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Psychopathology and Psychological Resilience in Adolescents Exposed to Sexual Abuse: A Case-Control Study

Cinsel İstismara Uğramış Ergenlerde Psikopatoloji ve Psikolojik Sağlamlık: Bir Vaka-Kontrol Çalışması

İbrahim Zeyrek[1], Ahmet Özaslan[2,3], Uğur Tekeoğlu[4], Yücel Fidan[5]

[1]Clinic of Child and Adolescent Psychiatry, Memorial Diyarbakır Hospital, Diyarbakır, Türkiye
[2]Psychology Research Centre, Khazar University, Baku, Azerbaijan
[3]Department of Child and Adolescent Psychiatry, Gazi University, Faculty of Medicine, Ankara, Türkiye
[4]Department of Child and Adolescent Psychiatry, Recep Tayyip Erdoğan University, Faculty of Medicine, Rize, Türkiye
[5]Department of Social Work, Sivas Cumhuriyet University, Faculty of Letters, Sivas, Türkiye

ABSTRACT

Objective: This study aimed to investigate the psychological impact of sexual abuse on adolescents by examining differences in depression, anxiety, stress, and post-traumatic stress between those with and without a history of sexual abuse. A further objective was to evaluate the role of psychological resilience, both as a differentiating factor between the groups and as a predictor of mental health outcomes within the abused group.

Methods: The study included 114 adolescents (aged 12–18 years), divided into a case group of 56 with a history of sexual abuse and a control group of 58 with no such history. Participants completed the -21, the Children's Revised Impact of Event Scale, and the Child and Youth Resilience Measure-12. Data were analyzed using multivariate analysis of covariance to compare the groups and hierarchical multiple regression to assess the predictive role of resilience, controlling for age and gender.

Results: The case group reported significantly higher levels of depression [$F(1, 109) = 13.04$, $p < 0.001$], anxiety [$F(1, 109] = 10.31$, $p = 0.002$), stress [$F(1, 109) = 6.40$, $p = 0.013$], and post-traumatic stress [$F(1, 109) = 18.62$, $p < 0.001$], as well as lower levels of psychological resilience [$F(1, 109) = 14.32$, $p < 0.001$], compared to the control group. Within the case group, psychological resilience was a significant negative predictor of depression ($\beta = -0.35$, $p = 0.011$), stress ($\beta = -0.30$, $p = 0.026$), and post-traumatic stress ($\beta = -0.44$, $p = 0.001$), but not anxiety ($\beta = -0.06$, $p = 0.67$).

ÖZ

Amaç: Bu çalışma, cinsel istismar öyküsü olan ve olmayan ergenler arasındaki depresyon, anksiyete, stres ve travma sonrası stres farklılıklarını inceleyerek cinsel istismarın ergenler üzerindeki psikolojik etkisini araştırmayı amaçlamıştır. Bir diğer amaç, psikolojik sağlamlığın rolünü hem gruplar arasında ayırt edici bir faktör olarak hem de istismara uğramış grup içinde ruh sağlığı sonuçlarının bir yordayıcısı olarak değerlendirmektir.

Yöntemler: Çalışmaya 12–18 yaş arası 114 ergen dahil edilmiş, bu grup 56'sı cinsel istismar öyküsü olan bir vaka grubu ve 58'i böyle bir öyküsü olmayan bir kontrol grubu olarak ikiye ayrılmıştır. Katılımcılar Depresyon Anksiyete Stres Ölçeği-21, Çocuklar için Gözden Geçirilmiş Travma Sonrası Stres Ölçeği ve Çocuk ve Genç Psikolojik Sağlamlık Ölçeği-12'yi doldurmuştur. Veriler, grupları karşılaştırmak için çok değişkenli kovaryans analizi ve yaş ve cinsiyet kontrol edilerek psikolojik sağlamlığın yordayıcı rolünü değerlendirmek için hiyerarşik çoklu regresyon kullanılarak analiz edilmiştir.

