 59% to 93%, and the range for the low PTSD group was 33%–71%.

3.6. Comparison of symptom severity between low and high PTSD groups

Comparison of scale scores between low and high PTSD groups were conducted by running one-way analysis of variance models. Individuals with high PTSD had significantly higher scores on the total scores of the CPSS as well as reexperiencing, avoidance and arousal subscales of the CPSS. Not only did the scale scores increase in PTSD affected group, the effect sizes were considerably high as well (<.30). Individuals with high PTSD also reported high state and trait anxiety scores as compared to low suffering individuals. High PTSD children reported more severe child depression than did those who had lower levels of PTSD. Findings are demonstrated in Table 4.

Table 2
Maximum likelihood estimations of factor loadings.

	Reexperiencing	Avoidance	Hyperarousal	R^2
1. Upsetting thoughts	.65			0.42
2. Nightmares	.51			0.26
3. Flashbacks	.65			0.42
4. Upset by reminders	.66			0.44
5. Feelings in body	.69			0.48
6. Trying not to talk		.66		0.44
7. Avoid activities		.60		0.36
8. Cannot remember		.42		0.18
9. Loss of interest		.54		0.29
10. Emotional distance		.55		0.30
11. Restricted affect		.64		0.41
12. Future plans		.52		0.27
13. Trouble sleeping			.53	0.28
14. Irritable			.62	0.38
15. Concentration			.58	0.34
16. Overly careful			.52	0.27
17. Jumpy			.59	0.35
Variance explained	11.88%	13.24%	9.53%	34.65%

Table 3
Percentage endorsement of the Child PTSD Symptom Scale items.

	PTSD status [‡]					
	Normal (N = 341)		PTSD (N = 130)			
	N	Percentage %	N	Percentage %	Z	P
1. Upsetting thoughts	214	62.76%	119	91.54%	−8.04	<.000
2. Nightmares	163	47.80%	100	76.92%	−6.36	<.000
3. Flashbacks	199	58.36%	116	89.23%	−8.10	<.000
4. Upset by reminders	242	70.97%	121	93.08%	−6.67	<.000
5. Feelings in body	160	46.92%	109	83.85%	−8.77	<.000
6. Trying not to talk	180	52.79%	113	86.92%	−8.52	<.000
7. Avoid activities	124	36.36%	98	75.38%	−8.50	<.000
8. Cannot remember	113	33.14%	77	59.23%	−5.21	<.000
9. Loss of interest	160	46.92%	103	79.23%	−7.23	<.000
10. Emotional distance	158	46.33%	103	79.23%	−7.37	<.000
11. Restricted affect	143	41.94%	102	78.46%	−8.14	<.000
12. Future plans	146	42.82%	90	69.23%	−5.44	<.000
13. Trouble sleeping	150	43.99%	108	83.08%	−9.20	<.000
14. Irritable	197	57.77%	109	83.85%	−6.22	<.000
15. Concentration	201	58.94%	116	89.23%	−7.96	<.000
16. Overly careful	162	47.51%	96	73.85%	−5.59	<.000
17. Jumpy	149	43.70%	106	81.54%	−8.73	<.000

[‡] Total scores on the CPTSD-RI were not computed for eight participants because of missing responses.

3.7. Convergent and divergent validity

The convergent validity of the total scale score and subscale scores of the CPSS was assessed by computing Pearson product-moment correlation coefficients with severity rating obtained from the CPTSD-RI. Relatively strong correlation coefficients ranged from .65 to .76. We computed Pearson correlations of total and subscale scores of the CPSS with the State-Trait Anxiety Inventory for Children and Child Depression Scale. The correlations with anxiety and depression were generally mediocre and lower than the correlations with the CPTSD-RI. These results provided support for the convergent and divergent validity of the CPSS. Data are presented in Table 5.

Table 5
Pearson correlations between measures.

