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Post-Traumatic Stress Disorder in Residential Care After an Earthquake: A Follow-Up Study

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ABSTRACT

Introduction: Earthquakes are frequent and devastating disasters, causing significant physical and psychiatric consequences, particularly posttraumatic stress disorder (PTSD). To the authors' knowledge, this study is the first to investigate PTSD in adolescents raised in residential care after a natural disaster.

Methods: 48 adolescents in residential care and 54 living with families, aged 12–18 years, participated. Initial interviews were conducted one month after the earthquake, with follow-ups at three months. Assessment tools included the Childhood Trauma Questionnaire (CTQ), Children's PTSD Reaction Index, and Schedule for Affective Disorders and Schizophrenia for School-Age Children.

Results: Posttraumatic stress disorder severity significantly decreased in family-raised adolescents (t=3.986, p <0.001), but no change was seen in residential care adolescents (t=0.584, p=0.563). Comorbid psychiatric disorders were less frequent in family-raised adolescents (χ^2=18.785, p=0.001). While no significant difference in total CTQ scores was found (z=-0.417, p=0.677), subscales showed significant differences between two groups. A backward binary logistic regression analysis revealed that lower levels of physical neglect were a statistically significant predictor of PTSD (p=0.024). Although not reaching statistical significance, increased sexual abuse (p=0.075) emerged as a relevant predictor of PTSD.

Conclusion: Adolescents in residential care had more persistent PTSD symptoms, greater childhood adversity, and higher psychiatric comorbidities than those in family care. Decrement in physical neglect and increased sexual abuse were PTSD predictors, although only the former reached statistical significance. Further research with larger samples and longer follow-ups is needed.

Keywords: earthquake, disaster, institutional care, PTSD, residential care

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INTRODUCTION

Earthquakes rank among the most common and devastating natural calamities, causing not only physical harm, destruction, and loss of life, but also significant psychological and psychiatric repercussions for those affected (1). Survivors of earthquakes often endure the profound loss of loved ones, relive traumatic experiences, face shifts in social dynamics, and endure adverse living conditions. These experiences are known to lead to detrimental psychological effects (2). Research has shown a significant correlation between earthquakes and mental health challenges, including posttraumatic stress disorder (PTSD), depression, anxiety disorders, psychological distress, suicidal ideation, and increased alcohol consumption (3).

Highlights

- **Adolescents in residential care exhibited more persistent PTSD symptoms.**
- **Adolescents in residential care faced greater childhood adversity and psychiatric risks.**
- **Reduced physical neglect and increased sexual abuse predicted PTSD symptoms.**

On February 6, 2023, two earthquakes, measuring magnitudes of 7.7 Mw and 7.6 Mw on the Richter scale, struck with their epicenter in Kahramanmaraş, Türkiye. The disaster resulted in at least 50,783 reported fatalities and 107,204 injuries (4). Following the major earthquakes, more than 11,000 aftershocks occurred, with magnitudes reaching up to 6.7 Mw (5). It has been reported that the most commonly diagnosed disorder following earthquakes is PTSD, with prevalence rates ranging from 2.5% to 60% among children and adolescents (6). It has also been suggested that the most relevant risk factors for PTSD include sociodemographic

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characteristics, type of trauma exposure, post-disaster cognitive and emotional states, and levels of social support (7). Specifically concerning children and adolescents, research indicates that older age, higher education level, being trapped in debris, experiencing fear or injury, and witnessing death or injury are among the most significant risk factors for developing PTSD (6).

Studies investigating mental health disorders in children and adolescents following earthquakes have predominantly centered on the general pediatric population. However, children and adolescents in residential care are recognized as a vulnerable group regarding mental health disorders. Reports indicate that these children are at a heightened risk for psychiatric disorders and are diagnosed more frequently compared to children growing up with their families (8). The prevalence of PTSD among those in residential care has been reported to range between 0.4% and 14% (9). Children and adolescents in residential care are noted to exhibit more severe symptoms of mental disorders compared to the general population. Additionally, they are at a higher risk of exposure to multiple traumas (10). Hence, understanding the characteristics of PTSD in children and adolescents residing in care facilities is crucial. To the best of our knowledge, there is no study investigating PTSD in residential care after a natural disaster in literature. The present paper represents the first attempt to investigate the risk factors, characteristics, and prognosis of PTSD following a natural disaster in children and adolescents within residential care settings, compared to the general population.

