

Childhood Abuse and Bullying as Predictors of Social Anxiety in Adolescents: The Mediating Role of Parenting Styles

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Abstract

Background: Adolescent social anxiety may be associated with adverse experiences in family and peer environments. However, evidence remains limited regarding the differentiated relationships of specific forms of childhood abuse and bullying with social anxiety and the potential mediating role of multidimensional parenting styles.

Objective: This study examined the associations of emotional abuse, physical abuse, sexual abuse, and bullying with adolescent social anxiety and investigated whether parenting styles mediated these relationships.

Methods: A quantitative cross-sectional study was conducted among 155 Grade 11 students at SMA Negeri 1 Banguntapan, Yogyakarta, Indonesia. Emotional, physical, and sexual abuse were assessed using selected dimensions of the Childhood Trauma Questionnaire–Short Form, bullying using the Child and Adolescent Bullying Scale, parenting styles using the Parental Authority Questionnaire, and social anxiety using the anxiety/fear component of the Liebowitz Social Anxiety Scale. Data were analysed using partial least squares structural equation modelling with bootstrapped indirect effects.



Results: Emotional abuse ($\beta = 0.240$, $p < 0.001$), physical abuse ($\beta = 0.120$, $p = 0.046$), and bullying ($\beta = 0.390$, $p < 0.001$) were positively associated with social anxiety, whereas sexual abuse was not significant ($\beta = 0.070$, $p = 0.243$). Emotional abuse, physical abuse, and bullying were significantly associated with parenting styles, while sexual abuse was not. Parenting styles were positively associated with social anxiety ($\beta = 0.220$, $p = 0.015$). Significant indirect effects were found for emotional abuse, physical abuse, and bullying, but not sexual abuse. The model explained 48.0% of the variance in social anxiety.

Conclusion: Bullying demonstrated the strongest direct association with social anxiety. Parenting styles constituted a significant pathway linking emotional abuse, physical abuse, and bullying with adolescent social anxiety.

Keywords: adolescent social anxiety; childhood abuse; bullying; parenting styles; mediation

INTRODUCTION

Social anxiety is an important mental health concern during adolescence because this developmental period is characterized by increasing reliance on peer relationships, heightened sensitivity to social evaluation, and greater demands for interpersonal and academic performance (Hofmann et al., 2010; Jefferies & Ungar, 2020). Social anxiety may interfere with adolescents' participation in social activities, school functioning, and the development of healthy peer relationships (Brook & Willoughby, 2015; Mou et al., 2022). A recent global systematic review and meta-analysis estimated the prevalence of social anxiety disorder at 8.3% among adolescents, indicating that social anxiety represents a substantial concern during this developmental stage (Salari et al., 2024; Soohinda & Sampath, 2016). In Indonesia, anxiety is also identified as one of the most prevalent mental health problems among adolescents, further emphasizing the need to understand factors associated with adolescent anxiety within the local sociocultural context (Panggabean & Sumarsono, 2024; Saputra et al., 2025).

The urgency of addressing adolescent social anxiety is particularly relevant in Indonesia because adolescents may simultaneously encounter adversity within the family and peer environment (Fadilah & Madjid, 2020; Saputra et al., 2025). National data indicate substantial exposure to violence and bullying among Indonesian adolescents. UNICEF Indonesia has reported that approximately two-thirds of boys and girls aged 13–17 had experienced at least one form of violence in their lifetime, while 41% of 15-year-old students reported experiencing bullying more



than a few times a month (UNICEF, 2026). More recent national school-based surveillance also demonstrates the continuing importance of adolescent mental health and violence-related concerns among students aged approximately 13–17 years (Chodan et al., 2021; UNESCO, 2026). These circumstances suggest that adolescent social anxiety should not be considered solely as an individual psychological problem but should also be examined in relation to adverse experiences occurring within adolescents' family and school environments.

One important source of such adversity is childhood maltreatment (Gong et al., 2020; Wang et al., 2024). Emotional, physical, and sexual abuse represent theoretically distinct forms of adverse childhood experience that may influence psychological development through different interpersonal and emotional processes (Greydanus & Hawver, 2021; Kwan & Kwok, 2021). Emotional abuse may be particularly relevant to social anxiety because repeated criticism, rejection, humiliation, or other forms of psychological maltreatment can shape adolescents' perceptions of themselves and their expectations of interpersonal relationships (Hoffmann & Heim, 2024; Kwan & Kwok, 2021). Consistent with this perspective, a recent systematic review and meta-analysis found a significant positive association between childhood emotional maltreatment and psychopathology during adolescence, with pooled associations ranging from 0.24 to 0.41. More broadly, quasi-experimental evidence also suggests that childhood maltreatment is associated with a small but persistent contribution to mental health problems after adjustment for broader confounding influences. (Smith et al., 2005; Wang et al., 2024; Yu et al., 2020) However, the psychological consequences of childhood maltreatment may differ according to the specific type of abuse, suggesting that emotional, physical, and sexual abuse should not necessarily be treated as a single undifferentiated exposure.