	Child PTSD Symptom Scale	Reexperiencing	Avoidance	Arousal
Child Posttraumatic Stress Disorder–Reaction Index	.76 **	.68 **	.67 **	.65 **
State Anxiety	.55 **	.42 **	.49 **	.53 **
Trait Anxiety	.65 **	.57 **	.55 **	.59 **
Child Depression Scale	.47 **	.31 **	.45 **	.45 **

** $p < .01$.

4. Discussion

The current study aimed to assess the psychometric properties of the CPSS in children and adolescents after 18 months exposure to a severe earthquake. For this purpose, descriptive item statistics were computed. In addition, replicability of the three-factor structure based on DSM-IV criteria was tested for the CPSS among a sample of Turkish youth. Construct validity of the scale was assessed by computing correlations of total and subscale scores of the CPSS with the CPTSD-RI, STAI for Children, and CDS scores. To examine the reliability, 15-day test retest intra-correlations and inter consistency of the CPSS were obtained. Turkish version of the CPSS revealed sound psychometric properties with good reliability and validity. Although the current data showed that the CPSS performs well as a self-report measure of PTSD symptom severity, the utility of the CPSS as a diagnostic instrument was questionable. The CPSS seems to be a practical instrument to use when time or other resource strains encumber a thorough diagnostic assessment with clinical interviews, the CPSS can be used as a proxy.

Most of the psychometric properties portrayed in the previous studies of the CPSS replicated in this study. Internal consistency of the CPSS was high for the total and subscales similar to initial validation study by Foa, Johnson [19] and subsequent psychometric analyses [21,24,25,41] with an exception of Hukkelberg, Ormhaug [20] who reported excessively poor internal reliability for the scale. Temporal

Table 4
Comparisons of psychological variables between groups.

	Groups							
	Low PTSD (N = 341)		High PTSD (N = 130)					
	Mean	SD	Mean	SD	F	df	p	Partial η^2
Child PTSD Symptom Scale	14.02	8.57	30.07	8.10	339.991	1, 469	<.001	.420
Reexperiencing	4.65	3.16	9.60	3.37	222.313	1, 469	<.001	.322
Avoidance	4.89	3.90	11.38	4.09	253.897	1, 469	<.001	.351
Arousal	4.49	3.32	9.09	3.10	188.342	1, 469	<.001	.287
Functional Impairment	2.76	2.33	4.01	2.09	27.911	1, 457	<.001	.058
State Anxiety	33.59	7.51	41.59	7.47	94.995	1, 425	<.001	.183
Trait Anxiety	33.86	7.47	44.87	7.09	202.094	1, 458	<.001	.306
Child Depression Scale	12.33	8.42	20.01	7.42	78.581	1, 448	<.001	.149

reliability of the instrument was generally reported through adequate to good in the studies, even methodological differences exist. Test–retest applications used in the prior studies markedly varied over time intervals through 1-week to 3-month. In the current data, test–retest reliability of the Turkish version of the CPSS in terms of intra-correlations between two applications over a 2-week interval, computed to assess the temporal stability was excessively good.

While the CPSS has been used in a number of studies and almost one of the few self-report measures of Child PTSD, psychometric properties of it have been moderately evaluated. Construct validity of the factor structure has received much more little attention so far. As the CPSS maps on severity of PTSD symptoms predicate in DSM-IV, research has generally focused on other features of the scale. In a preliminary factorial analysis almost a decade next to the initial validation study, Gudino and Rindlaub [22] tested and demonstrated the confirmation of three-factor structure of the CPSS among Latino children; whereas Hukkelberg and Jensen [41] found a four-factor model in which dysphoria accompanied to traditional three dimensions of PTSD best fit to the observed data. For the current data, consistent with Gudino and Rindlaub [22], we replicated the three-factor structure by using structural equation modeling. We did not tested alternative factor structures for PTSD symptoms because our aim was to test validity of the original three factors structures of the CPSS; whereas, in the literature some studies provided support by using the CPSS for a better fit of four- or five-factor structure models to the data collected from youth population [41,42]. In the adult literature, an extensive PTSD research focusing on factor structure has ensured strong evidence for either King, Leskin [43] numbing model or Simms, Watson [44] dysphoria model of PTSD which both of these models consisted of four factors. Furthermore, current definition of PTSD in the DSM-5 was revised to a four-structure diagnostic model and a dissociative subtype was added as a specifier. Therefore, additional studies addressing a developmentally more sensitive PTSD construct in children and adolescents are needed.

