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STANDARDIZATION OF A TRAUMA SYMPTOMS CHECKLIST FOR CHILDREN

PARVANEH MOHAMMADKHANI, Ph.D., *MOHAMMAD REZA MOHAMMADI, M.D., MOHAMMAD ALI NAZARI, M.Sc., EBRAHIM REZAEE DOGAHEH, M.Sc., **MASOUD NIKFARJAM, M.D., AND ***HEDIEH AZADMEHR, M.A.

*From the Social Welfare & Rehabilitation Sciences University, Tehran, *Rosbeh Hospital, Tehran University of Medical Sciences, Tehran, I.R. Iran, the **Psychiatry Department, Shahrekord University of Medical Sciences, Sharekord, I.R. Iran, and the ***Welfare Organization, Tehran, I.R. Iran.*

ABSTRACT

Background: The aim of this study was to standardize and assign validity and reliability of the Trauma Symptom Checklist for Children (TSCC-A).

Methods: Normative data for the TSCC-A were based on 3042 students participating in a prevalence child abuse study in 19 different locations of Tehran and 140 participants who had been refered to the run-away children centers in Tehran. After the TSCC was validated on run-away and abused children, it was made available to researchers doing larger studies on a normative group.

Results: Reliability analysis of the TSCC-A scales in the normative sample demonstrated high internal consistency. The evidence for its validations (convergent, discriminant and construct validity) showed that they were significantly acceptable.

Conclusion: This paper presents data demonstrating the psychometric reliability and validity of the TSCC-A scales in the Iranian student population. We suggest to include the TSCC-A in a battery of relevant standardized tests.

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Keywords: Standardization, Trauma Symptoms Checklist, Iranian children.

INTRODUCTION

A number of large-scale studies indicate that children and adolescents are relatively frequent victims of interpersonal violence,[1] especially in the urban environment.[2,3]

Singer et al.[3] surveyed 3,735 students in six geographically and economically diverse high schools in Ohio and Colorado and found that when all sites of abuse were considered, 33% to 44% of male adolescents reported being slapped/hit/punched at school, and 3% to 22% reported being mugged in their own neighborhoods. In addition, 3% to 33% of male adolescents reported being shot at or shot within the preceding year, and 6% to 16% reported being attacked or stabbed with a knife. They also found that 12% to 17% of high school females reported having been made to engage in at least one sexual act against their wish in the previous year. Even higher rates were found for male and female student's reports of witnessing violent acts against others. These various traumatic experiences were associated with significant psychological symptomatology.

Also many researches have documented high rates of childhood sexual abuse, especially among adult psychiatric patients.[4] Further, numerous studies have investigated an array of long-term effects related to sexual abuse, including symptoms of depression, dissociation, anxiety, posttraumatic stress, somatization and even eat-

Corresponding author: Parvaneh Mohammadkhani, Parmohamir@yahoo.com Tel: 009821-22416405, Evin, Koodakyar St., University of Welfare & Rehabilitation Sciences, Tehran, I.R. Iran.

ing disturbances.[5] Despite the extensive research in this area, relatively little attention has been given to the development of instruments that are sensitive to the specific symptomatology of survivors of sexual abuse. Many studies have used conventional psychological instrument scales to measure the impact of abuse, such as the Revised Symptoms Checklist-90 (SCL-90-R)[6] or Beck Depression Inventory (BDI).[7] Other studies have used instruments to measure single sequelae of abuse, such as the Dissociative Experience Scale (DES).[8]

Although Sicher et al.[9] studied the way of child abuse identification, it is clear that no single measure of children's functioning can infallibly diagnose child abuse, and no single pattern of problems has been found to occur following abuse.[10] For these situations Achenbach[10] believes that for children, the Child Behavior Checklist (CBCL)[11] and other sources of data, such as the Youth Self Report and Teacher Report Form (YSR, TRF),[9,10] can also be used in conjuction with the CBCL to evaluate children progress following abuse.

Recently, Briere[12] developed the Trauma Symptom Checklist for Children-44 (TSCC-A) to measure a complex of symptoms associated with the long-term effects of sexual and physical abuse. The Trauma Symptom Checklist for Children (TSCC) is a self-report measure of posttraumatic distress and related psychological symptomatology; it is intended for use in the evaluation of children who have experienced traumatic events, including childhood physical or sexual abuse, victimization by peers (e.g., physical or sexual assault), major losses, the witnessing of violence done to others, and natural disasters.