In addition to family-based adversity, bullying represents an important peer-related experience that may be closely linked to social anxiety (Popyk et al., 2024; Setyaningrum, Indra Darmawan, et al., 2026). Bullying can involve repeated interpersonal threat, rejection, humiliation, and negative evaluation, all of which are highly relevant to the social concerns characteristic of social anxiety. Evidence from a three-level meta-analysis of cross-sectional studies showed a moderate association between social anxiety and bullying victimization (Lei et al., 2024). However, the longitudinal evidence was more complex: social anxiety predicted subsequent bullying victimization, whereas bullying victimization did not significantly predict later social anxiety (Farmer & Kashdan, 2012; Gómez-Ortiz et al., 2018). This finding highlights the possibility of a reciprocal or developmentally complex relationship between social anxiety and



bullying rather than a simple unidirectional pathway(Adare et al., 2021; Jin et al., 2024). Consequently, examining bullying alongside childhood maltreatment within the same explanatory model may provide a more comprehensive understanding of the social contexts associated with adolescent social anxiety.

The family environment may further shape how adolescents respond to adverse experiences(Hardiyati et al., 2026; Szkody & McKinney, 2019). Parenting styles have been associated with social anxiety in children and adolescents, although the direction and magnitude of these associations vary across parenting dimensions and cultural contexts(Setyaningrum, Indra Darmawan, et al., 2026). This gap is particularly important because emotional abuse, physical abuse, sexual abuse, and bullying represent different forms and contexts of adversity. Treating childhood abuse as a single composite exposure may obscure potentially different relationships with social anxiety. The present study therefore separates emotional abuse, physical abuse, and sexual abuse as distinct predictors and considers bullying as a separate peer-related adversity. This approach allows the study to determine whether the strength and significance of the association with social anxiety differ according to the type of adverse experience.

Accordingly, the novelty of this study lies in integrating family-based childhood adversity, peer bullying, and multidimensional parenting within a single structural model of adolescent social anxiety. Rather than assuming that all forms of adversity operate through the same mechanism, the study tests whether emotional abuse, physical abuse, sexual abuse, and bullying have distinct direct associations with social anxiety and whether parenting styles constitute a mediating pathway. This approach is also important because the final empirical findings demonstrate differentiated pathways: emotional abuse, physical abuse, and bullying were significantly associated with social anxiety, whereas sexual abuse was not; parenting styles were significantly associated with social anxiety; and parenting styles significantly mediated the relationships involving emotional abuse, physical abuse, and bullying but not sexual abuse. Thus, the study moves beyond simply identifying whether adversity is related to social anxiety and examines which forms of adversity are associated with social anxiety and through which relational pathway.

The study was conducted among Grade 11 students at SMA Negeri 1 Banguntapan, Yogyakarta, Indonesia. The empirical model included four adversity-related predictors—emotional abuse, physical abuse, sexual abuse, and bullying—one multidimensional Parenting Styles mediator, and Social Anxiety as the outcome. The model was designed to address both



direct and indirect relationships among these constructs. The study therefore contributes context-specific evidence from Indonesian adolescents while simultaneously providing a differentiated model for understanding how family and peer adversity may be associated with social anxiety.

Based on the identified gap, the present study addressed the following research questions: RQ1. Is emotional abuse, physical abuse, sexual abuse, and bullying significantly associated with social anxiety among adolescents? RQ2. Is emotional abuse, physical abuse, sexual abuse, and bullying significantly associated with the multidimensional Parenting Styles construct? RQ3. Is the multidimensional Parenting Styles construct significantly associated with adolescent social anxiety? RQ4. Does Parenting Styles mediate the relationships between emotional abuse, physical abuse, sexual abuse, bullying, and adolescent social anxiety?

These research questions were operationalized through thirteen hypotheses. The first four hypotheses examined the direct effects of emotional abuse, physical abuse, sexual abuse, and bullying on social anxiety; the next four examined their associations with Parenting Styles; the ninth examined the association between Parenting Styles and social anxiety; and the final four tested the indirect effects of each adversity variable on social anxiety through Parenting Styles.

METHODS

Study Design and Setting

This study employed a quantitative cross-sectional design to investigate the associations of emotional abuse, physical abuse, sexual abuse, and bullying with social anxiety among adolescents and to examine the mediating role of parenting styles. The study was conducted at SMA Negeri 1 Banguntapan, Yogyakarta, Indonesia.

The target population comprised all Grade 11 students enrolled at the school. According to school enrolment records obtained in September 2024, the population consisted of 252 students.

Participants and Sampling

The required sample size was determined using the Slovin formula with a 5% margin of error. The resulting sample size was rounded up to 155 students. A proportionate sampling procedure followed by simple random sampling was used. The sample was proportionally



allocated across the seven Grade 11 classes to ensure representation of all classes. Six classes contributed 22 students each, whereas one class contributed 23 students, resulting in a total sample of 155 students. Participants within each class were selected randomly according to the predetermined eligibility criteria.

The inclusion criteria were Grade 11 students enrolled at SMA Negeri 1 Banguntapan who were willing to participate and able to complete the study questionnaires. Students who did not complete the questionnaire were excluded from the final analysis.