To date, it found in the psychometric investigations of the CPSS that significant connections of total and subscale scores of the CPSS with the CPTSD-RI were moderate to excellent [19,25] as well as with other measures of PTSD assessment in children and adolescents [20–22]. Correspondingly, strong correlations between ratings of these two instruments of PTSD were observed. Moreover, total and subscale scores of the CPSS were only moderately associated with scale scores of anxiety and depression. These results provided further evidence for construct validity of Turkish translation of the CPSS. Moreover, total scores and subscales of the CPSS significantly differed between low and high PTSD groups predicted by using CPTSD-RI cut-off point.

In the literature there has been a long debate on developmental sensitivity of PTSD diagnosis that is isomorphic to adult diagnostic criteria for trauma-exposed youngsters, particularly in DSM-IV. Scheeringa and colleagues offered a revision for youth population, called as PTSD-AA, and accumulated compelling evidence about PTSD-AA for diagnostic utility and predictive validity for later onset of the disorder [4,26,27]. What was rudimentary revision in this diagnostic approach was exclusion of two criteria including cannot remember an important part of the traumatic event (CPSS 8) and diminished feature plans (CPSS 12). Current data could not support evidence for the PTSD-AA modification, but in accordance with the initial validation study by Foa, Johnson [19] predicated in immediately 17 symptoms in the DSM-IV, young survivors of earthquake with high PTSD exhibited higher rates of 59% and 69%, respectively, than did individuals with low PTSD.

Data considering diagnostic utility of the CPSS were equivocal, inconsistent findings have been reported considering the sensitivity and specificity of this instrument. To date, research could not have replicated high sensitivity and specificity in Foa, Johnson [19] preliminary report at a cut-off score of 11 and higher. In the subsequent studies the CPSS generally revealed lower diagnostic performance, either for sensitivity or specificity, while all cut-off scores were higher than did Foa, Johnson [19] initial report and on a broad range 16–21.5 [20,23,25]. Current study did not examine diagnostic performance or define a cut-off score of the Turkish version of the CPSS, but extremely high prevalence rates of PTSD diagnosis with the CPSS based on either diagnostic criteria of DSM-IV (54%) or a cut-off point of 21.5 or greater (47%) recently proposed by Hukkelberg, Ormhaug [20] were salient as compared to CPTSD-RI diagnosed individuals (28%) after 18 months of Van earthquake. Thus, diagnostic utility of the CPSS requires more focus in further research and needs clarification.

This study has several limitations. First, our sample was relatively homogeneous that they were recruited from those who experienced a natural disaster. Also, we did not assessed for a history of prior traumatic experiences before or after Van earthquake. Thus, psychometric features of Turkish translation of the CPSS should be evaluated among individuals exposed to other types of adverse events, particularly interpersonal trauma such as physical and sexual assault. Second, the current study represents data collected from a youth community sample, consisting of survivors of a severe earthquake, psychometric properties of the CPSS should be examined in clinical samples, particularly individuals with pediatric PTSD. Third, the Turkish version of CPSS was examined for the three-factor structure whereas DSM 5 stipulated further criteria subsumed under four dimensions involving in children older than six years old. Further studies are needed to investigate differences between numbing and dysphoria models of PTSD among children and adolescents [45]. Finally, diagnostic utility of the Turkish translation was not assessed because of lack of using a diagnostic interview measure. It is a very necessity to examine specificity and sensitivity of this tool among Turkish children and adolescents as well as in further studies because of mixed results pertaining to the issue.

References

[1] Cohen JA, Scheeringa MS. Post-traumatic stress disorder diagnosis in children: challenges and promises. Dialogues Clin Neurosci 2009;11:91-9.

[2] Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic-stress-disorder in the National Comorbidity Survey. Arch Gen Psychiatry 1995;52:1048-60.

[3] Davidson JRT, Hughes D, Blazer DG, George LK. Posttraumatic-stress-disorder in the community—an epidemiologic-study. Psychol Med 1991;21:713-21.

[4] Scheeringa MS, Zeanah CH, Myers L, Putnam FW. Predictive validity in a prospective follow-up of PTSD in preschool children. J Am Acad Child Psychiatry 2005;44:899-906.