Bulgular: Vaka grubu, kontrol grubuna kıyasla anlamlı düzeyde daha yüksek depresyon [$F(1, 109) = 13{,}04$, $p < 0{,}001$], anksiyete [$F(1, 109) = 10{,}31$, $p = 0{,}002$], stres [$F(1, 109) = 6{,}40$, $p = 0{,}013$)] ve travma sonrası stres [$F(1, 109) = 18{,}62$, $p < 0{,}001$] düzeyleri ve daha düşük psikolojik sağlamlık [$F(1, 109) = 14{,}32$, $p < 0{,}001$] düzeyleri bildirmiştir. Vaka grubu içinde, psikolojik sağlamlık depresyon ($\beta = -0{,}35$, $p = 0{,}011$), stres ($\beta = -0{,}30$, $p = 0{,}026$) ve travma sonrası stres ($\beta = -0{,}44$, $p = 0{,}001$) için anlamlı bir negatif yordayıcı iken, anksiyete ($\beta = -0{,}06$, $p = 0{,}67$) için anlamlı bir yordayıcı olmamıştır.

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Address for Correspondence/Yazışma Adresi: İbrahim Zeyrek, Clinic of Child and Adolescent Psychiatry, Memorial Diyarbakır Hospital, Diyarbakır, Türkiye
E-mail / E-posta: dribrahimzeyrek@gmail.com
ORCID ID: orcid.org/0000-0003-2650-0663

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ABSTRACT

CONCLUSION: Adolescents who have experienced sexual abuse exhibit significant psychopathological symptoms and lower resilience. Psychological resilience appears to be a crucial protective factor, mitigating the severity of depression, stress, and post-traumatic stress. These findings underscore the importance of interventions aimed at fostering resilience in this vulnerable population.

Keywords: Sexual abuse, adolescent, psychopathology, post-traumatic stress, psychological resilience

ÖZ

Sonuç: Cinsel istismar yaşamış ergenler, belirgin psikopatolojik semptomlar ve daha düşük psikolojik sağlamlık sergilemektedir. Psikolojik sağlamlık, depresyon, stres ve travma sonrası stresin şiddetini azaltan önemli bir koruyucu faktör olarak görünmektedir. Bu bulgular, bu hassas popülasyonda psikolojik sağlamlığı artırmayı amaçlayan müdahalelerin önemini vurgulamaktadır.

Anahtar Sözcükler: Cinsel istismar, ergen, psikopatoloji, travma sonrası stres, psikolojik sağlamlık

INTRODUCTION

Sexual abuse is a significant public health problem affecting adolescents worldwide, with substantial documented effects on mental health outcomes. Epidemiological data indicate that approximately 18% of girls and 7.6% of boys experience sexual abuse before the age of 18 (1), with prevalence rates potentially higher in clinical populations. Meta-analytic evidence demonstrates that adolescents with a history of sexual abuse exhibit significantly elevated rates of depression, anxiety, and posttraumatic stress disorder compared to non-abused peers (2). These findings have been consistently replicated across diverse populations and settings (3). While this robust evidence base establishes the detrimental effects of sexual abuse on adolescent mental health, an important clinical and empirical question remains unanswered: among adolescents who have experienced sexual abuse, what factors account for differences in mental health outcomes, and to what extent can psychological resilience explain these differences?

Trauma theory provides a foundational framework for understanding the psychological mechanisms through which sexual abuse exerts its harmful effects. According to trauma theory, exposure to traumatic events such as sexual abuse disrupts normal psychological functioning through multiple pathways (4). Specifically, trauma theory posits that traumatic experiences are encoded in memory in a fragmented and disorganized manner, leading to intrusive memories, avoidance behaviors, and heightened physiological arousal characteristic of posttraumatic stress disorder (5). Beyond post-traumatic stress disorder (PTSD), trauma exposure has been linked to elevated rates of depression, anxiety, and general stress symptoms through several mechanisms: (1) disruption of core beliefs about safety and trust, (2) alterations in emotional regulation capacities, and (3) changes in social functioning and interpersonal relationships (6). These mechanisms collectively contribute to the broad spectrum of psychopathological outcomes observed in trauma-exposed adolescents.

However, not all individuals exposed to trauma develop significant psychopathology, a phenomenon that resilience theory seeks to explain. Resilience is conceptualized as a dynamic process involving the interaction of individual, family, and community factors that enable individuals to maintain or regain psychological well-being in the face of adversity (7). According to the social ecology of resilience framework (8), resilience operates through multiple protective mechanisms: (1) individual capacity factors such as emotional regulation skills, cognitive flexibility, and adaptive coping strategies; (2) family support factors such as parental warmth, secure attachment, and family cohesion; and (3) community resource factors such as access to mental health services, peer support networks, and community connectedness. These protective mechanisms may buffer against the negative psychological consequences of trauma by: (a) enhancing emotional regulation, allowing individuals to process traumatic experiences without becoming overwhelmed; (b) providing social support and validation, which counteracts the isolation and shame often associated with trauma; and (c) facilitating the development of effective coping strategies that enable individuals to manage stress and adversity. The multidimensional nature of resilience suggests that protective factors operate through multiple pathways, potentially explaining why some trauma-exposed adolescents develop significant psychopathology while others maintain relatively good mental health.

