



CLINICAL RESEARCH ARTICLE



## Psychometric evaluation of the UCLA PTSD Reaction Index (PTSD RI-5) in a Turkish Clinical sample of trauma-exposed children

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### ABSTRACT

**Objective:** Trauma victimization is common among children, however, a significant proportion of trauma victims go unrecognized unless they are thoroughly assessed, even in child psychiatry clinics. The aim of this study was to evaluate the psychometric properties and diagnostic accuracy of the Turkish version of the UCLA PTSD Reaction Index for DSM-5 (PTSD RI-5) in a clinical sample of trauma-exposed children and adolescents.

**Method:** A total of 208 children and adolescents admitted to the child psychiatry clinic, each of whom had a history of at least one traumatic event, were evaluated with the PTSD RI-5 to investigate trauma history and PTSD symptoms. All participants also completed the Revised Child Anxiety and Depression Scale (RCADS) and 64 participants were assessed with a semi-structured diagnostic interview for PTSD and depression.

**Results:** Internal consistency for the total scale was high (Cronbach's  $\alpha = 0.91$ ) and the confirmatory factor analysis (CFA) supported the four-factor structure of the PTSD RI-5 (CFI = 0.915, TLI = 0.902, RMSEA = 0.062). ROC analysis showed strong diagnostic accuracy (AUC = 0.94).

**Conclusion:** The Turkish version of the PTSD RI-5 may be a reliable and valid tool for diagnosing PTSD in clinical samples and may improve diagnosis and treatment outcomes by identifying unrecognized trauma-related symptoms.

### Evaluación psicométrica del índice de reacción al TEPT de la UCLA (PTSD RI-5) en una muestra clínica turca de niños expuestos a traumas

**Objetivo:** La victimización por traumas es común entre los niños, sin embargo, una proporción significativa de víctimas de traumas no son reconocidas a menos que sean evaluadas exhaustivamente, incluso en clínicas de psiquiatría infantil. El objetivo de este estudio fue evaluar las propiedades psicométricas y la precisión diagnóstica de la versión turca del índice de reacción al TEPT de la UCLA para el DSM-5 (PTSD RI-5 en su sigla en inglés) en una muestra clínica de niños y adolescentes expuestos a traumas.

**Método:** Un total de 208 niños y adolescentes ingresados en la clínica de psiquiatría infantil, cada uno de los cuales tenía antecedentes de al menos un evento traumático, fueron evaluados con el PTSD RI-5, para investigar los antecedentes de trauma y los síntomas de TEPT. Todos los participantes también completaron la Escala revisada de ansiedad y depresión infantil (RCADS en su sigla en inglés) y 64 participantes fueron evaluados con una entrevista diagnóstica semiestructurada para TEPT y depresión.

**Resultados:** La consistencia interna de la escala total fue alta ( $\alpha$  de Cronbach = 0.91) y el análisis factorial confirmatorio (AFC) respaldó la estructura de cuatro factores del PTSD RI-5 (CFI = 0.915, TLI = 0.902, RMSEA = 0.062). El análisis ROC mostró una gran precisión diagnóstica (AUC = 0.94).

**Conclusión:** La versión turca del PTSD RI-5 puede ser una herramienta confiable y válida para diagnosticar el TEPT en muestras clínicas y puede mejorar los resultados del diagnóstico y del tratamiento al identificar síntomas no reconocidos relacionados con el trauma.

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### PALABRAS CLAVE

TEPT; niño y adolescente; herramienta de evaluación; propiedades psicométricas

### HIGHLIGHTS

- Posttraumatic stress disorder (PTSD) symptoms are heterogeneous, especially in polyvictimized children and adolescents who have experienced chronic and interpersonal trauma.
- In low- and middle-income countries, traumatic event screening and PTSD diagnosis may be overlooked in child and adolescent psychiatry clinics with limited mental health resources.
- The psychometric properties of the UCLA PTSD Reaction Index for DSM-5 were examined for the first time in a population selected exclusively from a clinical sample to assess validity, reliability, and diagnostic accuracy.

## 1. Introduction

Exposure to traumatic events among children and adolescents is a pervasive global issue, significantly increasing the risk of developing severe mental disorders such as posttraumatic stress disorder (PTSD)

and depression. Studies across different countries have shown that approximately two-thirds of the general population have experienced at least one traumatic event in their lifetime, with about half experiencing two or more events (Benjet et al., 2016; Copeland et al., 2007; McLaughlin et al., 2013;

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Trautmann & Wittchen, 2018). A systematic review assessing the global prevalence of violence against children, based on data from 96 countries, determined that at least 50% of children in Asia, Africa, and North America had been exposed to violence in recent years (Hillis et al., 2016). Moreover, studies that define traumatic events more broadly than the DSM-IV A criterion (e.g. bullying, parental separation, racial trauma) report even higher prevalence rates (Gunaratnam & Alisic, 2017).

Exposure to trauma is a serious public health problem with potentially devastating effects on the physical and psychological health of a proportion of exposed individuals (Watson, 2019). Notably, trauma exposure is more prevalent in low- and middle-income countries (LMICs) than in high-income countries, yet contributions to the literature from these regions are limited. A study examining the global nature of traumatic stress research found that a significant portion of peer-reviewed articles focused on high-income countries, with 87% of research targeting these regions and 51% of all articles discussing studies conducted in the United States (Fodor et al., 2014). A more recent study found consistent results, indicating that only one-tenth of the articles in the literature originate from LMICs (Robson et al., 2019). Although recent studies from low- and middle-income countries have begun contributing valuable data to the literature (Stupar et al., 2021; Yatham et al., 2018), further research is essential, as the majority of children and adolescents worldwide reside in these regions (Erskine et al., 2017). This data shows that LMICs are underrepresented in the literature, highlighting the need for studies conducted in these countries.

As a middle-income country, Turkey has focused more on small-sample studies of specific groups, such as refugees, certain ethnic groups, conflict zones, and survivors of natural disasters, rather than large-scale studies examining the prevalence of traumatic events and PTSD in a national sample (Eksi & Braun, 2009; Gormez et al., 2018; Gunes & Guvenmez, 2020; Nasıroğlu & Çeri, 2016; Yektaş et al., 2021). In 2008, with the support of UNICEF, a study on child abuse and domestic violence in Turkey was conducted ( $n = 2216$ ), revealing that 51% of the sample had been exposed to emotional abuse, 43% to physical violence, 25% to neglect, and 3% to sexual abuse (Oral et al., 2010).

The rates of PTSD among children and adolescents exposed to traumatic events vary significantly across studies. The most comprehensive data on the risk of developing PTSD in children and adolescents following trauma has been obtained from a meta-analysis, which shows that approximately 16% of those exposed to trauma will develop PTSD (Alisic et al., 2014). Trauma exposure can disrupt developmental trajectory, leading to attention and learning problems,

difficulties in emotion regulation, and relational issues, as well as increasing the risk of psychiatric and physical illnesses in adulthood (Felitti et al., 1998; Nilaweera et al., 2023; Teicher et al., 2003; van der Kolk, 2005). The complex nature of trauma symptoms can complicate the diagnosis of PTSD in children and adolescents.