METHODS

Design

The present research constitutes a single-center follow-up study. Following the earthquake, the region experienced significant immigration, both permanent and temporary. The Ministry of Health of the Republic of Türkiye issued a call for medical support to aid earthquake victims who had immigrated from affected areas and took swift action to ensure timely delivery of assistance. Additionally, the Istanbul University, Istanbul Faculty of Medicine, Department of Child and Adolescent Psychiatry, is also requested assistance during this critical period.

After relocating to Istanbul due to the earthquake, adolescents who sought assistance from the Istanbul Faculty of Medicine, Department of Child and Adolescent Psychiatry, after March 6, 2023, and resided either in residential care or with their families, were enrolled in this study. Both the adolescents and their legal guardians received detailed explanations regarding the study's objectives and methodology, emphasizing their right to withdraw from the study at any point. Participation commenced following the informed consent obtained from both the adolescents and their legal guardians.

Ethics

The research project received approval from the İstanbul University İstanbul Faculty of Medicine Deanery Clinical Research Ethics Committee under file number 2023/694 and adhered to the principles outlined in the Declaration of Helsinki.

Participants

The study's inclusion criteria consisted of willingness to participate, ability to read and write, and ages ranging from 10 to 18 years. The first group (home group) includes individuals who have been raised with their families and were exposed to at least one of the earthquakes occurring on February 6, 2023. The second group (residential care group) comprises individuals who have been raised in residential care and were exposed to at least one of the earthquakes on February 6, 2023.

Exclusion criteria for the study include cases where the adolescent or their legal guardian declines participation or requests withdrawal from the study for any reason. Additionally, exclusion criteria encompass diagnoses of intellectual disability or autism spectrum disorder, as well as the presence of active psychopathology such as mania or psychosis, which could impair the adolescent's ability to assess reality during interviews. Other exclusion criteria encompass having a chronic physical illness (e.g., epilepsy, multiple sclerosis, diabetes mellitus, chronic kidney or liver disease, and neurodegenerative disorders) that may influence judgment, as well as instances of careless or incomplete completion of study forms.

Initial interviews for two groups were conducted after March 6, 2023, one month following the earthquake. Second interviews with both groups took place after June 6, 2023, three months after the initial interviews. During the course of the study, 120 patients were initially evaluated for potential inclusion. Of these, 14 patients were not included in the study as they failed to meet the specific inclusion criteria. This decision was primarily based on a preliminary review of their medical records, revealing that 7 of these patients did not fall within the required age range of 10–18 years. Additionally, it was noted that 4 patients were diagnosed with intellectual disability, and 3 were diagnosed with autism spectrum disorder. Consequently, information about the study was provided to 106 patients, and they were invited to participate. The parents of 1 patient and 3 of the subjects declined to participate. Interviews were planned to be conducted with the remaining 102 participants who accepted the invitation. The first clinical interview was conducted with these 102 patients. Three months after the first interview, a second interview was conducted with 76 of the participants. 26 participants dropped out of the study between the two interviews. 5 of them transferred to an institution in a different city, 1 reunited with her family, 9 declined to continue the study, and 11 dropped out for unknown reasons. A summary of the sample selection based on the inclusion and exclusion criteria is shown in Fig. 1.

Throughout the study, a child and adolescent psychiatrist conducted interviews based on DSM-5 criteria and utilized the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL) to diagnose PTSD and other psychiatric comorbidities in home and residential care groups. A child and adolescent psychiatrist also administered the Children's Post-Traumatic Stress Disorder Reaction Index (CPTSD-RI) to assess the severity of PTSD symptoms in the earthquake-affected population. Additionally, the clinician ensured the completion of the Sociodemographic Data Form and the Childhood Trauma Questionnaire (CTQ-53) to evaluate adverse childhood events in all participants.