The present study attempted to standardize TSCC-A in a representative sample of junior high school students in Iran, and to evaluate the criterion-related validity of TSCC-A and it's sub-scales using a clinical group (runaway boys). One might expect that there are differences on the TSCC-A scores of sexually, physically or psychologically abused and non-abused students.

PATIENTS AND METHODS

Participants

In this study, participants were combined into two groups: (a) a group of school children from Tehran junior high schools (male & female) as a normative sample (n= 3042), and (b) a group of runaway children (male & female) as a clinical group (n= 141).

The normative sample was selected through a multiple stage randomized sampling from 452,250 junior high school students of 19 geographically and economically diverse regions of Tehran.The demographics information of the normative sample and clinical group are presented in Table I.

Instruments

The participants were asked to fill in the Trauma Symptoms Checklist for Children (TSCC-A)[12] and Child Abuse Self-Report Scale (CASRS),[13] for assessing TSCC-A convergent and construct validity. Table II contains a brief description of TSCC-A validity and clinical scales and sub-scales.

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Table I. Demographic infomation of normative and clinical samples.

Variable	Normative Sample				Clinical Group			
	N	Percentage	M	SD	N	Percentage	M	SD
Sex								
Male	1589	52.20	-	-	81	57.4	-	-
Female	1453	47.80	-	-	57	40.4	-	-
Not indicated	-	-	-	-	3	2.1	-	-
Total	3042	100	-	-	141	100	-	-
Age								
11,12	909	29.90	-	-	28	19.8	-	-
13	1015	33.40	-	-	21	14.9	-	-
14	724	23.80	-	-	33	23.4	-	-
15,16	236	7.80	-	-	59	41.9	-	-
Not indicated	156	5.12	-	-	-	-	-	-
Total	3042	100	13.09	0.94	141	100	13.98	1.58

Note: Total N= 3183

Table II. Brief description of TSCC-A validity and clinical scales.

Scale	Item content
Validity	
Underresponse (UND)	Consists of the number of 0s endorsed for those items least likely to receive a 0 in the normative sample. Reflects a tendency toward denial, a general underendorsement response set, or a need to appear unusually symptom-free.
Hyper-response (HYP)	Consists of the number of 3s marked on diverse items that rarely received a 3 in the normative sample. Indicates a general overresponse to TSCC items, a specific need to appear especially symptomatic, or a state of being overwhelmed by traumatic stress.
Clinical	
Anxiety (ANX)	Generalized anxiety, hyperarousal, and worry; specific fears (e.g., of men, women, or both; of the dark; of being killed); episodes of free-floating anxiety; and a sense of impending danger.
Depression (DEP)	Feelings of sadness, unhappiness, and loneliness; episodes of tearfulness; depressive cognitions such as guilt and self-denigration: and self-injuriousness and suicidality.
Anger (ANG)	Angry thoughts, feeling, and behaviors, including feeling mad, feeling mean, and hating others; having difficulty de-escalating anger; wanting to yell at or hurt people; and arguing and fighting.
Posttraumatic Stress (PTS)	Posttraumatic symptoms, including intrusive thoughts, sensations, and memories of painful past events; nightmares; fears; and cognitive avoidance of painful feelings.
Dissociation (DIS)	Dissociative symptomatology, including derealization; one's mind going blank; emotional numbing; pretending to be someone else or somewhere else; daydreaming; memory problem; and dissociative avoidance. Has two subscales: DIS-O (Overt Dissociation) and DIS-F (Fantasy).

validity, each participant was asked to fill in Self-Esteem inventory[14] and Child Abuse Self-Report Scale (CASRS).[13]

CASRS is a standard and adjusted scale for Iranian children with 38-items and four sub-scales: 14 items for psychological abuse, 11 items for neglect, 8 items for physical abuse and finally 5 items for sexual abuse.[13]

RESULTS

Reliability and validity

The following section describes the reliability and validity evidence for TSCC-A using alpha Cronbach and test-retest.

Reliability

Reliability analysis of the TSCC-A scales in the normative sample demonstrated high internal consistency for two of the scales (α ranges from 0.80 to 0.83), as presented in Table III. The remaining clinical scales and subscales except DIS-F were moderately reliable (α ranges from 0.70 to 0.79). The shorter DIS-F sub-scale being somewhat less reliable (α= 0.53). The two validity scales, UND and HYP had α coefficients of 0.71 and 0.58 respectively. As demonstrated in Table IV, the test-retest reliability coefficients for 70 subjects after 2 weeks are also at an acceptable level.