Given the prevalence of traumatic events and the high risk of PTSD following these experiences, it is crucial to clinically diagnose PTSD and determine interventions to help individuals regain their functionality. The American Academy of Child and Adolescent Psychiatry (AACAP) Practice Parameter recommends routine screening for traumatic experiences and PTSD symptoms during the initial psychiatric evaluation, using language appropriate to the child's developmental level, based on DSM criteria (Cohen et al., 2010). The UCLA Posttraumatic Stress Disorder Reaction Index for DSM-5 (PTSD RI-5) was developed to comprehensively assess the history of traumatic events and PTSD symptoms in children and adolescents according to DSM-5 criteria (Kaplow et al., 2020). Initially developed in 1985 by the UCLA Trauma Psychiatry Program as a screening questionnaire for children and adolescents based on DSM-III criteria (Frederick, 1985), the tool has been updated over time with DSM-III-R and DSM-IV versions (Steinberg et al., 2004). Its latest version, the PTSD RI-5, incorporates the DSM-5 changes and is used to assess trauma history and PTSD symptoms in children and adolescents aged 7–18 years (Kaplow et al., 2020). It is utilized for both the initial assessment of PTSD and monitoring responses to clinical interventions, and studies conducted in different populations have demonstrated its good validity and reliability (Doric et al., 2019; Takada et al., 2018).

Although PTSD RI-5 has shown to be valid and reliable in different countries, the most previous studies have included limited (Kaplow et al., 2020; Takada et al., 2018) or no clinical samples (Doric et al., 2019; Modrowski et al., 2021), limiting the validity of the data obtained in such contexts. Children exposed to traumatic events, especially interpersonal, chronic and repetitive traumatic events, may experience impairments in cognitive, language, motor skills, attention, emotion regulation and relationship difficulties depending on their stage of development. These problems can lead to a wide range of heterogeneous symptoms that complicate the understanding of the current situation of these children and can result in the reduction of trauma-related problems to unrelated comorbidities (van der Kolk, 2005). Furthermore, in countries where mental health services are inadequate, traumatized children are often seen in child psychiatry clinics in public hospitals, which serve a large number of children in a limited amount of time (Kazlauskas et al., 2016). Therefore, validated

screening and diagnostic tools for traumatized children are needed for accurate diagnosis and appropriate treatment, but research in this population is scarce.

The main aim of the present study was to validate and assess the reliability of the PTSD RI-5 in a clinical sample of children who may have experienced multiple and chronic traumatic events and possible comorbid diagnoses. While only the original study validated the diagnostic accuracy of the PTSD RI-5 using a semi-structured diagnostic tool (Kaplow et al., 2020), our study aims to extend this validation to a clinical sample. Additionally, we also aim to assess the test-retest reliability of the PTSD RI-5, which has not yet been investigated in the literature. Another aim of this study is to determine the prevalence of PTSD in a clinical sample of trauma-exposed children, thereby contributing valuable data to the literature, particularly in the context of LMICs, where such information is currently limited. Finally, this research also examines the applicability of assistive tools in clinical assessment processes for our population. By doing so, we aim to enhance diagnostic accuracy and improve treatment and follow-up strategies.

## 2. Method

### 2.1. Participants

The sample consisted of 208 children and adolescents aged 7–18 years who had experienced at least one traumatic event and who were admitted to the Child and Adolescent Psychiatry outpatient clinic of Istanbul University Istanbul Faculty of Medicine between January and June 2024. Children who were identified by the doctors working at the clinic as having experienced at least one traumatic event were referred for detailed assessment. Children and their parents were given detailed information about the study and verbal assent was obtained from the child and written consent was obtained from the parent. The flow diagram of the study is shown in Figure 1.

### 2.2. Procedure

Firstly, the PTSD RI-5 assessment tool was administered by the clinician to the children and adolescents who agreed to participate. The Trauma History and Trauma Details sections were administered by the clinician. The PTSD Symptom Scale was completed by children who were able to comply. The Stress and Impairment in Functioning section was completed by the clinician at the end of the interview. In interviews with children aged 7–9 years, additional information about the trauma history was sometimes obtained from the parents. The clinician assisted children when they needed help to complete the scale.

Secondly, the ‘Child Anxiety and Depression Scale-Revised (RCADS)’ was completed by the child or adolescent and parents completed the sociodemographic data form. The Major Depressive Disorder (MDD) and PTSD sections of the Kiddie Schedule for Affective Disorders and Schizophrenia present version for DSM-5 (K-SADS) were administered by a clinician in a different interview to 64 individuals randomly selected from the study group. To evaluate test-retest reliability, 51 participants were called back for another interview 2–4 weeks later, and the PTSD RI-5 was administered again.

At the end of the assessments, the child and parents were informed about the results, and the findings were shared with the psychiatrist treating the child, with permission of the parents.

In this study, participants’ assessment interviews (PTSD RI-5 and K-SADS) were conducted by two clinicians (RSK and BNK). To assess inter-rater reliability, both clinicians administered the PTSD RI-5 and K-SADS to the same participants ( $n = 10$ ) at separate times at the beginning of the study. The Cohen’s Kappa values of 1.00 for PTSD RI-5, 0.8 for KSADS PTSD and 0.78 for KSADS MDD indicate high consistency of the interviews.

This study received institutional review board approval from the Istanbul University Istanbul Faculty of Medicine Clinical Research Ethics Committee on 21.12.2023 (approval number 2312320).