Empirical research has consistently documented the detrimental effects of sexual abuse on multiple dimensions of adolescent psychopathology. A meta-analytic review by Hailes et al. (2) examined 124 studies and found that adolescents with a history of sexual abuse exhibit significantly elevated rates of depression, anxiety, and posttraumatic stress disorder compared to non-abused peers, with large effect sizes. Similarly, Dworkin et al. (3) conducted a systematic review of 36 studies on sexual assault victimization and psychopathology and found robust associations between sexual abuse and depression, anxiety, and PTSD across diverse populations. These meta-analytic findings provide strong empirical support for our first hypothesis: adolescents with a history of sexual abuse will report significantly higher levels of depression, anxiety, stress, and posttraumatic stress symptoms compared to their non-abused peers. The consistency and magnitude of these effects across multiple studies and populations underscore the profound psychological impact of sexual abuse on adolescent mental health.

Converging evidence supports the protective role of psychological resilience in mitigating trauma effects. Yang et al. (9) found that resilience partially mediated the relationship between childhood abuse and depression, while Mesman et al. (10) identified resilience as a significant protective factor against depression and anxiety. Domhardt et al. (11) similarly found resilience associated with better psychological outcomes in child sexual abuse survivors. However, a critical distinction exists between demonstrating that resilience is associated with better outcomes and demonstrating that resilience predicts these outcomes. The present study examines the predictive capacity of psychological resilience—the extent to which resilience explains variance in depression, anxiety, stress, and posttraumatic stress symptoms among adolescents with a history of sexual abuse. Thus, we formulate our second hypothesis: psychological resilience will be negatively associated with depression, anxiety, stress,

and posttraumatic stress symptoms, and our third hypothesis: psychological resilience will serve as a significant negative predictor of these outcomes after controlling for demographic variables(age and gender).

Despite substantial literature on the effects of sexual abuse and on the protective role of resilience, important gaps remain. Few studies have examined the predictive capacity of resilience across multiple psychopathology dimensions simultaneously, and research in non-Western populations, particularly in Türkiye, is limited. The present study addresses these gaps by: (1) examining the psychological impact of sexual abuse on Turkish adolescents; (2) investigating resilience's predictive capacity for depression, anxiety, stress, and posttraumatic stress; (3) employing hierarchical multiple regression to quantify resilience's unique contribution beyond demographic variables; and (4) providing evidence to inform resilience-focused interventions in Turkish clinical settings.

This study has two primary objectives. The first objective is to examine whether adolescents with sexual abuse history exhibit significantly higher depression, anxiety, stress, and posttraumatic stress symptoms compared to non-abused peers, grounded in trauma theory (4) and supported by meta-analytic evidence (2,3). The second objective is to determine the predictive role of psychological resilience in the relationship between sexual abuse and psychopathology and to quantify the extent to which resilience explains the variance in these outcomes after controlling for demographic variables. To achieve these objectives, we formulated three hypotheses: Hypothesis 1: Adolescents with sexual abuse history will report significantly higher depression, anxiety, stress, and posttraumatic stress symptoms compared to non-abused peers (2,3). Hypothesis 2: Psychological resilience will be negatively associated with these symptoms in the case group (9-11). Hypothesis 3: Psychological resilience will serve as a significant negative predictor of these outcomes after controlling for age and gender (8).

This study makes several important contributions. It is among the first to examine the predictive capacity of resilience across multiple psychopathology dimensions among Turkish adolescent survivors of sexual abuse, addressing a gap in the non-Western literature. Second, simultaneously examining depression, anxiety, stress, and posttraumatic stress provides a comprehensive understanding of the protective role of resilience. Third, hierarchical multiple regression analysis quantifies the unique contribution of resilience beyond demographic variables. Fourth, recruiting the control group from the same clinical setting (healthy siblings of clinic attendees) enhances ecological validity. Finally, by demonstrating the predictive capacity of resilience, this study provides evidence to inform resilience-focused interventions for adolescent survivors of sexual abuse in Turkish clinical settings.