A) Scale intercorrelations

TSCC-A clinical scales and sub-scales intercorrelations in the normative sample ranged from 0.51 (DIS-F with ANX) to 0.93 (DIS-O with DIS). As indicated in Table V, UND scale was negatively correlated with all clinical scales, ranging from –0.28 (with HYP) to –0.68 (with PTS). HYP was most associated with ANX (r= 0.64) and least correlated with DIS-F (r= 0.37) subscale.

B) Criterion-related validity

The present study attempted to evaluate the criterion-related validity of TSCC-A using a clinical sample (runaway group). It was hypothesized that there would

be differences on TSCC-A scales between runaway and normative samples. As presented in Table V, t-test indicates that runaway subjects compared to the normative sample, obtained significantly higher scores on the total TSCC-A scales and sub-scale, except for UND. As it was expected, runaway subjects obtained significantly lower scores on UND scale (see Table VI).

C) Convergent and discriminant validity

Several studies suggest that TSCC-A scales covary in expected ways with other available measures correlating most with scales sharing similar content (concurrent validity) and least with scales of less similar content (discriminant validity). So in this study, we utilized the "Child Abuse Self Report Scale" (CASRS) (Mohammadkhani et al, 2003) to assign concurrent validity, and the Self-Esteem inventory (Coopersmith, 1976) to measure discriminant validity (Table VII). The data suggest significant convergent and discriminant validity of the TSCC-A.

D) Construct validity

As a measure of posttraumatic stress and related symptoms, the TSCC not only should correlate in meaningful ways with other similar measures, but scale scores also should (a) be higher in samples of children with histories of stressful or traumatic events, (b) increase in the presence of more severe trauma (perhaps especially in PTS and DIS scales). So we examined the relationship between abuse (physical, psychological, sexual, neglect) and TSCC-A scores (Table VIII).

The data represent that abused children reported significantly higher symptoms particularly in depression, anxiety, anger scales and overt dissociation subscale than the non-abused group.

Calculation norms

Normative data were derived for each TSCC-A scale and sub-scales from the normative sample data based upon age by sex combination. As the T scores for each scale and sub-scale, according to sex and age, are provided in the manual of TSCC-A, we also calculated the means and standard deviations for TSCC-A scales and sub-scales according to each sex and age group (see Table IX and Table X).

Table III. Internal consistency reliability of TSCC-A scales by α Cronbach.

UND	HYP	ANX	DEP	ANG	PTS	DIS	DIS-O	DIS-F
0.71	0.58	0.79	0.83	0.80	0.74	0.79	0.70	0.53

Table IV. Reliability of TSCC-A scales by test-retest.

UND	HYP	ANX	DEP	ANG	PTS	DIS	DIS-O	DIS-F
0.69	0.53	0.76	0.88	0.75	0.86	0.75	0.70	0.69

Table V. Intercorrelations between TSCC-A scales and its sub-scales.

Scale	HYP	ANX	DEP	ANG	PTS	DIS	DIS-O	DIS-F
UND	0.28	0.65	0.65	0.64	0.68	0.61	0.54	0.55
HYP		0.64	0.55	0.40	0.31	0.54	0.55	0.39
ANX			0.69	0.57	0.77	0.67	0.64	0.51
DEP				0.68	0.66	0.72	0.69	0.55
ANG					0.58	0.66	0.61	0.53
PTS						0.71	0.67	0.55
DIS							0.93	0.80
DIS-O								0.53

Table VI. TSCC-A scales and sub-scales differences between normative and clinical groups.

Scale	Groups	M	SD	t-test
UND	Normative	1.61	1.59	12.30
	Clinical	4.24	2.48	
HYP	Normative	1.77	1.48	19.69
	Clinical	0.37	0.77	
ANX	Normative	1.48	4.98	12.58
	Clinical	5.97	4.85	
DEP	Normative	13.93	5.15	17.88
	Clinical	5.89	5.03	
ANG	Normative	11.08	5.27	14.27
	Clinical	5.23	4.57	
PTS	Normative	12.74	4.77	11.74
	Clinical	7.54	4.94	
DIS	Normative	9.73	4.94	11.26
	Clinical	4.98	4.46	
DIS-O	Normative	6.44	3.69	11.37
	Clinical	3.17	3.20	
DIS-F	Normative	3.29	1.88	8.66
	Clinical	1.84	1.89	

$p< 0.001$

Table VII. Correlations between TSCC-A and other psychometric instruments.