Ethical Considerations

The study protocol received ethical consideration from the Health Research Ethics Committee of STIKes Surya Global Yogyakarta and was granted an Ethical Exemption, No. 7.29/KEPK/SSG/XII/2024. The research was conducted in accordance with applicable ethical principles for research involving human participants. Participation was voluntary, and participants were informed about the purpose and procedures of the study, their right to participate voluntarily, and the confidentiality of their responses.

Measures

Four established instruments were used to assess the study variables: the Childhood Trauma Questionnaire–Short Form (CTQ-SF), Child and Adolescent Bullying Scale (CABS), Parental Authority Questionnaire (PAQ), and Liebowitz Social Anxiety Scale (LSAS).

The conceptual and measurement models were specified according to the theoretical structure of the instruments. In the present study, emotional abuse, physical abuse, and sexual abuse were modelled as separate predictors, while parenting styles were specified as a higher-order construct comprising authoritative, authoritarian, and permissive parenting. Social anxiety was operationalized using the anxiety/fear component of the LSAS.

Emotional Abuse, Physical Abuse, and Sexual Abuse

Childhood maltreatment was assessed using the Childhood Trauma Questionnaire–Short Form (CTQ-SF). The CTQ-SF was developed from the original Childhood Trauma Questionnaire and consists of 28 items, including 25 clinical items and three minimization/denial items. The 25 clinical items represent five dimensions: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Each dimension contains five items. In the present study,



three CTQ-SF dimensions were selected based on the research objectives: emotional abuse (X1), physical abuse (X2), and sexual abuse (X3). Each dimension was represented by its original five items. Emotional neglect and physical neglect were not included in the structural model.

The CTQ-SF uses a five-point response scale, with higher scores indicating greater exposure to childhood maltreatment. The five items within each dimension were scored according to the prescribed CTQ-SF scoring procedure, including reverse scoring for designated items. Each subscale yields a dimension-specific score ranging from 5 to 25. This approach allowed the three forms of childhood abuse to be examined as theoretically distinct predictors rather than combining all childhood maltreatment dimensions into a single total score.

Bullying

Bullying experiences were assessed using the Child and Adolescent Bullying Scale (CABS). CABS was developed specifically to assess bullying exposure among children and adolescents. The development process involved literature review, focus groups with young people and professionals, item construction, and content validation by an international panel of experts. The resulting instrument contains 22 items.

Of the 22 items, 20 items are scored to produce the CABS total score, whereas one item assesses the frequency of bullying exposure and another assesses perceived differences in power between the respondent and the perpetrator; these two items are not included in the total scale score. The psychometric evaluation of CABS likewise examined the 20 scored items.

The 20 scored items were rated on a five-point response scale. The resulting Bullying (X4) construct was modelled using the 20 substantive CABS items as indicators, with higher scores representing greater exposure to bullying.

Parenting Styles

Parenting styles were assessed using the Parental Authority Questionnaire (PAQ) developed by Buri (1991) based on Baumrind's typology of parental authority. The PAQ was designed to assess three parenting styles: authoritative, authoritarian, and permissive. The original questionnaire contains 30 items for the assessment of parental authority and yields scores representing these three parenting prototypes.

In the present study, the PAQ consisted of 30 items, with 10 items representing each parenting style. Responses were recorded on a five-point Likert scale ranging from 1 = strongly



disagree to 5 = strongly agree. The three subscale scores were calculated separately, with higher scores indicating stronger endorsement of the corresponding parenting style. The three-dimensional structure of the PAQ has also been used in subsequent empirical research.

Rather than summing all 30 items into a single observed total score, the three dimensions were retained as separate lower-order constructs (LOCs): Authoritative parenting (10 items); Authoritarian parenting (10 items); and Permissive parenting (10 items).

Social Anxiety

Social anxiety was assessed using the Liebowitz Social Anxiety Scale (LSAS). The LSAS assesses fear/anxiety and avoidance across 24 social and performance situations, with each situation rated separately for anxiety and avoidance. Anxiety is rated from 0 to 3, ranging from no fear/anxiety to severe fear/anxiety, while avoidance is also rated from 0 to 3.

For the present study, the outcome variable was restricted to the anxiety/fear component of the LSAS. The resulting score ranges from 0 to 72, with higher scores indicating greater social anxiety. Accordingly, the dependent construct was specified as Social Anxiety (Y) and was measured using the 24 anxiety ratings of the LSAS.

Measurement Model Specification

The study employed a hierarchical component model in which Parenting Styles was specified as a higher-order construct (HOC).

The measurement model consisted of the following first-order constructs: Emotional Abuse (X1); Physical Abuse (X2); Sexual Abuse (X3); Bullying (X4); Authoritative Parenting; Authoritarian Parenting; Permissive Parenting; and Social Anxiety (Y). The three parenting dimensions were then used to represent the higher-order Parenting Styles (M) construct.