### 2.3. Instruments

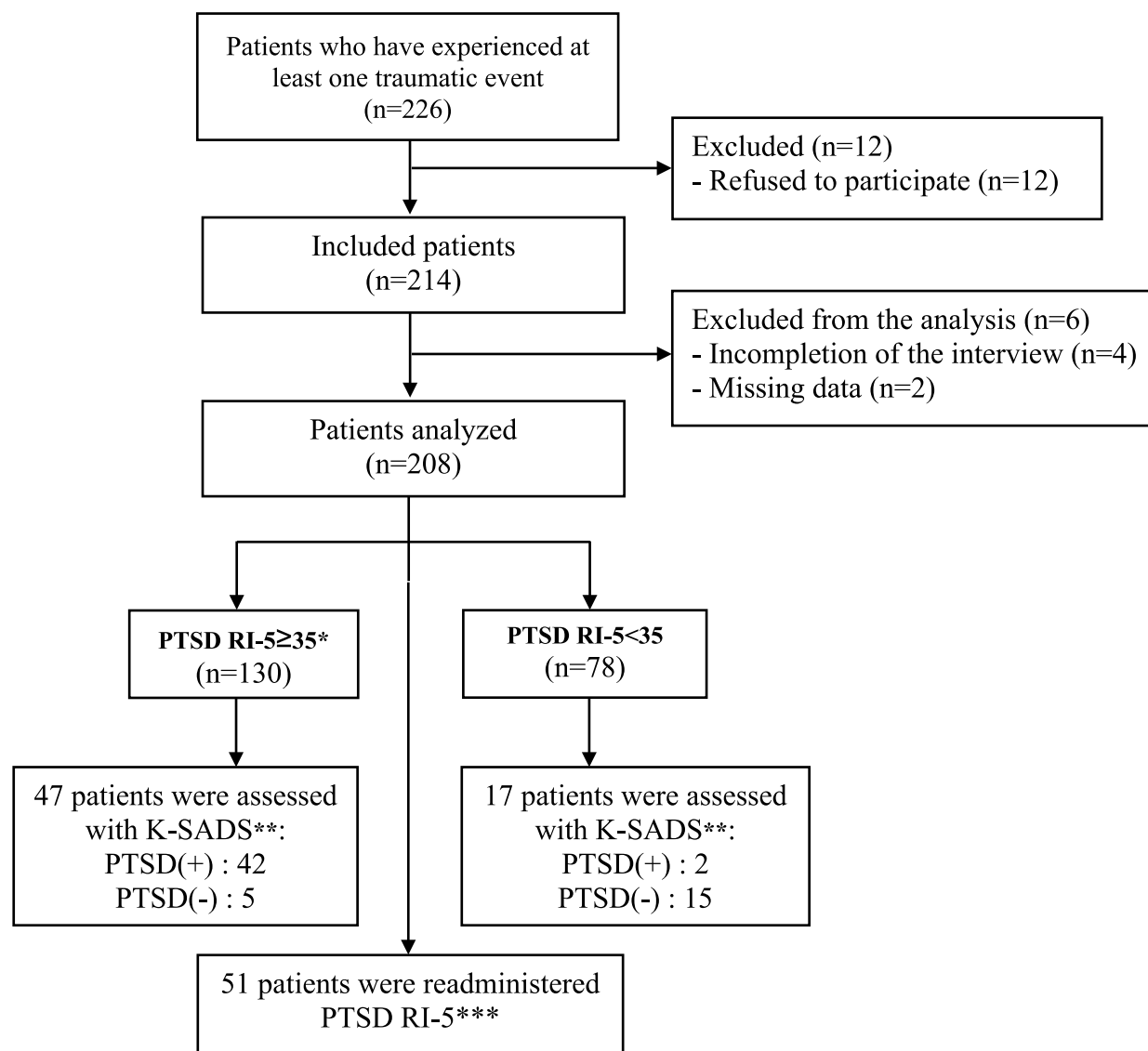
#### 2.3.1 Sociodemographic Data Form

The researchers prepared the Sociodemographic Data Form to gather essential background information. It aims to obtain data about the participants’ gender, age, educational status, and medical and psychiatric history. Additionally, the form collects information regarding the parents’ age, educational status, marital status, economic status, occupation, and medical and psychiatric history.

#### 2.3.2 UCLA PTSD Reaction Index for DSM-5 (PTSD RI-5)

The PTSD RI-5 (Kaplow et al., 2020) is a tool for assessing trauma history and PTSD symptoms in children and adolescents. It is administered to individuals aged 7–18 years for initial and follow-up assessments to evaluate responses to clinical interventions. The PTSD RI-5 consists of five sections: Trauma History, Trauma Details, PTSD Symptom Scale, Distress and Impairment in Functioning, and Clinician Scoring Sheet.

First, the clinician thoroughly captures a history of traumatic experiences using the Trauma History and Trauma Details sections. In the Trauma History section, different types of traumatic events (such as



**Figure 1.** Flow diagram of the study. PTSD RI-5: UCLA Posttraumatic Stress Disorder Reaction Index for DSM-5, K-SADS: Kiddie Schedule for Affective Disorders and Schizophrenia Present and Lifetime Version for DSM-5. \*PTSD RI-5  $\geq 35$ : Number of patients with PTSD RI-5 total scale score above the cut-off value. \*\*Randomly selected patients were assessed with the PTSD RI-5 as well as the K-SADS ( $n = 64$ ). \*\*\* Randomly selected patients were reassessed 2–4 weeks later with the PTSD RI-5 ( $n = 51$ ).

disasters, medical traumas, sexual abuse) are comprehensively screened. The details of the traumatic event, the age of the child at the time of the event, and the role of the child in the event are recorded. The PTSD Symptom Scale, consisting of 31 items, assesses PTSD symptoms. The first 27 items (such as ‘I feel like what happened was sickening and gross’, ‘I have trouble feeling happiness or love’) evaluate PTSD symptoms defined in DSM-5 (criteria B, C, D, E), and the last 4 items assess dissociative symptoms. The frequency assessment page is explained to the child or adolescent to indicate how many days they have experienced the symptoms in the past month. This page, in the form of a calendar, uses the following scale: none (0), little (1; 2 days a month), some (2; 1–2 days a week), much (3; 2–3 days a week), most (4; almost every day). The Stress and Impairment in Functioning section assesses whether the symptoms

cause clinically significant distress and impairment in functioning at home, at school, in relationships with peers, and in development. The Clinician Scoring Sheet at the end of the interview allows the assessment of PTSD and Dissociative Subtype according to DSM-5 criteria.

The validity study conducted by the developers of the PTSD RI-5 showed acceptable to good internal consistency for categories B–E ( $\alpha = 0.76$ – $0.89$ ), except for Criterion C ( $\alpha = 0.67$ ). The internal consistency of the PTSD RI-5 total scale was reported as excellent ( $\alpha = 0.94$ ). The original study demonstrated high diagnostic accuracy in clinical use, with high sensitivity (100%) and specificity (86%) for PTSD RI-5 total scale scores of 35 and above (Kaplow et al., 2020).

For the Turkish translation and permission to use the PTSD RI-5, Dr. Alan Steinberg, one of the developers, was contacted, and a license agreement was



signed. The translation process involved several steps. First, researchers translated the PTSD RI-5 into Turkish. Minor changes were made with the developers' permission to account for cultural differences. Ten different mental health professionals who are native Turkish speakers and proficient in English evaluated the appropriateness of the items for the Turkish population. The finalized Turkish PTSD RI-5 was piloted with ten children and adolescents to check the comprehensibility of the items. After the pilot, two Turkish language teachers reviewed the finalized version for expression and spelling errors. At each step, the Turkish version of the scale was slightly modified in the light of the suggestions. Finally, the scale was back-translated into English by a different bilingual individual and compared with the original tool. Dr. Alan Steinberg was informed throughout the translation process.

### **2.3.3 Revised Child Anxiety and Depression Scale-Child Form (RCADS)**

The RCADS was developed to screen for anxiety disorders and depression symptoms in children and adolescents based on DSM-IV criteria. It consists of 47 items and six subscales, including Generalized Anxiety Disorder (6 items), Separation Anxiety Disorder (7 items), Social Anxiety Disorder (9 items), Panic Disorder (9 items), Obsessive-Compulsive Disorder (6 items), and Major Depressive Disorder (10 items). Each item is scored between 0 ('Never') and 3 ('Always'). The sum of all subtests gives a total internalizing disorder score, and the sum of subtests other than major depressive disorder gives a total anxiety score. Turkish validity and reliability study reported good internal consistency for all subscales (Cronbach  $\alpha > .70$ ) (Gormez et al., 2017).

### **2.3.4 Kiddie Schedule for Affective Disorders and Schizophrenia Present Version for DSM-5 (K-SADS)**

K-SADS is a semi-structured interview used to assess psychiatric symptoms in children and adolescents, evaluating current psychopathology. Initially developed by Chambers et al. in 1985 and later revised by Kaufman et al. for DSM-III and DSM-IV criteria, it was updated to align with DSM-5 criteria. The Turkish adaptation, including its validity and reliability study, was conducted by Ünal et al. (2019). In the present study, the relevant sections were used for the identification of MDD and PTSD diagnoses.

## **2.4. Statistical analysis**

Statistical analyses were conducted using Statistical Program for Social Sciences (SPSS) version 25 and confirmatory factor analysis was conducted with Mplus version 8.3.

Descriptive statistics for continuous variables included mean, standard deviation, median, minimum, and maximum values. Descriptive statistics included frequency ( $n$ ) and percentage (%) values for categorical variables. The normality assumptions of the variables were assessed using skewness and kurtosis coefficients.

Reliability analyses included assessments of internal consistency and test-retest reliability. The internal consistency for the PTSD RI-5 total scale score and each symptom categories was assessed using Cronbach's  $\alpha$ , and test-retest reliability was assessed by calculating the intraclass correlation coefficient (ICC). A two-way mixed-effects model [ICC(3,1)], which evaluates absolute agreement, was used to calculate the ICC, along with its 95% confidence interval (CI) to indicate the precision of the reliability estimate.