	CASRS sub-scales			Self esteem inventory	
	Psychological Abuse	Neglect	Physical Abuse	Sexual Abuse	Self esteem
UND	-0.47	-0.16	-0.30	-0.26	0.46
HYP	0.39	0.17	0.31	0.25	-0.34
ANX	0.51	0.18	0.35	0.30	-0.48
DEP	0.68	0.32	0.47	0.37	-0.64
ANG	0.58	0.28	0.41	0.36	-0.52
PTS	0.50	0.17	0.35	0.30	-0.45
DIS	0.57	0.24	0.40	0.35	-0.54
DIS-O	0.53	0.26	0.40	0.36	-0.53
DIS-F	0.44	0.14	0.28	0.25	-0.40

Table VIII. Comparison between abused and non-abused children.

TSCC-A Scales	Groups	M	SD	t-test	α
UND	Abused	5.55	2.73	2.24	$p< 0.02$
	Non-abused	6.46	2.24		
HYP	Abused	0.43	0.90	3.07	$p<0.001$
	Non-abused	0.05	0.23		
ANX	Abused	5.45	5.75	3.16	$p<0.002$
	Non-abused	2.94	3.63		
DEP	Abused	5.86	6.93	4.59	$p<0.0001$
	Non-abused	1.94	2.17		
ANG	Abused	5.30	6.05	3.80	$p<0.0001$
	Non-abused	2.22	3.51		
PTS	Abused	6.53	5.78	2.93	$p<0.004$
	Non-abused	4.09	3.99		
DIS	Abused	4.25	5.17	2.87	$p<0.005$
	Non-abused	2.14	3.69		
DIS-O	Abused	2.98	4.04	3.8	$p< 0.02$
	Non-abused	1.26	2.69		
DIS-F	Abused	1.50	2.09	2.04	$p<0.04$
	Non-abused	0.93	1.21		

$p< 0.002$

DISCUSSION

This study presented data demonstrating the psychometric reliability and validity of the comprising TSCC-A in the Iranian student population. We also presented the normative comparisons and T scores, which can be used to interpret the child level of symptomatology. These scores are standardized transformations of the raw scale scores, with the mean of 50 and SD of 10. Similar to percentile scores, T scores provide information about the individual's scores in relation to the scores of subjects in the standardization sample.

But as Laviviere has written (see Achenbach)[9] "it is clear that no single measure of children's functioning can infalliby diagnose child abuse, and no single pattern of problems has been found to occur following trauma (abuse)", TSCC-A data should not be considered in isolation. The evaluator asked to assess a traumatized child is advised to include the TSCC in a battery of relevant standardized tests, to consider test findings in the context of interview and to use corollary information as necessary.

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Table IX. Raw-to T-Score conversions for TSCC-A scales and sub-scales for girls (Age 13-16).

Scales / Age		T scores								
		UND	**HYP**	**ANX**	**DEP**	**ANG**	**PTS**	**DIS**	**DIS-O**	**DIS-F**
11&12	M	4.30	0.48	7.05	5.78	4.42	7.99	4.79	3.07	1.78
	SD	2.55	0.87	5.24	5.16	4.31	5.35	4.37	3.22	1.74
13	M	3.47	0.43	7.65	6.97	5.94	0.65	5.65	3.55	2.12
	SD	2.28	0.80	5.09	5.22	5.86	4.87	4.77	3.39	1.96
14	M	3.45	0.44	7.35	7.56	5.62	8.89	6.22	3.81	2.43
	SD	2.21	0.84	5.20	5.67	4.85	4.98	4.83	3.36	2.10
15&16	M	3	0.67	8.10	10.68	7.79	11	7.49	5.08	2.5
	SD	2.23	0.99	5.39	5.93	5.52	6.07	5.35	4.03	1.98

$p< 0.002$

Table X. Raw-to T-Score conversions for TSCC-A scales and sub-scales for boys (Age 13-16).

Scales / Age		T scores								
		UND	**HYP**	**ANX**	**DEP**	**ANG**	**PTS**	**DIS**	**DIS-O**	**DIS-F**
11&12	M	4.87	0.27	4.80	4.65	4.42	4.16	2.58	1.64	1.58
	SD	2.50	0.69	4.09	4.17	4.23	4.19	3.03	1.83	1.80
13	M	4.79	0.26	4.55	4.71	4.85	4.31	2.76	1.56	1.58
	SD	2.45	0.65	4.07	4.13	4.16	3.89	2.63	1.83	1.80
14	M	4.38	0.27	4.75	5.31	5.14	4.48	2.95	1.54	1.58
	SD	2.41	0.66	3.92	4.58	4.22	3.85	2.94	1.59	1.80
15&16	M	5.07	0.27	3.73	5.19	5.15	4.55	3.00	1.53	1.58
	SD	2.53	0.67	3.72	4.48	4.27	4.27	3.09	1.87	1.80

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