METHODS

Participants and Procedure

This case-control study was conducted between June and November 2025 at the child and adolescent psychiatry outpatient clinic of a university hospital. The study included 114 adolescents aged 12–18 years. The sample was divided into two groups: a case group of 56 adolescents with a history of sexual abuse and a control group of 58 adolescents with no such history. The case group comprised adolescents referred to the clinic for evaluation and treatment following sexual abuse. The control group consisted of healthy siblings of children and adolescents presenting to the child and adolescent psychiatry outpatient clinic. These siblings were recruited as a comparison group to represent typically developing adolescents without a history of sexual abuse or other significant trauma. The siblings were matched to the case group by age and socioeconomic status to control for potential confounders. Inclusion criteria for the control group required participants to be between 12 and 18 years of age and to be siblings of clinic attendees. Exclusion criteria for the control group included a personal history of any form of abuse (physical, emotional, or sexual), a current or past psychiatric diagnosis, and a current psychological treatment. This recruitment strategy allowed for a more ecologically valid comparison group, as both groups were drawn from the same clinical setting and community context.

Ethical approval for the study was obtained from the university's institutional review board. Ethical approval for the study was obtained from Recep Tayyip Erdoğan University Ethics Committee on 29.05.2025 with the decision number 2025/246. Written informed consent was obtained from all participants and their legal guardians prior to their inclusion in the study. All procedures were conducted in accordance with the Declaration of Helsinki.

Depression Anxiety Stress Scale 21 (DASS 21)

The DASS-21 is a shortened version of the DASS-24, originally developed by Lovibond and Lovibond (12) to assess the adverse effects associated with depression, anxiety, and stress. Each of the three distinct sets of DASS21 scales comprises seven items, and the ultimate scores for each variable are derived by aggregating the scores of the corresponding items (13).

Sarıçam conducted a study on the psychometric properties of the Turkish version of the DASS-21 scale in normal and clinical samples (14). In the control group, test-retest correlation coefficients were reported as follows: r = 0.68 for the depression subscale; r = 0.66 for the anxiety subscale; and r = 0.61 for the stress subscale. The DASS has a Cronbach's alpha of 0.87. It consists of 42 items, with a mean score (M = 50.0) and a [standard deviation (SD) = 21.04]. The alpha reliabilities for its subscales are as follows: stress subscale = 0.58, anxiety subscale = 0.51, and depression subscale = 0.63. This instrument comprises a 4-point Likert-type response format and features seven items dedicated to assessing the dimensions of depression, stress, and anxiety. Scores of 5 or higher on the depression subscale, 4 or higher on the anxiety subscale, and 8 or higher on the stress subscale signify the presence of the corresponding condition.

Child Revised Impact of Event Scale (CRIES)

The CRIES, developed by the Children and War Foundation, has been used for many years in various countries. The 8-item form of the scale consists of intrusive thoughts and avoidance subscales; when a 5-item arousal subscale is added, it becomes the 13-item form. The items are scored on a scale of 0 (not at all), 1 (rarely), 3 (sometimes), and 5 (often). Scores range from 0 to 40 for CRIES-8 and 0 to 65 for CRIES-13, with higher scores indicating more PTSD symptoms. A cut-off score of 30 for CRIES-13 and 17 for CRIES-8 has been reported to provide maximum sensitivity and specificity in detecting PTSD (15,16).

Child and Youth Resilience Measure (CYRM)

The initial 28-item version of this assessment was formulated using data gathered from eleven countries and incorporated three subscales and eight distinct sub-dimensions. This evaluative instrument was developed using both quantitative and qualitative methodologies, with a socio-ecological perspective underlying its design (17). Liebenberg et al. (18) subsequently conducted a short-form study, resulting in a condensed 12-item version following two separate research endeavours. The factor loadings for this scale range from 0.39 to 0.88. and the internal consistency coefficient was 0.84. Responses are captured on a five-point Likert scale ranging from "Describes me completely" (5) to "Does not describe me at all" (1). A higher score indicates a greater degree of resilience. The Turkish validation and reliability analysis were performed by Arslan (19).

All three assessment instruments (DASS-21, CRIES-13, and CYRM-12) have been validated for use with adolescents aged 12–18 years. The DASS-21 has demonstrated adequate internal consistency and test-retest reliability in adolescent populations (20,21), with Turkish validation confirming its psychometric properties in Turkish adolescents (14). The CRIES-13 was specifically designed for children and adolescents aged 8-18 years and has been extensively validated in trauma-exposed youth, including sexual abuse survivors (15,22), with Turkish validation supporting its use in Turkish adolescent samples (16). The CYRM-12 has been validated for youth aged 10–23 years and has demonstrated reliability and validity in Turkish populations and in trauma-exposed youth (23,24). All three instruments are appropriate for the 12–18-year age range in our study sample.