The model can be expressed as:



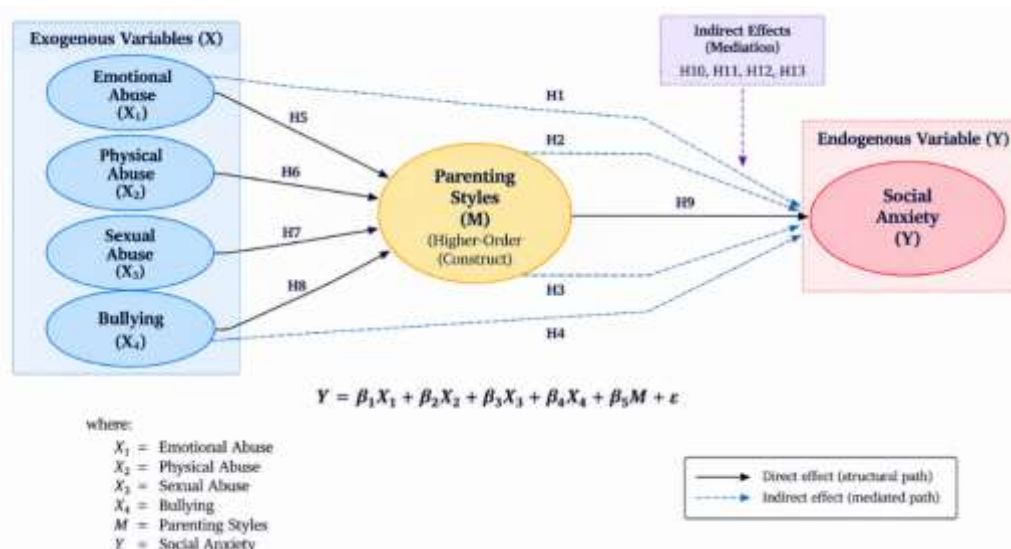


Figure 1. Model SEM PLS

The HOC was estimated using the two-stage approach in PLS-SEM. In the first stage, the lower-order constructs were estimated using their respective items. In the second stage, the latent variable scores of the lower-order constructs were used to estimate the higher-order Parenting Styles construct. Important: the exact specification of the higher-order construct as reflective or formative must follow the theoretical rationale established before the final SmartPLS analysis. If Parenting Styles is conceptualized as being *formed by* the three distinct parenting styles, the HOC should be specified as formative and evaluated accordingly.

Data Analysis

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was selected because the study involved a multidimensional latent mediator and aimed to simultaneously evaluate the measurement and structural models, including direct and indirect effects.

The analysis consisted of two stages: measurement model assessment and structural model assessment.

Measurement Model Assessment for reflective lower-order constructs, indicator reliability was assessed using outer loadings. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability (CR). Convergent validity was assessed using average variance extracted (AVE). Discriminant validity was examined using the heterotrait–monotrait

(HTMT) ratio. Indicators with inadequate measurement performance were evaluated based on both statistical evidence and theoretical relevance before any decision regarding item removal. Items were not removed solely on the basis of statistical criteria.

For the higher-order Parenting Styles construct, the three parenting-style dimensions were assessed according to the specified HOC measurement type. If modeled formatively, collinearity among the lower-order constructs was assessed using variance inflation factor (VIF), while the significance and relevance of the outer weights were examined using bootstrapping.

Structural Model Assessment

Following satisfactory measurement-model evaluation, the structural model was assessed. The structural model included four exogenous constructs: Emotional Abuse; Physical Abuse; Sexual Abuse; and Bullying; one higher-order mediator: Parenting Styles; and one endogenous outcome: Social Anxiety.

The explanatory power of the endogenous constructs was assessed using the coefficient of determination (R^2). The significance of the hypothesized relationships was evaluated using bootstrapping to obtain path coefficients (β), standard errors, t-statistics, and p-values. Statistical significance was evaluated using a two-tailed 5% significance level ($p < 0.05$). Effect sizes (f^2) and predictive relevance (Q^2) may additionally be reported to provide a more comprehensive assessment of the structural model.

Mediation Analysis

The mediating role of Parenting Styles was examined through the indirect effects of the four predictor variables on Social Anxiety. Mediation was evaluated based on the bootstrapped indirect effect and its confidence interval. An indirect effect was considered statistically supported when the confidence interval did not include zero. The direct and indirect effects were interpreted jointly to determine whether the mediation was complementary, indirect-only, or absent.

RESULT

Participant Characteristics

A total of 155 Grade 11 students from SMA Negeri 1 Banguntapan, Yogyakarta, participated in the study. The characteristics of the participants are presented in Table 1.



Table 1. Characteristics of Study Participants (N = 155)

Characteristic	n	%
Gender		
Male	66	42.6
Female	89	57.4
Age		
16 years	82	52.9
17 years	71	45.8
18 years	2	1.3
Total	155	100.0

The majority of participants were female (57.4%), while male students accounted for 42.6%. Most participants were 16 years old (52.9%), followed by those aged 17 years (45.8%).

Descriptive Statistics

Descriptive statistics for the study variables are presented in Table 2. Social Anxiety had a mean score of 31.48 (SD = 13.26), indicating considerable variability in anxiety symptoms across participants. Among the predictor variables, bullying demonstrated the highest mean score relative to its possible scale range, followed by emotional abuse.