Materials

Sociodemographic Data Form

Sociodemographic Data Form prepared by researchers includes demographic information such as gender, age, educational status, medical and psychiatric history, parents' educational status, relationship status, economic status, and employment status. Additional questions were included for adolescents in residential care, inquiring about their duration in care, number of institutional changes, and their contact with parents and siblings. For adolescents affected by the earthquake, additional questions addressed whether they or their relatives were trapped under debris, injured, suffered material losses, participated in rescue efforts, received social support post-earthquake, experienced relocation processes, temporary placements, and received psychological support afterward.

Childhood Traumas Questionnaire (CTQ-53)

The questionnaire, initially developed by Bernstein in 1994 with 70 items, was streamlined to 53 items in 1995 and later adapted into Turkish by Şar in 1996. It operates as a 5-point Likert-type self-report scale, consisting of

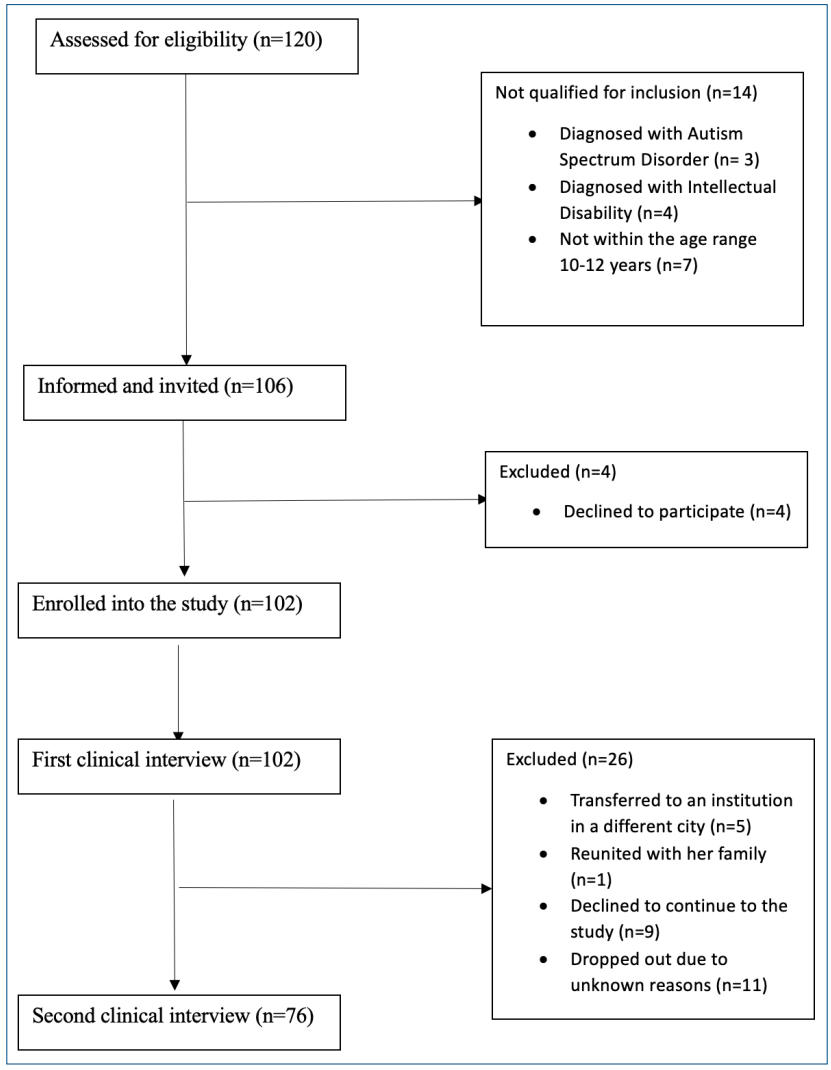

Figure 1. Sample selection.

five subgroups that evaluate emotional, physical, and sexual abuse, along with physical and emotional neglect experienced during childhood. Furthermore, the questionnaire includes three validation questions designed to assess minimization (11). The Cronbach's alpha coefficients for factors related to each type of trauma ranged from 0.79 to 0.94, indicating a high level of internal consistency (12).