Construct validity of the PTSD RI-5 was evaluated through confirmatory factor analysis (CFA), which assessed the goodness-of-fit values for the four-factor model and the high-order four-factor model. The fit indices calculated included chi-square, Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (Cogan et al., 2021), and Comparative Fit Index (CFI). A good fit was defined as CFI and TLI values greater than 0.95 and SRMR values less than 0.08 RMSEA values less than 0.08 (Hu & Bentler, 1999; Marsh et al., 2004). All variables were checked for missing data, normality, univariate and multivariate outliers, and multicollinearity before proceeding with the analyses (Tabachnick et al., 2013).

Pearson correlation coefficients were used to examine the relationship between the PTSD RI-5 and the RCADS. Independent samples t-tests were used to compare the PTSD RI-5 total scale and symptom category scores between groups with and without PTSD and MDD diagnoses, according to K-SADS. The diagnostic accuracy of the PTSD RI-5 was evaluated using receiver operating characteristic (ROC) analyses, with the area under the curve (AUC) used to estimate classification accuracy. AUC values of  $\geq 0.9$  were considered excellent, while values below 0.7 were deemed poor (Swets, 1988).

Additionally, these analyses assessed the diagnostic accuracy of the PTSD RI-5 by comparing it with an index test, the K-SADS, and determined the optimal threshold value by identifying the highest levels of sensitivity and specificity. The K-SADS is used as the index test for establishing the presence or absence of a PTSD diagnosis. Additionally, sensitivity and specificity values for the cut-off score ( $\geq 35$ ), as recommended by the developers of the PTSD RI-5 for diagnosing PTSD, were also examined in the Turkish population. All analyses used a significance level of  $p \leq .05$ .

**Table 1.** Descriptive statistics of sociodemographic data.

Variables	n (%)	Mean	SD	Range
Female	129 (62.0)			
Male	79 (38.0)			
Age (year)	208 (100)	13.89	2.96	7–18
Age at first admitted to child psychiatry (years)	208 (100)	11.30	3.89	3–17
Psychiatric medication use	167 (80.3)			
SSRI/SNRI*	122 (58.7)			
Anti-psychotics	59 (28.4)			
Stimulant	73 (35.1)			
Other	6 (2.8)			
Psychotherapy	64 (30.8)			
Duration of psychotherapy (months)		14.72	18.36	1–94
Mother's education (≥high school)	97 (46.6)			
Father's education (≥high school)	99 (47.5)			
Family monthly income (≥1000\$)	48 (23.1)			
Family Status (Intact)	135 (64.9)			

\* SSRI/SNRI: Selective serotonin reuptake inhibitors/ selective noradrenaline reuptake inhibitors.

### 3. Results

#### 3.1. Descriptive statistics

The mean age of the sample was 11.3 (SD: 3.9) years and 62.0% of the participants were female. According to the hospital records of the participants, 85.1% of the patients received at least one psychiatric diagnosis (ADHD: 38.9%, MDD: 30.8%, GAD: 20.2%, PTSD: 11.5%) by clinical interviews based on DSM-5; 80.3% used at least one psychiatric medication; 30.8% received individual psychotherapy (Table 1).

On average, participants were exposed to 5.8 different types of potentially traumatic events. The mean PTSD RI-5 scale total score was 41.10 (SD: 18.42). Participants reported a range of traumatic events. The most common was the loss of a loved one (51.4%), followed by witnessing domestic violence (46.1%) and experiencing physical abuse (31.7%). Additionally, 24.5% witnessed someone being beaten up, shot, or killed. Moreover, 19.2% experienced sexual molestation, 18.8% experienced a serious accident, 18.8% experienced painful or scary medical treatments, and 17.7% encountered school or neighbourhood violence. Furthermore, 14.4% experienced 'other' types of trauma, 3.4% experienced being kidnapped, 3% experienced a natural disaster, 2.4% experienced war or political violence, and 2.4% experienced rape (Table 2). Out of the 208 patients included in the

**Table 2.** Descriptive statistics of PTSD RI-5.

	Mean	SD	Range
Total traumas reported	5.82	2.56	1–14
Criterion B category score	9.64	6.10	0–20
Criterion C category score	4.13	2.55	0–8
Criterion D category score	14.98	6.96	0–27
Criterion E category score	12.35	5.75	0–24
Dissociative subtype score	3.70	2.75	0–8
Total scale score	41.10	18.42	0–73

Note:  $n = 208$ .

**Table 3.** Item characteristics and correlations with PTSD-RI-5 total score.

Item	Mean	Standard Deviation	Skewness	Kurtosis	Median	Min-max
B1	1.87	1.54	0.14	−1.50	2.00	0–4
B2	1.52	1.44	0.46	−1.18	1.00	0–4
B3	1.94	1.49	0.11	−1.38	2.00	0–4
B4	2.37	1.39	−0.30	−1.16	2.00	0–4
B5	1.95	1.63	0.02	−1.63	2.00	0–4
C1	2.13	1.48	−0.14	−1.40	2.00	0–4
C2	2.00	1.52	−0.02	−1.45	2.00	0–4
D1	1.25	1.48	0.74	−0.97	1.00	0–4
D2	2.26	1.55	−0.21	−1.49	2.00	0–4
D3	1.73	1.60	0.20	−1.55	2.00	0–4
D4	1.71	1.69	0.31	−1.60	1.00	0–4
D5	1.91	1.48	0.10	−1.36	2.00	0–4
D6	1.99	1.54	0.00	−1.49	2.00	0–4
D7	2.00	1.52	0.02	−1.47	2.00	0–4
E1	2.15	1.45	−0.14	−1.37	2.00	0–4
E2	1.04	1.39	1.05	−0.29	.00	0–4
E3	2.03	1.41	0.02	−1.24	2.00	0–4
E4	2.03	1.56	0.03	−1.51	2.00	0–4
E5	2.79	1.33	−0.77	−0.63	3.00	0–4
E6	1.95	1.63	0.06	−1.60	2.00	0–4
A1	1.53	1.57	0.46	−1.34	1.00	0–4
A2	1.71	1.48	0.26	−1.30	2.00	0–4

Note:  $n = 208$ .

study, 130 (62.5%) had a 'PTSD RI-5 Total Scale Score' above the cut-off value (total score  $\geq 35$ ). Before the study, only 24 patients (11.5%) were being followed up with a diagnosis of PTSD. Of these, 22 had a 'PTSD RI-5 Total Scale Score' above the cut-off value (total score  $\geq 35$ ).

#### 3.2. PTSD RI-5 reliability analyses

Table 3 displays the mean, standard deviation, skewness, and kurtosis for each item in the PTSD RI-5 with the total score.

Table 4 shows the internal consistency coefficients (Cronbach's  $\alpha$ ) and test-retest reliability (Intraclass coefficients, ICC) of the PTSD RI-5 scale items. The internal consistency of the PTSD RI-5 categories, excluding criterion C and dissociative symptoms ( $\alpha = 0.61$  and  $0.67$ , respectively), was good to very good ( $\alpha = 0.72$ – $0.87$ ). The PTSD RI-5 total scale score demonstrated excellent internal consistency ( $\alpha = 0.91$ ). Additionally, the test-retest reliability of the total score of the scale is excellent, indicating the consistency of the scale over time and the stability of its results (ICC:  $0.95$ ). On the other hand, the subscales showed good to excellent test-retest reliability.