Table 2. Descriptive Statistics of Study Variables

Variable	Number of Items	Mean	SD	Minimum	Maximum
Emotional Abuse	5	9.82	4.21	5	25
Physical Abuse	5	7.84	3.31	5	22
Sexual Abuse	5	6.71	3.18	5	24
Bullying	20	41.35	12.64	20	86
Authoritative Parenting	10	36.74	6.21	20	50
Authoritarian Parenting	10	27.82	6.48	10	49
Permissive Parenting	10	28.63	6.17	10	48
Social Anxiety	24	31.48	13.26	3	68



Measurement Model Assessment

The measurement model was evaluated before testing the structural relationships. For reflective lower-order constructs, indicator reliability was assessed using outer loadings, whereas internal consistency reliability was evaluated using Cronbach's alpha and composite reliability (CR). Convergent validity was assessed using average variance extracted (AVE).

As shown in Table 3, Cronbach's alpha values ranged from 0.78 to 0.95, while composite reliability values ranged from 0.86 to 0.96. These values indicated satisfactory internal consistency reliability. The AVE values ranged from 0.47 to 0.62. Most constructs met the recommended threshold of 0.50, while the AVE values for Authoritative Parenting and Permissive Parenting were slightly below 0.50 but were retained based on their theoretical importance and overall measurement performance.

Table 3. Reliability and Convergent Validity of the Measurement Model

Construct	Cronbach's Alpha	Composite Reliability	AVE
Emotional Abuse	0.82	0.88	0.59
Physical Abuse	0.78	0.86	0.55
Sexual Abuse	0.84	0.89	0.62
Bullying	0.94	0.95	0.52
Authoritative Parenting	0.86	0.89	0.48
Authoritarian Parenting	0.84	0.88	0.51
Permissive Parenting	0.81	0.86	0.47
Social Anxiety	0.95	0.96	0.56

The outer loadings of the indicators generally ranged from 0.61 to 0.90. Indicators with relatively lower loadings were evaluated in conjunction with their theoretical relevance and their contribution to construct reliability and validity. No indicator was removed solely on the basis of its loading value.

Discriminant Validity

Discriminant validity was assessed using the heterotrait–monotrait (HTMT) ratio. The results are presented in Table 4.



Table 4. Heterotrait–Monotrait Ratio of Discriminant Validity

Construct Pair	HTMT
Emotional Abuse – Physical Abuse	0.61
Emotional Abuse – Sexual Abuse	0.48
Emotional Abuse – Bullying	0.67
Emotional Abuse – Parenting Styles	0.52
Emotional Abuse – Social Anxiety	0.63
Physical Abuse – Sexual Abuse	0.44
Physical Abuse – Bullying	0.51
Physical Abuse – Parenting Styles	0.47
Physical Abuse – Social Anxiety	0.49
Sexual Abuse – Bullying	0.39
Sexual Abuse – Parenting Styles	0.35
Sexual Abuse – Social Anxiety	0.43
Bullying – Parenting Styles	0.59
Bullying – Social Anxiety	0.72
Parenting Styles – Social Anxiety	0.54

All HTMT values were below 0.85, providing evidence of adequate discriminant validity among the constructs.

Higher-Order Construct Assessment

Parenting Styles was specified as a formative higher-order construct comprising three lower-order constructs: Authoritative Parenting, Authoritarian Parenting, and Permissive Parenting. The higher-order construct was estimated using the two-stage approach. As presented in Table 5, the VIF values for the three lower-order constructs ranged from 1.37 to 1.51, indicating that collinearity was not a concern. The outer weights of all three dimensions were statistically significant, suggesting that each parenting-style dimension contributed to the formation of the higher-order Parenting Styles construct.

Table 5. Assessment of the Formative Higher-Order Parenting Styles Construct

Lower-Order Construct	Outer Weight	t-value	p-value	VIF
Authoritative Parenting	0.58	5.72	<0.001	1.42



Authoritarian Parenting	0.43	4.31	<0.001	1.51
Permissive Parenting	0.31	3.12	0.002	1.37

Structural Model Assessment

After the measurement model had demonstrated acceptable reliability and validity, the structural model was assessed using bootstrapping. The structural model consisted of four exogenous constructs—Emotional Abuse, Physical Abuse, Sexual Abuse, and Bullying—one higher-order mediator, Parenting Styles, and one endogenous construct, Social Anxiety.

The results of the hypothesized direct relationships are presented in Table 6.