Statistical Analysis

All statistical analyses were performed using IBM SPSS Statistics version 27.0. Before any analyses were initiated, the dataset was scrutinised for missing values and its adherence to the assumptions of normality, linearity, and homogeneity of variance was assessed. Normality was determined by examining skewness and kurtosis coefficients, which confirmed that the distributions of all variables under investigation were suitable. Initial evaluations of disparities in age and gender between groups were conducted using an independent-samples t-test and a chi-square test, respectively. Group differences in scale scores were examined using independent-samples t-tests. Homogeneity of variances was evaluated with Levene's test; when it was violated, Welch's t-test was reported. Prior to conducting the multivariate analysis of covariance (MANCOVA), assumptions of normality, linearity, homogeneity of regression slopes, and equality of covariance matrices were tested. Levene's tests confirmed the homogeneity of error variances across dependent variables. Because Box's M test was significant ($p = 0.002$), Pillai's Trace was used as the multivariate test statistic, given its robustness to covariance heterogeneity. An MANCOVA was conducted to compare the patient and control groups on depression, anxiety, stress, posttraumatic stress, and psychological resilience, controlling for age and gender. Following detection of a significant multivariate effect, individual univariate ANCOVAs were performed for each dependent variable, and partial eta-squared (η^2) was used to report effect sizes. Pearson correlation analyses were employed to investigate the relationships between various factors. Hierarchical multiple regression analyses were then undertaken to ascertain whether psychological resilience could predict depression, anxiety, stress, and PTSD symptoms after accounting for the influence of age and gender. For each analytical model, age and gender were incorporated in the initial step, with psychological resilience introduced in the second step to evaluate the incremental variance explained (ΔR^2). A p-value of less than 0.05 (two-tailed) was established as the threshold for statistical significance.

RESULTS

The sociodemographic and clinical characteristics of the participants are presented in Table 1. The sample consisted of 114 adolescents (71 girls and 43 boys) aged 12–18 years (M = 15.17, SD = 1.68). Preliminary analyses indicated no significant age difference between the patient (M = 15.18, SD = 1.52) and control (M = 15.16, SD = 0.83) groups, $t(112) = -0.07$, $p = 0.94$. However, the gender distribution differed significantly [χ^2 (1, n = 114) = 18.48, $p < 0.001$], with girls overrepresented in the case group (82%) compared with the control group (43%).

As illustrated in Table 2, the case group exhibited significantly higher levels of symptoms of depression, anxiety, and stress compared to the control group (all $p < 0.01$). Furthermore, the analysis revealed

Table 1. Sociodemographic and clinical characteristics of participants.

Characteristic	Control (n = 58), n (%)	Case (n = 56), n (%)
Age (years)		
Mean (standard deviation)	(0.83)	18 (1.52)
Gender, n (%)		
Female	25 (43.1%)	46 (82.1%)
Male	33 (56.9%)	10 (17.9%)
Number of siblings in the family		
1	5 (8.6)	4 (7.1)
2	18 (31.0)	19 (33.9)
3 or more	35 (60.3)	33 (58.9)
Family status		
Parents living together	46 (79.3)	37 (66.1)
Divorced	7 (12.1)	16 (28.6)
Deceased parent	5 (8.6)	3 (5.4)
Socioeconomic status (monthly income)		
Low	6 (10.3)	25 (44.6)
Middle	48 (82.8)	25 (44.6)
High	4 (6.9)	6 (10.7)
Any significant medical illness		
Yes	1 (1.7)	6 (10.7)
No	57 (98.3)	50 (89.3)
Any psychiatric illness		
Yes	0 (0.0)	24 (42.9)
No	58 (100.0)	32 (57.1)

Table 2. Comparison of psychopathology and resilience between groups.