#### 3.3. Validity analyses of PTSD RI-5

For the construct validity of PTSD RI-5, the goodness of fit values of its 4-factor structure were evaluated by confirmatory factor analysis (CFA). According to the results of CFA, the goodness of fit values of the model were at good to acceptable levels:  $\chi^2(164) = 294.17$ ,  $\chi^2/df = 1.79$ , TLI =  $0.902$ , CFI =  $0.915$ , RMSEA =  $0.062$ , SRMR =  $0.058$ . Figure 2 presents the results of

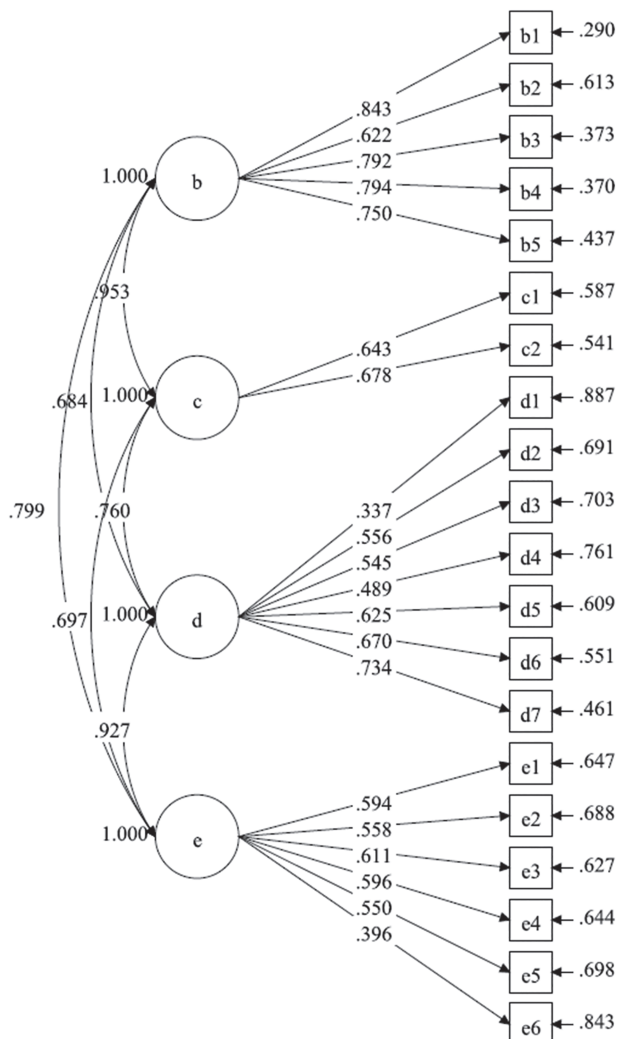
**Table 4.** Internal consistencies of PTSD RI-5 categories and total scale score.

	<i>n</i>	Total Scale	B	C	D	E	Dissociative Subtype
Internal consistency (Cronbach's $\alpha$ )	208	0.91	0.87	0.61	0.76	0.72	0.67
Internal consistency (McDonald's Omega)	208	0.91	0.87	*	0.76	0.72	*
Test-retest reliability (ICC)	51	0.95	0.91	0.75	0.88	0.85	0.89

\*Omega cannot be estimated because the number of items is less than 3.

the Confirmatory Factor Analysis (CFA), including the factor loadings and the correlations between factors (Figure 2). All analyses were performed in 208 patients as described in the 'Descriptive Statistics' and no covariance between factors was introduced as shown in Figure 2. Finally, a high-order model CFA analysis was conducted and the fit values obtained were as follows:  $\chi^2(166) = 342.61$ ,  $\chi^2/df = 2.06$ , TLI = 0.869, CFI = 0.885, RMSEA = 0.072, SRMR = 0.064.

To determine the validity of the PTSD RI-5, its correlation with the RCADS was also analysed. Total score, B, C, D, E, and dissociative symptoms of PTSD RI-5 were found to be statistically significant with MDD and the total anxiety score of RCADS (Table 5).

**Figure 2.** Confirmatory factor analysis of the PTSD RI-5: factor loadings and inter-factor correlations.

Among the 64 participants who were administered K-SADS, 44 individuals (68.8%) were diagnosed with PTSD. These participants had significantly higher PTSD RI-5 total scale scores, as well as higher scores in categories B, C, D, E, and Dissociative subtype, compared to those not diagnosed with PTSD ( $p < .001$ ) (Table 6).

Receiver operating characteristic (ROC) analysis was used to assess the diagnostic accuracy of the PTSD-RI. The area under the ROC curve (AUC) for the total scale score was 0.94, indicating that the PTSD RI-5 has an excellent performance in terms of diagnostic accuracy. To verify cutoff value of the original study (total score  $\geq 35$ ), ROC analyses were also conducted in the current study. A total scale score of 35 and above consistently demonstrated high sensitivity (96%) and specificity (75%) for diagnostic accuracy according to the KSADS PTSD diagnosis. Furthermore, the positive predictive value (PPV) was 89.36%, the negative predictive value (NPV) was 88.24%, the positive likelihood ratio (LR+) was 3.82, and the negative likelihood ratio (LR-) was 0.06, further supporting the strong diagnostic performance of the PTSD RI-5.

#### 4. Discussion

The aim of this study was to evaluate the psychometric properties of the Turkish version of the PTSD RI-5 in a clinical sample of children and adolescents aged 7–18 years who had experienced at least one traumatic event. The results showed that the PTSD RI-5 demonstrated strong psychometric properties in the clinical population and can be used in child and adolescent

**Table 5.** Correlation coefficients between PTSD-RI-5 scores and RCADS scores.

	Total Score	B	C	D	E	Dissociative Subtype
Major depressive disorder	0.73	0.57	0.39	0.73	0.69	0.50
Social phobia	0.58	0.44	0.41	0.58	0.52	0.42
Panic disorder	0.73	0.65	0.42	0.66	0.66	0.52
Separation anxiety	0.46	0.43	0.29	0.38	0.41	0.24
Generalized anxiety	0.66	0.58	0.44	0.60	0.57	0.44
Obsessive compulsive	0.69	0.62	0.47	0.60	0.62	0.54
Total anxiety score	0.76	0.66	0.49	0.70	0.69	0.54

Note: Correlation coefficients represent Pearson correlations between PTSD-RI-5 scores and RCADS scores. All coefficients are significant at  $p < .001$ ,  $n = 208$ .

**Table 6.** Comparison of PTSD RI-5 scores of participants diagnosed and not diagnosed PTSD according to the K-SADS.

PTSD RI-5, mean (SD)	PTSD(-) <i>n</i> =20	PTSD(+) <i>n</i> =44	<i>T</i>	<i>p</i>	Effect Size
Total trauma reported	4.45 (2.97)	7.3 (2.97)	-3.90	<.001	1.05
Criterion B category score	5.15 (4.52)	14.00 (4.49)	-7.29	<.001	1.97
Criterion C category score	2.75 (2.10)	5.66 (2.55)	-4.45	<.001	1.20
Criterion D category score	9.10 (6.62)	20.34 (5.30)	-7.26	<.001	1.96
Criterion E category score	7.90 (4.51)	16.77 (4.67)	-7.12	<.001	1.92
Dissociative subtype score	1.75 (2.22)	5.2 (2.35)	-5.67	<.001	2.44
Total scale score	24.90 (14.43)	56.77 (12.40)	-9.05	<.001	1.05

Note: *n* = 64.

PTSD RI-5: UCLA PTSD Reaction Index for DSM-V.

psychiatry clinics to assess PTSD. In this study, 62.5% of the cases (*n* = 130/208) showed PTSD symptoms above the PTSD RI-5 cut-off score and 68.8% of the cases assessed (*n* = 44/64) met the criteria for PTSD in the semi-structured diagnostic interview, but only 11.5% of the study sample was diagnosed with PTSD by clinical assessment based on DSM-5 before the study. Therefore, the use of the PTSD RI-5 may be a valuable tool in detecting PTSD in a clinical population.