Table 6. Direct Effects in the Structural Model

Hypothesis	Path	β	SE	t-value	p-value	Decision
H1	Emotional Abuse $\rightarrow$ Social Anxiety	0.240	0.070	3.43	<0.001	Supported
H2	Physical Abuse $\rightarrow$ Social Anxiety	0.120	0.060	2.00	0.046	Supported
H3	Sexual Abuse $\rightarrow$ Social Anxiety	0.070	0.060	1.17	0.243	Not supported
H4	Bullying $\rightarrow$ Social Anxiety	0.390	0.070	5.57	<0.001	Supported
H5	Emotional Abuse $\rightarrow$ Parenting Styles	0.210	0.080	2.63	0.009	Supported
H6	Physical Abuse $\rightarrow$ Parenting Styles	0.140	0.070	2.00	0.046	Supported
H7	Sexual Abuse $\rightarrow$ Parenting Styles	0.080	0.070	1.14	0.255	Not supported
H8	Bullying $\rightarrow$ Parenting Styles	0.260	0.080	3.25	0.001	Supported
H9	Parenting Styles $\rightarrow$ Social Anxiety	0.220	0.090	2.44	0.015	Supported

Emotional Abuse was positively associated with Social Anxiety ($\beta = 0.240$, $p < 0.001$). Physical Abuse also demonstrated a significant positive association with Social Anxiety ($\beta = 0.120$, $p = 0.046$). Similarly, Bullying demonstrated a significant positive association with Social Anxiety and represented the strongest direct predictor in the model ($\beta = 0.390$, $p < 0.001$). In contrast, Sexual Abuse was not significantly associated with Social Anxiety ($\beta = 0.070$, $p = 0.243$).

With regard to the mediator, Emotional Abuse ($\beta = 0.210$, $p = 0.009$), Physical Abuse ($\beta = 0.140$, $p = 0.046$), and Bullying ($\beta = 0.260$, $p = 0.001$) were significantly associated with Parenting



Styles. Sexual Abuse did not demonstrate a significant association with Parenting Styles ($\beta = 0.080$, $p = 0.255$). Parenting Styles was significantly associated with Social Anxiety ($\beta = 0.220$, $p = 0.015$).

Coefficient of Determination and Predictive Relevance

The coefficient of determination (R^2) was used to evaluate the explanatory power of the structural model. The four predictors explained 29.0% of the variance in Parenting Styles, while the complete structural model explained 48.0% of the variance in Social Anxiety.

Table 7. Coefficient of Determination and Predictive Relevance

Endogenous Construct	R^2	Q^2	Interpretation
Parenting Styles	0.290	0.170	Moderate explanatory power; predictive relevance
Social Anxiety	0.480	0.260	Moderate explanatory power; predictive relevance

The Q^2 values for both endogenous constructs were greater than zero, indicating that the model demonstrated predictive relevance.

Effect Size

The effect size (f^2) was examined to determine the contribution of individual predictor constructs to the endogenous constructs. The results are shown in Table 8.

Table 8. Effect Sizes of the Structural Relationships

Relationship	f^2	Interpretation
Emotional Abuse → Parenting Styles	0.052	Small
Physical Abuse → Parenting Styles	0.029	Small
Sexual Abuse → Parenting Styles	0.008	Negligible
Bullying → Parenting Styles	0.081	Small
Parenting Styles → Social Anxiety	0.061	Small
Emotional Abuse → Social Anxiety	0.086	Small
Physical Abuse → Social Anxiety	0.021	Small
Sexual Abuse → Social Anxiety	0.009	Negligible
Bullying → Social Anxiety	0.176	Moderate

Bullying demonstrated the largest effect size on Social Anxiety ($f^2 = 0.176$), whereas the effect sizes of the other predictors were predominantly small.

Mediation Analysis

The mediating role of Parenting Styles was examined using bootstrapped indirect effects. An indirect effect was considered statistically significant when the 95% bootstrap confidence interval did not include zero.

Table 9. Indirect Effects of Parenting Styles on the Relationships between Adversity Experiences and Social Anxiety

Hypothesis	Indirect Path	β	Bootstrapped 95% CI	p-value	Mediation Decision
H10	Emotional Abuse → Parenting Styles → Social Anxiety	0.046	0.012–0.096	0.018	Significant
H11	Physical Abuse → Parenting Styles → Social Anxiety	0.031	0.002–0.073	0.041	Significant
H12	Sexual Abuse → Parenting Styles → Social Anxiety	0.018	–0.013–0.058	0.227	Not significant
H13	Bullying → Parenting Styles → Social Anxiety	0.057	0.021–0.108	0.004	Significant

The mediation analysis indicated that Parenting Styles significantly mediated the relationships between Emotional Abuse and Social Anxiety ($\beta = 0.046$, 95% CI [0.012, 0.096], $p = 0.018$), Physical Abuse and Social Anxiety ($\beta = 0.031$, 95% CI [0.002, 0.073], $p = 0.041$), and Bullying and Social Anxiety ($\beta = 0.057$, 95% CI [0.021, 0.108], $p = 0.004$). Because the confidence intervals for these indirect effects did not include zero, the mediation effects were statistically supported. In contrast, the indirect effect of Sexual Abuse on Social Anxiety through Parenting Styles was not significant ($\beta = 0.018$, 95% CI [–0.013, 0.058], $p = 0.227$).

Because both the direct and indirect effects were statistically significant for Emotional Abuse, Physical Abuse, and Bullying, the findings indicated complementary mediation for these three relationships. No evidence of mediation was found for Sexual Abuse.