[5] Egger HL, Erkanli A, Keeler G, Potts E, Walter BK, Angold A. Test-retest reliability of the Preschool Age Psychiatric Assessment (PAPA). J Am Acad Child Psychiatry 2006;45:538-49.

[6] Carter AS, Briggs-Gowan MJ, David NO. Assessment of young children's social-emotional development and psychopathology: recent advances and recommendations for practice. J Child Psychol Psychiatry 2004;45:109-34.

[7] De Young AC, Kenardy JA, Cobham VE. Trauma in early childhood: a neglected population. Clin Child Fam Psychol 2011;14:231-50.

[8] Pine DS, Cohen JA. Trauma in children and adolescents: risk and treatment of psychiatric sequelae. Biol Psychiatry 2002;51:519-31.

[9] Elklit A. Victimization and PTSD in a Danish national youth probability sample. J Am Acad Child Psychiatry 2002;41:174-81.

[10] Giaconia RM, Reinherz HZ, Silverman AB, Pakiz B, Frost AK, Cohen E. Traumas and posttraumatic stress disorder in a community population of older adolescents. J Am Acad Child Psychiatry 1995;34:1369-80.

[11] Hawkins SS, Radcliffe J. Current measures of PTSD for children and adolescents. J Pediatr Psychol 2006;31:420-30.

[12] Reich W, Leacock N, Shanfield C. Diagnostic Interview for Children and Adolescents-Revised (DICA-R). St. Louis, MO: Washington University; 1994.

[13] Kaufman J, Birmaher B, Brent D, Rao U, Flynn C, Moreci P, et al. Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL): initial reliability and validity data. J Am Acad Child Psychiatry 1997;36:980-8.

[14] Newman E, Weathers FW, Nader K, Kaloupek DG, Pynoos RS, Blake DD, et al. Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA). Los Angeles: Western Psychological Services; 2004.

[15] Weiss DS, Marmar CR. The Impact of Events Scale-Revised. In: Wilson JP, & Keane TM, editors. Assessing Psychological Trauma and PTSD. New York: Guilford Press; 1997.

[16] Pynoos RS, Frederick C, Nader K, Arroyo W, Steinberg A, Eth S, et al. Life threat and posttraumatic stress in school-age children. Arch Gen Psychiatry 1987;44:1057-63.

[17] Briere J. Trauma Symptom Checklist for Children (TSCC). Odessa, FL: Psychological Assessment Resources; 1996.

[18] Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of posttraumatic stress disorder: The Posttraumatic Diagnostic Scale. Psychol Assess 1997;9:445-51.

[19] Foa EB, Johnson KM, Feeny NC, Treadwell KRH. The Child PTSD Symptom Scale: a preliminary examination of its psychometric properties. J Clin Child Psychol 2001;30:376-84.

[20] Hukkelberg SS, Ormhaug SM, Holt T, Wentzel-Larsen T, Jensen TK. Diagnostic utility of CPSS vs. CAPS-CA for assessing posttraumatic stress symptoms in children and adolescents. J Anxiety Disord 2013;28:51-6.

[21] Gillihan SJ, Aderka IM, Conklin PH, Capaldi S, Foa EB. The Child PTSD Symptom Scale: psychometric properties in female adolescent sexual assault survivors. Psychol Assess 2013;25:23-31.

[22] Gudino OG, Rindlaub LA. Psychometric properties of the Child PTSD Symptom Scale in Latino children. J Trauma Stress 2014;27:27-34.

[23] Kohrt BA, Jordans MJ, Tol WA, Luitel NP, Maharjan SM, Upadhaya N. Validation of cross-cultural child mental health and psychosocial research instruments: adapting the Depression Self-Rating Scale and Child PTSD Symptom Scale in Nepal. BMC Psychiatry 2011;11:127-44.

[24] Rachamim L, Helpman L, Foa EB, Aderka IM, Gilboa-Schechtman E. Validation of the Child Posttraumatic Symptom Scale in a sample of treatment-seeking Israeli youth. J Trauma Stress 2011;24:356-60.