Children's Post-Traumatic Stress Disorder Reaction Index (CPTSD-RI)

The CPTSD-RI, developed by Pynoos et al. in 1987, is used to assess specific stress reactions experienced by children following exposure to trauma (13). The revised version of the scale consists of 20 items. According to the scale, scores between 12 and 24 points indicate "Mild PTSD", scores between 25 and 39 indicate "Moderate PTSD", scores between 40 and 59 indicate "Severe PTSD", and scores of 60 and above indicate "Very Severe PTSD". Additionally, scores of 40 and above indicate clinical PTSD. The validity and reliability study of the CPTSD-RI was conducted by Erden et al. in 1999, reporting a test-retest reliability of 0.86, Cronbach's Alpha coefficient of 0.75, and inter-rater consistency (Cappa) of 0.887 (14).

Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL)

The K-SADS-PL is a semi-structured interview schedule used to assess psychiatric symptoms in children and adolescents, as well as to determine their past and present psychopathologies. The Affective Disorders and Schizophrenia Interview Schedule was first developed by Chambers et al. in 1985 (15). Kaufman et al. subsequently adapted the K-SADS into the "Present and Lifetime Form," aligning it with the diagnostic criteria outlined in DSM-III and DSM-IV (16). The Turkish adaptation for validity and reliability of the latest version, updated according to DSM-5 diagnostic criteria, was conducted by Ünal et al (17).

Statistical Analysis

Statistical analysis was performed using IBM Statistical Package for Social Sciences (SPSS) program version 29.0 (IBM Corp, Armonk, NY, United States). Descriptive data were presented as mean ± standard deviation, median (interquartile range), and percentage. The relationship between categorical data was evaluated using the Pearson Chi-square test (χ^2). If any expected cell size was <5, Fisher's exact test was applied instead of the Chi-square test. Data distribution was assessed using the Shapiro-Wilk test. Student's t-test was used to compare continuous variables between the two groups when the assumption of normality was met. The Mann-Whitney U test was performed to compare two independent groups for non-normally distributed continuous data. Variables presumed to be associated with PTSD were evaluated by constructing models using backward binary logistic regression. Independent variables showing a p-value <0.200 in their association with CPTSD-RI scores in bivariate analyses were included in the backward binary logistic regression model (18). A p-value <0.05 was considered statistically significant.

RESULTS

Descriptive Results

At the beginning of the study, a total of 102 adolescents were included in the first interview, comprising 47 girls (46.07%) and 55 boys (53.92%). The average age of the participants was 15.18±1.28 years. Among the participants, 87.25% were attending school, whereas 12.74% were not. Additionally, 11.76% of the participants had a history of trauma prior to the earthquake, while 88.23% did not. It was also found that 37.0% of adolescents who have been raised in residential care had experienced being in more than one institution during their lifetime The sociodemographic data are summarized in Table 1.

Among the earthquake-affected participants, 43.1% had at least one relative trapped under the debris. Additionally, 26.5% of the participants took part in rescue efforts. Furthermore, 36.6% of the participants witnessed someone die or get injured. In terms of social support, 37% of the participants reported receiving adequate social support, 36% declared moderate social support, and 27% reported insufficient social support. Finally, 45.5% of the participants received psychological first aid.

Psychiatric Comorbidities in Earthquake-Affected Population

It is observed that 8.3% of the participants in the home group had a psychiatric comorbidity, whereas 42.5% of the participants in the residential care group had a psychiatric comorbidity according to the K-SADS-PL. Psychiatric diagnoses of home group and residential care group are summarized in Table 2.

PTSD frequencies and CPTSD-RI scores at the first interview

Posttraumatic stress disorder was assessed among participants affected by earthquakes during the initial interview. The frequency of PTSD during the first interview was 34.3% in the combined home and residential care groups, with specific rates of 31.3% for the home group and 37.0% for the residential care group. A comparison of PTSD frequencies between the two groups revealed no statistically significant difference (χ^2=0.378, p=0.539). The median CPTSD-RI score for the home group was 38.00 (25.75–51.00), whereas for the residential care group, it was 42.00 (30.00–58.00). There was no statistically significant difference in CPTSD-RI scores between the two groups (z=-1.565, p=0.118).