The sample for this study was drawn only from a clinical sample, unlike previous studies where limited clinical samples were included or excluded (Doric et al., 2019; Kaplow et al., 2020; Modrowski et al., 2021; Takada et al., 2018). The PTSD-RI showed good psychometric properties in this sample. Reliability analysis revealed good internal consistency and excellent test-retest reliability. Subcategories of the PTSD RI-5 showed good to very good internal consistency (except Criterion C and Dissociative Subtype), and the total scale score showed excellent internal consistency. These findings are consistent with the original study conducted by the form developers and studies conducted in other countries (Doric et al., 2019; Kaplow et al., 2020; Takada et al., 2018). Only two items were in the scoring scale assessing criterion C and the Dissociative Subtype. Since Cronbach's alpha value can be affected by the length of the scale, it may have caused them to have lower alpha values than the other categories. The item-total item correlation showed that the reliability of Criterion C was at an acceptable level ( $r = 0.63$ ), consistent with the original study (Kaplow et al., 2020). Furthermore, the overall test-retest reliability of the scale was shown to be excellent, indicating the consistency of the scale over time and the stability of its results (ICC = 0.95).

Confirmatory Factor Analysis (CFA) was used to assess the validity of the Turkish PTSD RI-5, and goodness of fit values for the 4-factor model indicated a good to acceptable fit. The goodness of fit values in the Japanese study was stated as acceptable, in the study conducted in 11 countries, it was stated that the model did not show adequate fit in some countries, while it showed acceptable fit in some countries (Doric et al., 2019; Takada et al., 2018). In a study with a

sample of children living in juvenile detention centres, the structural validity of the PTSD RI-5 in children who were victims of multiple traumas (average number of traumatic events = 5) could not be interpreted due to PSI matrix error, and then the CFA model, which was later defined with Bayesian Structural Equation Modeling Factor Analysis (BSEM) showed only an adequate fit (Modrowski et al., 2021). It was stated that the reason for this error, which was not seen in previous studies, may be the difference in the samples' average number of traumatic events. Although the average number of traumatic events in the current study (5.82) is similar to this study, our results indicated good to acceptable fit. These results suggest that the use of the PTSD RI-5 is valid for clinical paediatric population.

The validity of the PTSD RI-5 was further assessed by examining its correlations with the RCADS like most of the studies in the literature. Our results showed strong associations between the PTSD RI-5 and both major depression and total anxiety scores which in line with the current literature. Additionally, semi-structured interviews supported the diagnostic validity of the PTSD RI-5. Our study was the second study using semi-structured diagnostic interview and found similar results like the original study (Kaplow et al., 2020). Our results support the diagnostic validity of the instrument in a clinical sample and in a different culture. Further studies are needed to investigate the diagnostic properties of the instrument in different populations.

The PTSD RI-5 total score showed excellent performance in terms of diagnostic accuracy in ROC analysis with an AUC value of 0.94. The sensitivity and specificity values of the total score cut-off value (>35) recommended by the developers of the PTSD RI-5 were examined by ROC analyses in our study and found to be 96%, 75%, respectively. The slightly lower specificity observed in our study compared to the original study may be attributed to our sample, which included individuals with a greater number of traumatic experiences and comorbid psychiatric disorders and thus representing a very high-risk group for PTSD (van der Kolk, 2005). However, our results provide evidence that the use of the PTSD RI-5 in clinical settings may be beneficial in preventing the



children with PTSD from being misdiagnosed or overlooked.

This study demonstrated that the PTSD RI-5 is useful in a clinical population at risk for PTSD. Our results showed that when children with a history of at least one trauma in our clinical population were evaluated with the PTSD RI-5, 62.5% of the children showed significant levels of posttraumatic stress symptoms. However, only 11.5% of the children had a PTSD diagnosis prior to the study. This may be partly explained by the complex clinical picture of these children which may make it difficult to understand their current condition and its link to trauma (van der Kolk, 2005). Rates of PTSD in our sample are higher than other studies in the literature, which is consistent with the current literature showing that approximately 16% of trauma survivors will develop PTSD (Alisic et al., 2014). As a tertiary referral centre, our clinic probably serves a group with more trauma and more serious problems. This instrument has shown practical benefits in our sample. During the traumatic event screening, seven children shared their past sexual trauma for the first time; necessary forensic notifications were made, and child protection services were involved to protect these children and ensure justice. Many children and their parents have learned that their drug-resistant mental health problems may be due to PTSD and that they need psychotherapy. The results of this study therefore suggest that the use of the PTSD RI-5 in the clinical population offers significant benefits. In the absence of appropriate screening, traumatic event experiences and PTSD are often not detected in children, increasing the risk for trauma-related comorbid disorders (Collishaw et al., 2007). Studies to be conducted in other countries will provide more information on this issue.

One of the strengths of our study is that all the necessary cross-cultural translation procedures related to the Turkish translation and cultural adaptation of the PTSD RI-5 were meticulously carried out. Further, most previous studies evaluating the psychometric properties of the PTSD RI-5 have not assessed its diagnostic accuracy (Doric et al., 2019; Modrowski et al., 2021; Takada et al., 2018). Therefore, our study is the first study to evaluate diagnostic accuracy after the original study, which is one of its strengths. Moreover, although the test-retest reliability of previous versions of the PTSD RI-5 has been evaluated, this is the first study to evaluate the test-retest reliability of the DSM-5 version.

This study has some limitations. The fact that the study population which was only from child psychiatry clinic and the study sample size was relatively small may limit the generalizability of the findings. PTSD symptoms and reactions of individuals outside the clinical population may differ, which may limit the applicability of the results to a wider population. In

the existing literature, the clinical group was included in a limited number of samples, and there is no other study conducted only with a clinical sample (Doric et al., 2019; Kaplow et al., 2020; Modrowski et al., 2021; Takada et al., 2018). Although this limits the generalizability of the findings, our study provides valuable information regarding the applicability of the PTSD RI-5 in a clinical sample. The findings from our child psychiatry clinic affiliated with a reference tertiary care hospital where complicated patients are referred from surrounding provinces and hospitals contributed to the literature by demonstrating the valid and reliable use of the PTSD RI-5 in clinical populations. In addition, the sample size of the study is relatively smaller than in other similar psychometric validation efforts, which may limit the generalizability of the findings (Doric et al., 2019; Kaplow et al., 2020; Modrowski et al., 2021; Takada et al., 2018). However, this difference did not create a serious methodological problem, and the data analysis shows that the results are reliable and valid. Future studies with larger samples will increase the accuracy and generalizability of the findings.

The findings of our study have important implications for clinical practice and future research in child and adolescent mental health, especially in LMIC countries with limited mental health resources. The Turkish version of the PTSD RI-5, with its strong psychometric properties, provides a structured, reliable, and validated tool for screening and diagnosing PTSD in children and adolescents. The use of this tool enhances the accuracy of PTSD assessments, enables more timely and appropriate interventions, which are crucial for minimizing the effects of trauma and trauma-related adversities. The application of the PTSD RI-5 in our study has contributed to a better understanding of traumatic experiences by capturing trauma-specific details and age of occurrence, and improved clinical assessments. By identifying previously unrecognized trauma histories, clinicians were able to review and update children's diagnoses and provide appropriate treatment. The psychometric properties of the PTSD RI-5 were reaffirmed in a clinical sample of polyvictimized children with frequent comorbidities, highlighting its effectiveness in different populations.