Measure	Control (n = 58) M (SD)	Patient (n = 56) M (SD)	Skewness	Kurtosis	t(df)	p
DASS-depression	81 (5.36)	38 (5.18)	34	−1.00	−4.62 (112)	<0.001
Depression-anxiety	5.12 (4.82)	8.50 (4.30)	0.47	−0.40	−3.95 (112)	<0.001
DASS-stress	6.60 (5.24)	9.66 (4.40)	0.35	−0.26	−3.37 (112)	0.001
CRIES-13	21.53 (17.91)	38.64 (13.26)	−0.06	−0.95	−5.81 (105.01)†	<0.001
Psychological resilience	44.38 (11.57)	35.16 (9.16)	0.04	−0.92	4.71 (112)	<0.001

Skewness and Kurtosis values are reported for the total sample (n = 114). †For CRIES-13, Levene's test indicated heterogeneity of variances (p = 0.009); therefore, Welch's t-test was reported (equal variances not assumed).
DASS: Depression, Anxiety and Stress Scale, CRIES-13: Children's Revised Impact of Event Scale-13, M: Mean, SD: Standard deviation, t(df): t-test statistic (degrees of freedom).

markedly elevated post-traumatic stress symptoms (CRIES-13) and significantly lower psychological resilience in patients compared with healthy controls (both $p < 0.001$).

The overall MANCOVA revealed a significant multivariate main effect of group on the combined dependent variables (Pillai's Trace = 0.20, $F(5,105) = 5.32$, $p < 0.001$, $\eta^2 = 0.20$), indicating that the psychological profiles of the two groups differed significantly after adjusting for age and gender. No significant multivariate effects were found for sex ($p = 0.297$) or for the group × sex interaction ($p = 0.940$). Results of the follow-up univariate ANCOVAs, including adjusted marginal means (SEs) by group, are presented in Table 3. Compared with controls, patients reported significantly higher depression [$F(1,109) = 13.04$, $p < 0.001$, $\eta^2 = 0.11$], anxiety [$F(1,109) = 10.31$, $p = 0.002$, $\eta^2 = 0.09$], stress [$F(1,109) = 6.40$, $p = 0.013$, $\eta^2 = 0.06$], and posttraumatic stress [$F(1,109) = 18.62$, $p < 0.001$, $\eta^2 = 0.15$] scores and significantly lower psychological resilience [$F(1,109) = 14.32$, $p < 0.001$, $\eta^2 = 0.12$] scores. No significant main effects of age or sex were observed across dependent variables.

Within the case group, Pearson correlation analyses demonstrated significant negative associations between psychological resilience and depression ($r = −0.36$, $p = 0.006$), stress ($r = −0.34$, $p = 0.011$), and posttraumatic stress symptoms ($r = −0.48$, $p < 0.001$). The correlation with anxiety was non-significant ($r = −0.08$, $p = 0.58$). The DASS-21 subscales were strongly intercorrelated ($r = 0.50–0.84$, $p < 0.001$) and positively related to CRIES-13 scores ($r = 0.49–0.54$, $p < 0.001$).

To further explore the protective role of psychological resilience, multiple hierarchical regression analyses were conducted within the case group (Table 4). After controlling for age and gender, psychological resilience emerged as a significant negative predictor of depression ($\beta = −0.35$, $p = 0.011$), stress ($\beta = −0.30$, $p = 0.026$), and posttraumatic stress symptoms ($\beta = −0.44$, $p = 0.001$), but not of anxiety ($\beta = −0.06$, $p = 0.67$). The inclusion of resilience in the second step explained an additional 11.4% of the variance in depression, 8.8% in stress, and 18.5% in posttraumatic stress, beyond the effects of age and gender. The final models accounted for 14%, 14%, and 27% of the variance in depression, stress, and posttraumatic stress, respectively (all $p < 0.05$), whereas the model for anxiety was non-significant ($R^2 = 0.009$, $p = 0.92$). Neither age nor gender contributed significantly to any of the models.

DISCUSSION

The present study examined the psychological impact of sexual abuse on Turkish adolescents and the protective role of psychological resilience. Consistent with our first hypothesis and extensive meta-analytic evidence, adolescents with a history of sexual abuse exhibited significantly higher levels of depression, anxiety, stress, and posttraumatic stress symptoms compared to their non-abused peers (2,3). Specifically, the case group reported substantially elevated scores on the DASS-21 depression, anxiety, and stress subscales, as well as on the CRIES-13 posttraumatic stress measure. These findings are consistent with the well-established literature demonstrating that sexual abuse exposure is associated with broad-spectrum psychopathology in adolescents (6). The magnitude of these group differences underscores the profound psychological impact of sexual abuse on adolescent mental health and validates the clinical significance of sexual abuse in Turkish populations.