PTSD frequencies and CPTSD-RI scores at the second interview

Posttraumatic stress disorder was evaluated in earthquake-affected participants during the second interview. The frequency of PTSD at the second interview was 22% in the combined home and residential care groups, with specific rates of 21.6% for the home group and 23.1% for the residential care group. When comparing the two groups in terms of PTSD frequency, no statistically significant difference was observed (χ^2=0.023, p=0.879). At the second interview, CPTSD-RI scores were determined as 34.05±11.49 for the home group and 34.97±12.65 for the residential care group. The CPTSD-RI scores between the two groups was statistically similar (t=-0.328, p=0.744).

The difference between the CPTSD-RI scores from the first to the second interviews revealed a significant decrease in the scores of the home group (t=3.986, p <0.001), whereas no significant change was observed in the scores of the residential care group (t=0.584, p=0.563)

Upon comparing the fourth-month and first-month CPTSD-RI subscale scores between the groups, significant differences were observed in all subscales for the home group. Specifically, the fourth-month flashback scores and first-month flashback scores, fourth-month avoidance scores and first-month avoidance scores, and fourth-month arousal scores and first-month arousal scores showed statistically significant differences (p <0.001, p=0.020, and p <0.001, respectively). In contrast, for the residential care group, significant differences were found only in the fourth– and first-month flashback scores (p=0.048), while no significant

Table 1. Sociodemographic data of the participants

		Home group n (48)	Residential care group n (54)		
		Median (25th-75th percentiles)	Median (25th-75th percentiles)	p	z
Age		15.00 (12.25–16.00)	16.00 (15.00–17.00)	<0.02*	-3.131
		n (%)	n (%)	p	χ^2
Gender	Female	22 (45.8%)	25 (46.3%)	NS	0.00
	Male	26 (54.2%)	29 (53.7%)		
To continue attending school	Yes	47 (100.0%)	42 (77.8%)	<0.001*	11.853
	No	0 (0.0%)	12 (22.2%)		
Trauma history prior to earthquake	Present	0 (0.0%)	12 (22.2%)	0.002*	10.043
	Absent	48 (100.0%)	42 (77.8%)		

*p <0.05 (significance); NS: Non-significant

Table 2. Psychiatric diagnoses of home group and residential care group

	Home group n (48)		Residential care group n (54)			
Psychiatric diagnoses	n	%	n	%	χ^2	p
At least one psychiatric diagnosis	4	8.3	23	42.5	18.785	0.001*
GAD	0	0	2	3.7	1.813	0.0178
ADHD	1	2	11	20.3	6.250	0.011*
Panic disorder	0	0	1	1.8	0.898	0.343
ODD	0	0	2	3.7	1.813	0.178
MDD	1	2	2	3.7	0.234	0.629
Anorexia nervosa	1	2	0	0	0.007	0.933
CD	0	0	4	7.4	3.701	0.054
OCD	1	2	0	0	1.136	0.286
Phobia	0	0	1	1.8	0.898	0.343

GAD: general anxiety disorder; ADHD: attention deficit hyperactivity disorder; ODD: opposite defiant disorder; MDD: major depressive disorder; CD: conduct disorder; OCD: obsessive compulsive disorder; *p <0.05 (significance).

differences were found in the avoidance (p=0.909) and arousal (p=0.378) scores. Differences in CPTSD-RI subscale scores between the home and residential care groups are summarized in Table 3.

Comparison of the CTQ scores

Comparing the total CTQ scores of both groups revealed no significant differences between them (z=-0.417, p=0.677). However, significant differences emerged in the examination of the subscales. Specifically, a significant difference was found between the home group and the residential care group in the physical neglect subscale (z=-1.986, p=0.047). Additionally, in the sexual abuse subscale, a significant difference was found between the home group and the residential care group (z=-2.249, p=0.025). Regarding the physical abuse subscale, significant difference was observed between the home group and the residential care group (z=-2.859, p=0.004). Moreover, a significant difference was found between the home group and the residential care group in the emotional abuse subscale (z=-2.726, p=0.006). Finally, there was no significant difference observed between both groups in the emotional neglect subscale (z=-1.986, p=0.522). Total CTQ and subscale scores between the two groups are summarized in Table 4.