The PTSD RI-5 can be effectively used to assess the impact of traumatic events in our country, given its proven utility in identifying PTSD in situations with multiple victims, such as natural disasters and terrorist attacks (Goenjian et al., 2001; Nader et al., 1990; Pynoos et al., 1993; Roussos et al., 2005). Furthermore, mental health professionals working in child protection centres, justice systems, and school guidance services can use this tool to screen trauma histories, conduct evidence-based PTSD evaluations, and refer children to appropriate intervention centres. Broad

application of the PTSD RI-5 in a variety of settings can help identify common types of trauma and inform the development of prevention strategies and mental health interventions on a larger scale.

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## Disclosure statement


No potential conflict of interest was reported by the author(s).

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## References

- Alisic, E., Zalta, A. K., Van Wesel, F., Larsen, S. E., Hafstad, G. S., Hassanpour, K., & Smid, G. E. (2014). Rates of post-traumatic stress disorder in trauma-exposed children and adolescents: Meta-analysis. *British Journal of Psychiatry*, 204(5), 335–340. <https://doi.org/10.1192/bjp.bp.113.131227>
- Benjet, C., Bromet, E., Karam, E. G., Kessler, R. C., McLaughlin, K. A., Ruscio, A. M., Shahly, V., Stein, D. J., Petukhova, M., Hill, E., Alonso, J., Atwoli, L., Bunting, B., Bruffaerts, R., Caldas-de-Almeida, J. M., de Girolamo, G., Florescu, S., Gureje, O., Huang, Y., & Koenen, K. C. (2016). The epidemiology of traumatic event exposure worldwide: Results from the World Mental Health Survey Consortium. *Psychological Medicine*, 46(2), 327–343. <https://doi.org/10.1017/S0033291715001981>
- Cogan, C. M., Paquet, C. B., Lee, J. Y., Miller, K. E., Crowley, M. D., & Davis, J. L. (2021). Differentiating the symptoms of posttraumatic stress disorder and bipolar disorders in adults: Utilizing a trauma-informed assessment approach. *Clinical Psychology & Psychotherapy*, 28(1), 251–260. <https://doi.org/10.1002/cpp.2504>
- Cohen, J. A., Bukstein, O., Walter, H., Benson, S. R., Chrisman, A., Farchione, T. R., Hamilton, J., Keable, H., Kinlan, J., Schoettle, U., Siegel, M., Stock, S., & Medicus, J. (2010). Practice parameter for the assessment and treatment of children and adolescents with posttraumatic stress disorder. *Journal of the American Academy of Child Adolescent Psychiatry*, 49(4), 414–430.
- Collishaw, S., Dunn, J., O'CONNOR, T. G., Golding, J., & Parents, A. L. S. o., & Team, C. S (2007). Maternal childhood abuse and offspring adjustment over time. *Development and Psychopathology*, 19(2), 367–383. <https://doi.org/10.1017/S0954579407070186>
- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry*, 64(5), 577–584. <https://doi.org/10.1001/archpsyc.64.5.577>
- Doric, A., Stevanovic, D., Stupar, D., Vostanis, P., Atilola, O., Moreira, P., Dodig-Curkovic, K., Franic, T., Davidovic, V., Avicenna, M., Noor, M., Nussbaum, L., Thabet, A., Ubalde, D., Petrov, P., Deljkovic, A., Antonio, M. L., Ribas, A., Oliveira, J., & Knez, R. (2019). UCLA PTSD reaction index for DSM-5 (PTSD-RI-5): a psychometric study of adolescents sampled from communities in eleven countries. *European Journal of Psychotraumatology*, 10(1), 1605282. <https://doi.org/10.1080/20008198.2019.1605282>
- Eksi, A., & Braun, K. L. (2009). Over-time changes in PTSD and depression among children surviving the 1999 Istanbul earthquake. *European Child & Adolescent Psychiatry*, 18(6), 384–391. <https://doi.org/10.1007/s00787-009-0745-9>
- Ersikine, H. E., Baxter, A. J., Patton, G., Moffitt, T. E., Patel, V., Whiteford, H. A., & Scott, J. G. (2017). The global coverage of prevalence data for mental disorders in children and adolescents. *Epidemiology and Psychiatric Sciences*, 26(4), 395–402. <https://doi.org/10.1017/S2045796015001158>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Fodor, K. E., Unterhitzberger, J., Chou, C. Y., Kartal, D., Leistner, S., Milosavljevic, M., Nocon, A., Soler, L., White, J., Yoo, S., & Alisic, E. (2014). Is traumatic stress research global? A bibliometric analysis. *European Journal of Psychotraumatology*, 5(1). <https://doi.org/10.3402/ejpt.v5.23269>
- Frederick, C. (1985). Selected foci in the spectrum of post-traumatic stress disorders. In J. Laube & S. Murphy (Eds.), *Perspectives on disaster recovery* (pp. 110–130). Appleton-Century-Crofts.
- Goenjian, A. K., Molina, L., Steinberg, A. M., Fairbanks, L. A., Alvarez, M. L., Goejian, H. A., & Pynoos, R. S. (2001). Posttraumatic stress and depressive reactions among Nicaraguan adolescents after hurricane Mitch. *American Journal of Psychiatry*, 158(5), 788–794. <https://doi.org/10.1176/appi.ajp.158.5.788>
- Gormez, V., Kilincaslan, A., Ebesutani, C., Oregul, A. C., Kaya, I., Ceri, V., Nasiroglu, S., Filiz, M., & Chorpita, B. F. (2017). Psychometric properties of the parent version of the revised child anxiety and depression scale in a clinical sample of Turkish Children and adolescents. *Child Psychiatry & Human Development*, 48(6), 922–933. <https://doi.org/10.1007/s10578-017-0716-1>
- Gormez, V., Kılıç, H. N., Oregul, A. C., Demir, M. N., Demirkan, Ş., Demirbaş, S., Babacan, B., Kınık, K., & Semerci, B. (2018). Psychopathology and associated risk factors among forcibly displaced Syrian children and adolescents. *Journal of Immigrant and Minority Health*, 20(3), 529–535. <https://doi.org/10.1007/s10903-017-0680-7>