Summary of Hypothesis Testing

Overall, nine direct-effect hypotheses and four mediation hypotheses were evaluated. The results indicated that Emotional Abuse, Physical Abuse, and Bullying were significantly associated with Social Anxiety, whereas Sexual Abuse was not. Emotional Abuse, Physical Abuse, and Bullying were also significantly associated with Parenting Styles, while Sexual Abuse was not. Parenting Styles was significantly associated with Social Anxiety. Regarding mediation, Parenting Styles significantly mediated the relationships between Emotional Abuse, Physical Abuse, and Bullying and Social Anxiety. However, Parenting Styles did not significantly mediate the relationship between Sexual Abuse and Social Anxiety.

DISCUSSION

The present study examined the associations of emotional abuse, physical abuse, sexual abuse, and bullying with social anxiety among adolescents and further investigated whether parenting styles functioned as an intermediary mechanism in these relationships. By modelling parenting styles as a formative higher-order construct comprising authoritative, authoritarian, and permissive parenting, the study sought to preserve the multidimensional nature of parenting while examining its role as a single mediator. The findings indicate that the effects of adolescent adversity were not uniform across types of experiences. Emotional abuse, physical abuse, and bullying were significantly associated with social anxiety, whereas sexual abuse was not (Dhamayanti et al., 2020; Jin et al., 2024). Emotional abuse, physical abuse, and bullying were also significantly associated with the higher-order Parenting Styles construct, while sexual abuse was not. Parenting Styles was significantly associated with social anxiety. Furthermore, parenting styles significantly mediated the associations of emotional abuse, physical abuse, and bullying with social anxiety, but not the association between sexual abuse and social anxiety (Setyaningrum, Darmawan, et al., 2026; Setyaningrum & Suud, 2025). These findings highlight the importance of considering both the type of adversity experienced and the family context in understanding adolescent social anxiety.

Emotional Abuse and Social Anxiety

The finding that emotional abuse was positively associated with social anxiety supports **H1**. Emotional abuse demonstrated a significant positive relationship with social anxiety ($\beta = 0.240$, $p < 0.001$), although the effect size was small ($f^2 = 0.086$). This finding suggests that



adolescents reporting greater exposure to emotionally abusive experiences also tended to report greater fear or anxiety in social and performance situations. The finding is consistent with broader evidence that emotional maltreatment is particularly relevant to adolescent internalizing problems. A recent systematic review and meta-analysis found a significant positive association between childhood emotional maltreatment and psychopathology during adolescence, with pooled associations ranging from small to moderate across outcomes (Hoffmann & Heim, 2024; Wang et al., 2024). Emotional abuse may be particularly relevant to social anxiety because it can involve repeated experiences of criticism, humiliation, rejection, invalidation, or devaluation (Ciren & Ong, 2026; Li et al., 2024). Such experiences may influence how adolescents perceive themselves and how they anticipate being evaluated by others.

One possible mechanism is the development of negative self-representations and expectations of interpersonal rejection. Adolescents who repeatedly experience demeaning or rejecting interactions may become increasingly sensitive to negative evaluation and may anticipate criticism even in situations where it is not objectively present (Reyome, 2010; Yu et al., 2020). Evidence from adolescent research indicates that emotional abuse is associated with maladaptive schemas involving emotional deprivation, subjugation, mistrust, and social disconnection, providing a possible psychological pathway between adverse experiences and later interpersonal difficulties.

The present finding is therefore theoretically meaningful because the content of emotional abuse overlaps with the interpersonal concerns characteristic of social anxiety (Ciren & Ong, 2026; Kwok et al., 2022). Nevertheless, the cross-sectional design does not establish that emotional abuse causes social anxiety. The observed relationship should instead be interpreted as evidence of a significant association that is consistent with developmental models in which adverse interpersonal experiences may contribute to heightened sensitivity to social threat.

Physical Abuse and Social Anxiety

Physical abuse was also positively associated with social anxiety, supporting **H2**. The relationship was statistically significant ($\beta = 0.120$, $p = 0.046$), although the effect size was small ($f^2 = 0.021$). This finding suggests that experiences of physical aggression during childhood may be associated with greater social anxiety during adolescence. One possible explanation is that repeated exposure to threatening or unpredictable interpersonal interactions may contribute to heightened sensitivity to interpersonal threat (Jin et al., 2024; Korgaonkar et al., 2026).



Adolescents who experience violence within an important caregiving relationship may have greater difficulty developing expectations that interpersonal interactions are safe, predictable, and supportive.

This interpretation is consistent with meta-analytic evidence indicating that childhood physical and emotional maltreatment are associated with internalizing and other behavioural problems. Both physical and emotional abuse were associated with internalizing problems among children, although the magnitude of these associations varied across studies (Alnassar et al., 2024; Li et al., 2024). More broadly, a recent meta-analysis of prospective longitudinal cohort studies reported that childhood trauma, including physical and emotional abuse, was associated with later anxiety disorders.