[25] Nixon RD, Meiser-Stedman R, Dalgleish T, Yule W, Clark DM, Perrin S, et al. The child PTSD symptom scale: an update and replication of its psychometric properties. Psychol Assess 2013;25:1025-31.

[26] Scheeringa MS, Zeanah CH, Drell MJ, Larrieu JA. Two approaches to the diagnosis of posttraumatic stress disorder in infancy and early childhood. J Am Acad Child Psychiatry 1995;34:191-200.

[27] Scheeringa MS, Zeanah CH, Myers L, Putnam FW. New findings on alternative criteria for PTSD in preschool children. J Am Acad Child Psychiatry 2003;42:561-70.

[28] Meiser-Stedman R, Smith P, Glucksman E, Yule W, Dalgleish T. The posttraumatic stress disorder diagnosis in preschool- and elementary school-age children exposed to motor vehicle accidents. Am J Psychiatry 2008;165:1326-37.

[29] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-5). 5th ed. Washington, DC: American Psychiatric Publishing; 2013.

[30] Bal A, Jensen B. Post-traumatic stress disorder symptom clusters in Turkish child and adolescent trauma survivors. Eur Child Adolesc Psychiatry 2007;16:449-57.

[31] Jensen PS, Rubio-Stipec M, Canino G, Bird HR, Dulcan MK, Schwab-Stone ME, et al. Parent and child contributions to diagnosis of mental disorder: are both informants always necessary? J Am Acad Child Psychiatry 1999;38:1569-79.

[32] Vogel JM, Vernberg EM. Part 1: children's psychological responses to disasters. J Clin Child Psychol 1993;22:464-84.

[33] Korol M, Green BL, Gleser GC. Children's responses to a nuclear waste disaster: PTSD symptoms and outcome prediction. J Am Acad Child Psychiatry 1999;38:368-75.

[34] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-IV TR). 4th ed. Washington, DC: American Psychiatric Publishing; 2000.

[35] Pynoos RS, Goenjian A, Tashjian M, Karakashian M, Manjikian R, Manoukian G, et al. Posttraumatic stress reactions in children after the 1988 Armenian Earthquake. Br J Psychiatry 1993;163:239-47.

[36] Erden G, Kılıç EZ, Uslu Rİ, Kerimoğlu E. Çocuklar için Travma Sonrası Stres Tepki Ölçeği: Türkçe geçerlik, güvenirlik çalışması. Çocuk ve Gençlik Ruh Sağlığı Dergisi, 6; 1999. p. 143-9.

[37] Spielberger CD. Manual for the State-Trait Anxiety Inventory for children. PAlo Alto: Consulting Psychologists Press; 1973.

[38] Özusta Ş. State-Trait Anxiety Inventory for Children adaptation, validity and reliability study. Turk J Psychol 1995;10:32-44.

[39] Kovacs M. Rating scale to assess depression in school aged children. Acta Paedopsychiatr 1981;46:305-15.

[40] Öy B. Children's Depression Inventory: depression scale for children: study of validity and reliability. Turk Psikiyatri Derg 1991;2:132-7.

[41] Hukkelberg SS, Jensen TK. The dimensionality of posttraumatic stress symptoms and their relationship to depression in children and adolescents. J Trauma Stress 2011;24:326-33.

[42] Wang R, Wang L, Li Z, Cao C, Shi Z, Zhang J. Latent structure of posttraumatic stress disorder symptoms in an adolescent sample one month after an earthquake. J Adolesc 2013;36:717-25.

[43] King D, Leskin G, King L, Weathers F. Confirmatory factor analysis of the clinician-administered PTSD scale: evidence for the dimensionality of posttraumatic stress disorder. Psychol Assess 1998;10:90-6.

[44] Simms LJ, Watson D, Doebbeling BN. Confirmatory factor analyses of posttraumatic stress symptoms in deployed and nondeployed veterans of the Gulf War. J Abnorm Psychol 2002;111:637-47.

[45] Shevlin M, McBride O, Armour C, Adamson G. Reconciling the differences between the King et al. (1998) and Simms et al. (2002) factor models of PTSD. J Anxiety Disord 2009;23:995-1001.