- Gunaratnam, S., & Alisic, E. (2017). Epidemiology of trauma and trauma-related disorders in children and adolescents. In M. A. Landolt, M. Cloitre, & U. Schnyder (Eds.), *Evidence-based treatments for trauma related disorders in children and adolescents* (pp. 29–47). [https://doi.org/10.1007/978-3-319-46138-0\\_2](https://doi.org/10.1007/978-3-319-46138-0_2)
- Gunes, S., & Guvenmez, O. (2020). Psychiatric symptoms in traumatized Syrian refugee children settled in Hatay. *Nordic Journal of Psychiatry*, 74(4), 307–310. <https://doi.org/10.1080/08039488.2019.1707282>
- Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global prevalence of past-year violence against children: A systematic review and minimum estimates. *Pediatrics*, 137(3), e20154079. <https://doi.org/10.1542/peds.2015-4079>
- Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Kaplow, J. B., Rolon-Arroyo, B., Layne, C. M., Rooney, E., Oosterhoff, B., Hill, R., Steinberg, A. M., Lotterman, J., Gallagher, K. A. S., & Pynoos, R. S. (2020). Validation of the UCLA PTSD Reaction Index for DSM-5: A developmentally informed assessment tool for youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(1), 186–194. <https://doi.org/10.1016/j.jaac.2018.10.019>
- Kazlauskas, E., Javakhishvili, J., Meewisse, M., Merecz-Kot, D., Şar, V., Schäfer, I., Schnyder, U., & Gersons, B. P. R. (2016). Trauma treatment across Europe: Where do we stand now from a perspective of seven countries. *European Journal of Psychotraumatology*, 7(1), 29450. <https://doi.org/10.3402/ejpt.v7.29450>
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, 11(3), 320–341. [https://doi.org/10.1207/s15328007sem1103\\_2](https://doi.org/10.1207/s15328007sem1103_2)
- McLaughlin, K. A., Koenen, K. C., Hill, E. D., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2013). Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 52(8), 815–830.e814. <https://doi.org/10.1016/j.jaac.2013.05.011>
- Modrowski, C. A., Munion, A. K., Kerig, P. K., & Kilshaw, R. E. (2021). A Bayesian structural equation modeling factor analysis of the UCLA Posttraumatic Stress Disorder Reaction Index for DSM-5 in a polyvictimized sample of adolescents. *Journal of Psychopathology and Behavioral Assessment*, 43(1), 119–130. <https://doi.org/10.1007/s10862-020-09854-z>
- Nader, K., Pynoos, R., Fairbanks, L., & Frederick, C. (1990). Children's PTSD reactions one year after a sniper attack at their school. *The American Journal of Psychiatry*, 147(11), 1526–1530.
- Nasiroğlu, S., & Çeri, V. (2016). Posttraumatic stress and depression in Yazidi refugees. *Neuropsychiatric Disease and Treatment*, 12, 2941–2948. <https://doi.org/10.2147/ndt.S119506>
- Nilaweera, D., Phyto, A. Z. Z., Teshale, A. B., Htun, H. L., Wrigglesworth, J., Gurvich, C., Freak-Poli, R., & Ryan, J. (2023). Lifetime posttraumatic stress disorder as a predictor of mortality: A systematic review and meta-analysis. *BMC Psychiatry*, 23(1), 229. <https://doi.org/10.1186/s12888-023-04716-w>
- Oral, ÜK, Engin, P., & Büyükyazıcı, Z. (2010). *Türkiye'de çocuk istismarı ve aile içi şiddet araştırması özet raporu*. UNICEF.
- Pynoos, R. S., Goenjian, A., Tashjian, M., Karakashian, M., Manjikian, R., Manoukian, G., Steinberg, A. M., & Fairbanks, L. A. (1993). Post-traumatic stress reactions in children after the 1988 Armenian earthquake. *British Journal of Psychiatry*, 163(2), 239–247. <https://doi.org/10.1192/bjp.163.2.239>
- Robson, B., Chang, L., & Kaminer, D. (2019). Representation of low and middle income countries in traumatic stress journals from 2006 to 2015. *South African Journal of Psychology*, 49(4), 562–574. <https://doi.org/10.1177/0081246319831605>
- Roussos, A., Goenjian, A. K., Steinberg, A. M., Sotiropoulou, C., Kakaki, M., Kabakos, C., Karagianni, S., & Manouras, V. (2005). Posttraumatic stress and depressive reactions among children and adolescents after the 1999 earthquake in Ano Liosia, Greece. *American Journal of Psychiatry*, 162(3), 530–537. <https://doi.org/10.1176/appi.ajp.162.3.530>
- Steinberg, A. M., Brymer, M. J., Decker, K. B., & Pynoos, R. S. (2004). The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Current Psychiatry Reports*, 6(2), 96–100. <https://doi.org/10.1007/s11920-004-0048-2>
- Stupar, D., Stevanovic, D., Vostanis, P., Atilola, O., Moreira, P., Dodig-Curkovic, K., Franic, T., Doric, A., Davidovic, N., Avicenna, M., Multazam, I. N., Nussbaum, L., Thabet, A. A., Ubalde, D., Petrov, P., Deljkovic, A., Monteiro, A. L., Ribas, A., Jovanovic, M., ... Knez, R. (2021). Posttraumatic stress disorder symptoms among trauma-exposed adolescents from low- and middle-income countries. *Child and Adolescent Psychiatry and Mental Health*, 15(1), 26. <https://doi.org/10.1186/s13034-021-00378-2>
- Swets, J. A. (1988). Measuring the accuracy of diagnostic systems. *Science*, 240(4857), 1285–1293. <https://doi.org/10.1126/science.3287615>
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). *Using multivariate statistics*, (Vol. 6, pp. 497–516). Pearson.
- Takada, S., Kameoka, S., Okuyama, M., Fujiwara, T., Yagi, J., Iwadare, Y., Honma, H., Mashiko, H., Nagao, K., Fujibayashi, T., Asano, Y., Yamamoto, S., Osawa, T., & Kato, H. (2018). Feasibility and psychometric properties of the UCLA PTSD reaction index for DSM-5 in Japanese youth: A multi-site study. *Asian Journal of Psychiatry*, 33, 93–98. <https://doi.org/10.1016/j.ajp.2018.03.011>
- Teicher, M. H., Andersen, S. L., Polcari, A., Anderson, C. M., Navalta, C. P., & Kim, D. M. (2003). The neurobiological consequences of early stress and childhood maltreatment. *Neuroscience & Biobehavioral Reviews*, 27(1–2), 33–44. [https://doi.org/10.1016/S0149-7634\(03\)00007-1](https://doi.org/10.1016/S0149-7634(03)00007-1)
- Trautmann, S., & Wittchen, H.-U. (2018). Trauma and PTSD in Europe. In C. B. Nemeroff & C. Marmar (Eds.), *Post-traumatic stress disorder* (pp. 133–146). Oxford Academic.
- Ünal, F., Öktem, F., Çetin Çuhadaroglu, F., Çengel Kültür, S. E., Akdemir, D., Foto Özdemir, D., Çak, H. T., Ünal, D., Tıraş, K., Aslan, C., Kalaycı, B. M., Aydos, B. S., Kütük, F., Taşyürek, E., Karaokur, R., Karabucak, B., Karakök, B., Karaer, Y., & Artık, A. (2019). Reliability and validity of the schedule for affective disorders and Schizophrenia for school-age children-present and lifetime Version,

- DSM-5 November 2016-Turkish Adaptation (K-SADS-PL-DSM-5-T). *Turk Psikiyatri Dergisi*, 30(1), 42–50. (Okul Çağı Çocukları için Duygulanım Bozuklukları ve Şizofreni Görüşme Çizelgesi-Şimdi ve Yaşam Boyu Şekli-DSM-5 Kasım 2016 -Türkçe Uyarlamasının (ÇDŞG-ŞY-DSM-5-T) Geçerlik ve Güvenirliği.).
- van der Kolk, B. A. (2005). Developmental trauma disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals*, 35(5), 401–408. <https://doi.org/10.3928/00485713-20050501-06>
- Watson, P. (2019). PTSD as a public mental health priority. *Current Psychiatry Reports*, 21(7), 61. <https://doi.org/10.1007/s11920-019-1032-1>
- Yatham, S., Sivathanan, S., Yoon, R., da Silva, T. L., & Ravindran, A. V. (2018). Depression, anxiety, and post-traumatic stress disorder among youth in low and middle income countries: A review of prevalence and treatment interventions. *Asian Journal of Psychiatry*, 38, 78–91. <https://doi.org/10.1016/j.ajp.2017.10.029>
- Yektaş, Ç., Erman, H., & Tufan, A. E. (2021). Traumatic experiences of conditional refugee children and adolescents and predictors of post-traumatic stress disorder: Data from Turkey. *Nordic Journal of Psychiatry*, 75(6), 420–426. <https://doi.org/10.1080/08039488.2021.1880634>