Regression Analysis

Backward binary logistic regression was used to examine the relationship between PTSD at the third interview (entered as the dependent variable) and the following predictors: emotional abuse (measured by CTQ), physical abuse (measured by CTQ), sexual abuse (measured by CTQ), physical neglect (measured by CTQ), and institutional upbringing. In the final step of the backward regression model, one independent variable significantly predicted PTSD at the third interview (Nagelkerke R^2=0.170, p=0.013). Regression analysis findings indicated that decreased physical neglect was a significant predictor of PTSD. Among the other variables, sexual abuse was also found to be a relevant predictor for PTSD, albeit not at a 5% significance threshold (p=0.075). The backward binary logistic regression model is summarized in Table 5.

Table 3. Differences in CPTSD-RI subscale scores between home and residential care groups from month 1 to month 4

CPTSD-RI Subscales	Home Group (n=37)			Residential Care Group (n=39)		
		t/z	p		t/z	p
Flashback	14.00 (10.00–18.00) [b] 12.00 (9.00–15.00) [c]	-3.936	<0.001*	2.45±7.07 [a]	2.055	0.048*
Avoidance	6.50 (3.00–9.00) [b] 6.00 (1.25–7.00) [c]	-2.329	0.020*	-0.08±4.39 [a]	-0.115	0.909
Arousal	4.25±5.40[a]	4.717	<0.001*	1.22±8.13 [a]	0.894	0.378

[a]: Data presented as mean ± standard deviation; [b]: Data presented as median (25th-75th percentiles) of first interview; [c]: Data presented as median (25th-75th percentiles) of second interview; *p <0.05 (significance).

Table 4. Comparison of the total CTQ and subscale scores between the two groups

Variables	Home group [#] n (48)	Residential care group [#] n (54)	z	p
Total CTQ-53 scores	68.50 (63.50–71.75)	62.00 (68.50–73.00)	-0.417	0.677
CTQ-53 physical neglect scores	18.00 (16.00–19.00)	19.00 (14.00–22.00)	-1.986	0.047*
CTQ-53 emotional neglect scores	17.00 (16.00–18.00)	17.00 (13.00–19.25)	-0.640	0.522
CTQ-53 sexual abuse scores	9.00 (7.00–9.00)	9.00 (8.00–11.00)	-2.249	0.025*
CTQ-53 physical abuse scores	16.00 (12.00–17.00)	12.50 (11.00–16.00)	-2.859	0.004*
CTQ-53 emotional abuse scores	9.00 (8.00–10.00)	11.00 (8.00–14.00)	-2.726	0.006*

[#]: Data presented s median (25th-75th percentiles); *p <0.05 (significance).

Table 5. Backward binary logistic regression model for PTSD outcome

Predictor	Exp (β)	95% Confidence interval for β	Standard error	p value
Model 1 (R^2=0.206, p=0.060)				
Emotional abuse	1.035	0.799–1.340	0.132	0.795
Physical abuse	1.131	0.912–1.402	0.110	0.262
Sexual abuse	1.157	0.914–1.464	0.120	0.225
Physical neglect	0.828	0.694–0.986	0.090	0.035*
Being raised in an institution	1.289	0.288–5.765	0.764	0.740
Model 2 (R^2=0.205, p=0.032)				
Physical abuse	1.136	0.920–1.403	0.108	0.237
Sexual abuse	1.171	0.943–1.454	0.110	0.152
Physical neglect	0.821	0.696–0.968	0.084	0.019*
Being raised in an institution	1.179	0.313–4.436	0.676	0.808
Model 3 (R^2=0.204, p=0.015)				
Physical abuse	1.144	0.934–1.400	0.103	0.193
Sexual abuse	1.161	0.946–1.426	0.105	0.154
Physical neglect	0.824	0.702–0.967	0.082	0.018*
Model 4 (R^2=0.170, p=0, 013)				
Sexual abuse	1.199	0.982–1.465	0.102	0.075
Physical neglect	0.835	0.714–0.977	0.080	0.024*