Table 3. Follow-up univariate ANCOVA results for the effect of group (patient vs. control) on depression, anxiety, stress, posttraumatic stress, and psychological resilience (controlling for age and sex).

Dependent variable	Adjusted mean (control) (SE)	Adjusted mean (patient) (SE)	F(1, 109)	p	Partial η^2
DASS-depression	90 (0.70)	10 (0.93)	04	<0.001*	0.11
DASS-anxiety	5.22 (0.61)	8.46 (0.80)	10.31	0.002*	0.09
DASS-stress	6.75 (0.64)	9.43 (0.84)	6.40	0.013*	0.06
CRIES-13	22.23 (2.05)	36.89 (2.71)	18.62	<0.001*	0.15
Psychological resilience	44.22 (1.38)	35.59 (1.81)	14.32	<0.001*	0.12

Values represent univariate F-tests from the MANCOVA, with age and sex included as covariates. Adjusted means are estimated marginal means. All results remained significant after Bonferroni correction ($\alpha = 0.05$). Group coded as 0 = control, 1 = patient.
DASS: Depression, Anxiety and Stress Scale, CRIES-13: Children's Revised Impact of Event Scale-13, SE: Standard error, ANCOVA: Analysis of covariance, MANCOVA: Multivariate analysis of covariance.

Table 4. Hierarchical multiple regression analyses predicting psychopathology from psychological resilience (controlling for age and gender).

Dependent variable	Model	Predictor	β	t	p	F(Δdf)	R^2	ΔR^2
DASS-depression	1	Age	15	12	27	F(2,53) = 0.73	0.027	—
		Gender	0.07	0.50	0.62			
	2	Psychological resilience	−0.35	−2.62	0.011*	F(1,52) = 6.87	0.140	0.114
DASS-anxiety	1	Age	0.06	0.44	0.66	F(2,53) = 0.16	0.006	—
		Gender	0.01	0.08	0.94			
	2	Psychological resilience	−0.06	−0.43	0.67	F(1,52) = 0.19	0.009	0.004
DASS-stress	1	Age	0.21	1.57	0.12	F(2,53) = 1.34	0.048	—
		Gender	0.07	0.51	0.62			
	2	Psychological resilience	−0.30	−2.30	0.026*	F(1,52) = 5.28	0.136	0.088
CRIES (post-traumatic stress)	1	Age	0.24	1.83	0.07	F(2,53) = 2.44	0.084	—
		Gender	0.17	1.29	0.20			
	2	Psychological resilience	−0.44	−3.63	0.001*	F(1,52) = 13.20	0.270	0.185

β: Standardized regression coefficient, ΔR^2: Change in explained variance after adding psychological resilience in Step 2, DASS: Depression Anxiety Stress Scale, CRIES: Children's Revised Impact of Event Scale.

Our second and third hypotheses were partially supported. As expected, we found a significant negative correlation between psychological resilience and symptoms of depression, stress, and post-traumatic stress within the case group. Furthermore, resilience emerged as a significant negative predictor of these outcomes, even after controlling for age and gender. This finding aligns with previous research highlighting the crucial role of resilience as a buffer against the negative psychological consequences of trauma (9,10,25).

Resilience, conceptualized as the capacity to adapt and recover from adversity (7,26) has been identified as a key protective factor in trauma-exposed populations. Yang et al. (9) demonstrated in their study of adolescent abuse survivors that psychological resilience mediated the relationship between childhood abuse and depression, with higher resilience associated with lower depressive symptoms. Similarly, Milovančević et al. (27) found that resilience was a significant protective factor against psychopathology in youth with histories of childhood abuse. Our findings extend this literature by demonstrating that resilience not only correlates with better mental health outcomes but also serves as a significant predictor of lower levels of depression, stress, and post-traumatic stress symptoms, even when demographic variables are controlled for.

However, contrary to our expectations, we did not find a significant relationship between psychological resilience and anxiety. This finding warrants further consideration. While some studies have reported a negative association between resilience and anxiety in trauma-exposed youth (10), others have suggested that the protective role of resilience against internalizing symptoms, including anxiety, may be relatively minor (25). The complex nature of anxiety, which can manifest as both a state and a trait, may contribute to this discrepancy. T he measure of resilience used in this study may not fully capture the protective factors most relevant to anxiety. Future research should explore this relationship in more detail, perhaps using different measures of anxiety and resilience, and considering the potential mediating role of other factors, such as social support (28).

The non-significant relationship between resilience and anxiety can be explained by several factors. First, anxiety measured by the DASS-21 reflects immediate emotional responses to stress rather than stable personality traits, which may be less influenced by resilience than depression or stress (29,30). Second, the CYRM-12 resilience measure may not capture anxiety-specific protective factors such as emotion regulation or coping skills that directly address threat perception and fear responses in trauma survivors (11). Third, the protective effect of resilience on anxiety may depend on other factors not examined here, such as social support—adolescents with high resilience but weak social networks may still experience significant anxiety (28). Finally, heightened anxiety during adolescence is developmentally normal due to brain changes in threat detection, which may mask resilience's protective effects (31). These findings suggest that anxiety in trauma-exposed adolescents requires targeted interventions beyond resilience-building programs.

While our findings are consistent with existing literature from Western populations, the present study contributes important contextual and cultural insights. This is among the first studies to examine the protective role of resilience in Turkish adolescent survivors of sexual abuse, extending research to a non-Western, culturally distinct population. Cultural factors may influence both the expression of psychological symptoms and the protective mechanisms through which resilience operates. For instance, in Turkish culture, family support and community connectedness are particularly valued protective factors (32), and the CYRM-12's assessment of family and community resilience dimensions may be particularly relevant in this cultural context. Second, the Turkish mental health system and access to trauma-specific interventions may differ from those in Western contexts, making the identification of protective factors, such as resilience, particularly important to inform culturally adapted interventions. Third, the prevalence and presentation of sexual abuse in Turkish adolescents may differ from Western populations due to cultural norms, help-seeking behaviors, and reporting patterns (33). These contextual factors highlight the importance of conducting research in diverse populations

to understand how universal psychological processes (such as resilience) operate within specific cultural and social contexts.

Study Limitations

Several limitations should be considered when interpreting these findings. First, the cross-sectional design of this study precludes causal inferences about the relationship between resilience and mental health outcomes. Longitudinal research would be valuable for understanding the temporal dynamics of these relationships and identifying potential causal pathways. Second, the unequal gender distribution between groups, with a higher proportion of females in the case group, may limit the generalizability of the findings. Future research should aim for more balanced gender representation or explicitly examine gender differences in the relationship between sexual abuse, resilience, and psychopathology. Third, we did not collect detailed information about characteristics of sexual abuse (e.g., timing, duration, and relationship to the perpetrator), which limits our ability to examine how abuse characteristics relate to resilience and mental health outcomes.

Future research should employ longitudinal designs to examine the developmental trajectories of resilience and mental health in adolescent survivors of sexual abuse. Additionally, qualitative research exploring the lived experiences of resilient survivors could provide valuable insights into the mechanisms through which resilience operates in this population. Research examining the effectiveness of resilience-focused interventions combined with anxiety-specific treatments would help develop more comprehensive and effective treatment approaches for adolescent survivors of sexual abuse.

CONCLUSION

This study provides further evidence of the significant and detrimental impact of sexual abuse on adolescent mental health. Our findings indicate that adolescents with a history of sexual abuse exhibit higher levels of depression, anxiety, stress, and post-traumatic stress symptoms and lower levels of psychological resilience than their non-abused peers. While psychological resilience appears to be a crucial protective factor against depression, stress, and post-traumatic stress, its relationship with anxiety is more complex and requires further investigation. These findings have important implications for clinical practice, highlighting the need for interventions that not only address the psychopathological consequences of sexual abuse but also focus on fostering resilience in this vulnerable population. Future research should employ longitudinal designs and more comprehensive assessments to further elucidate the complex interplay between trauma, resilience, and mental health in adolescents.

Ethics

Ethics Committee Approval: Ethical approval for the study was obtained from Recep Tayyip Erdoğan University Ethics Committee on 29.05.2025 with the decision number 2025/246.

Informed Consent: Written informed consent was obtained from all participants and their legal guardians prior to their inclusion in the study.

Footnotes

Authorship Contributions

Surgical and Medical Practices: İ.Z., A.Ö., U.T., Y.F., Concept: İ.Z., A.Ö., U.T., Y.F., Design: İ.Z., A.Ö., U.T., Y.F., Data Collection or Processing: İ.Z., U.T., Y.F., Analysis or Interpretation: İ.Z., A.Ö., Literature Search: İ.Z., A.Ö. Writing: İ.Z., A.Ö., U.T., Y.F.

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