DISCUSSION

In the present paper, there was no difference in the severity and frequency of PTSD between adolescents who have grown up in residential care and those who have grown up with their families. However, it was noted that PTSD severity decreased in adolescents who have grown up with their families, while there was no significant reduction in PTSD severity in adolescents who have grown up in residential care during the follow-up. This finding indicates that PTSD symptoms were more persistent in adolescents who were raised in residential care compared to those raised with their families. It is shown that mental disorder symptomatology might be more severe in children who have grown up in residential care (10). Additionally, research suggests that PTSD symptoms are more persistent in children who have grown up in residential care due to factors such as higher rates of trauma exposure, increased susceptibility to new traumas due to impaired cognitive control, and exposure to traumatic experiences by caregivers (19). Therefore, the more persistent PTSD symptoms in adolescents who have been raised in residential care might be explained by the aforementioned factors. It has been reported that social structure instability is a risk factor for PTSD (20). Additionally, a recent meta-analysis has indicated that high social support is associated with a reduction in PTSD severity, with family support showing a particularly strong association (21). Since adolescents who have grown up in residential care likely lack adequate social support, deprivation of social support might contribute to more persistent PTSD symptoms.

An important finding from the present study is that the frequency of comorbid psychiatric disorders was observed to be 8.3% among adolescents who have grown up with their families, compared to 42.5% among those who have grown up in residential care. A study conducted in Türkiye reported that 86.7% of adolescents growing up in residential care had been receiving psychological treatment (22). Considering comorbid psychiatric disorders significantly reduces psychological resilience (20) and psychological resilience may serve as a protective factor against psychiatric disorders; the higher frequency of comorbidities could contribute to more persistent PTSD symptoms in adolescents who have grown up in residential care.

There was no significant difference in total CTQ-53 scores between the two groups. However, when comparing the CTQ-53 subscales, scores on the physical neglect, physical abuse, emotional abuse, and sexual abuse subscales were found to be significantly higher in adolescents who have been raised in residential care compared to those who have been raised with their families. It has been reported that chronic trauma and adverse childhood events are more common in children growing up in residential care (10,19). However, a controversial issue is whether residential care itself entails a higher risk of trauma exposure in children. Research indicates that residential care might be associated with more traumatic experiences in children (23). However, it is important to consider that the advantages and disadvantages of residential care may vary depending on factors such as the institution's structure, culture, and country. In our study, we could not determine whether adverse childhood events occurred before or during residential care due to the study's design. Further research is needed to examine the relationship between adverse childhood events and residential care.

In the present study, sexual abuse was a predictor of PTSD, albeit not at a significant level. A recent systematic review and meta-analysis have shown that childhood sexual abuse is strongly associated with PTSD in childhood, adolescence, and young adulthood, irrespective of gender (24). In this respect, our findings are in line with the current literature. Moreover, the present study found a significant negative association between physical neglect and PTSD. Studies have reported that neglect, unlike abuse, may contribute to the development of resilience (25). On the other hand, some studies suggest that physical neglect may result in decreased resilience in healthy individuals (26). In this context, a recent meta-analysis shows that social support can play a unique role in enhancing resilience when facing adverse childhood events (27). The negative association between physical neglect and PTSD found in our study may be explained by timely social interventions to neglect, where resilience could have served as a protective factor against PTSD. However, further studies are needed to determine the contributing factors to the development of resilience and the status of resilience in residential care.

The present study could make a significant contribution to the literature by focusing on children growing up in residential care, an understudied population. To the best of authors' knowledge, this is the first study investigating PTSD following a natural disaster in adolescents who have been raised in residential care. Additionally, the longitudinal design of our study strengthens its findings.

However, the study has several limitations. The participants predominantly required post-traumatic psychiatric support. The sample size is relatively small, and the follow-up period is relatively short. Longer-term studies with larger samples are needed to identify risk factors for mental disorders, implement more accurate preventive measures, and develop rehabilitation interventions for children who have been raised in residential care, who are a mentally fragile and psychiatric disorder-prone population.

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Ethics Committee Approval: The research project received approval from the İstanbul University İstanbul Faculty of Medicine Deanery Clinical Research Ethics Committee under file number 2023/694 and adhered to the principles outlined in the Declaration of Helsinki.

Informed Consent: Participation commenced following the informed consent obtained from both the adolescents and their legal guardians.

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