However, the relatively small effect size observed in the present study indicates that physical abuse alone is unlikely to provide a comprehensive explanation of social anxiety. Other processes, such as attachment insecurity, emotional regulation difficulties, negative self-beliefs, and peer experiences, may contribute to the development or maintenance of social anxiety (Chang et al., 2025; Kuo et al., 2011). Thus, the result supports the relevance of physical abuse but also suggests that its influence should be considered within a broader developmental context.

Sexual Abuse and Social Anxiety

In contrast, sexual abuse was not significantly associated with social anxiety, resulting in the rejection of **H3**. Although the path coefficient was positive, the association was not statistically significant ($\beta = 0.070$, $p = 0.243$), and the effect size was negligible ($f^2 = 0.009$). This finding should be interpreted carefully. The absence of a statistically significant association in this sample does not indicate that sexual abuse has no psychological consequences. Rather, it suggests that sexual abuse did not explain significant additional variance in social anxiety after the other predictors in the model were considered.

This interpretation is important because research has demonstrated considerable heterogeneity in social anxiety among individuals with childhood sexual abuse experiences (Setyaningrum, Madjid, et al., 2026). A large study of youths with histories of childhood sexual abuse identified several distinct social-anxiety profiles rather than a single homogeneous pattern, suggesting that the psychological consequences of sexual abuse may differ substantially between individuals.



The nonsignificant result may therefore reflect differences in individual vulnerability, coping mechanisms, social support, trauma-related symptoms, or other psychological pathways that were not included in the present model. In addition, sexual abuse had the lowest mean among the three abuse dimensions in the current sample ($M = 6.71$, $SD = 3.18$), compared with emotional abuse ($M = 9.82$) and physical abuse ($M = 7.84$). Restricted variability may have reduced the ability to detect a statistically significant relationship. Thus, the present finding is better understood as evidence that sexual abuse operated differently from emotional abuse and physical abuse within this particular model and sample, rather than evidence that sexual abuse is unrelated to adolescent mental health.

Bullying as a Predictor of Social Anxiety

Bullying demonstrated the strongest direct association with social anxiety, supporting H4. The path coefficient was $\beta = 0.390$ ($p < 0.001$), and the effect size was moderate ($f^2 = 0.176$), making bullying the strongest individual predictor of social anxiety in the model. This result is particularly relevant during adolescence because bullying occurs within the peer environment, where social acceptance and evaluation are developmentally salient. Experiences of ridicule, exclusion, humiliation, or repeated victimization may directly reinforce fears concerning how one is perceived by others (Chu et al., 2019; Ferraz de Camargo et al., 2022). Consequently, bullying may have a particularly proximal relationship with social anxiety compared with childhood experiences that occurred earlier in development.

The present result is consistent with a recent three-level meta-analysis involving 133 cross-sectional studies, which found a moderate association between bullying victimization and social anxiety ($r = 0.268$). (PubMed) The same meta-analysis, however, found an important difference in longitudinal evidence: social anxiety predicted subsequent bullying victimization, whereas bullying victimization did not significantly predict subsequent social anxiety. (PubMed)

This finding provides an important qualification for interpreting the present result. Because the current study is cross-sectional, the strong association between bullying and social anxiety cannot be interpreted as evidence of a one-directional causal pathway. A reciprocal process may be plausible: bullying may increase adolescents' concerns about negative evaluation, while adolescents with elevated social anxiety may also be more vulnerable to victimization (Deighton & Murphy, 2024; Putra & Dendup, 2022). The strong direct association



observed in the present study therefore highlights bullying as an important correlate and intervention target, while longitudinal research is required to establish temporal ordering.

Emotional Abuse, Physical Abuse, Bullying, and Parenting Styles

The second important finding concerns the relationships between adverse experiences and Parenting Styles. Emotional abuse was significantly associated with Parenting Styles ($\beta = 0.210$, $p = 0.009$), supporting H5, while physical abuse was also significantly associated with Parenting Styles ($\beta = 0.140$, $p = 0.046$), supporting H6.

These findings suggest that experiences of adversity within the family environment are associated with adolescents' perceptions of the broader parenting profile. This interpretation is supported by evidence that childhood maltreatment and parenting behaviour are interconnected. A systematic review of intergenerational effects found that histories of childhood maltreatment were associated with problematic parenting, lower positive parenting, and difficulties in parent-child interactions (Setyaningrum, Darmawan, et al., 2026).

However, an important methodological distinction must be maintained when interpreting the present result. In this study, Parenting Styles was specified as a formative higher-order construct, rather than a unidimensional measure of positive or negative parenting. The three dimensions authoritative, authoritarian, and permissive each significantly contributed to the formation of the HOC. Authoritative parenting had the largest outer weight (0.58), followed by authoritarian parenting (0.43) and permissive parenting (0.31).

Therefore, the positive path from emotional or physical abuse to Parenting Styles should not be interpreted as meaning that abuse produces "better parenting" or "worse parenting." Instead, it indicates that higher levels of these adverse experiences were associated with variation in the multidimensional parenting profile represented by the three PAQ dimensions. This distinction is particularly important because authoritative, authoritarian, and permissive parenting represent qualitatively different patterns of parental authority.

Bullying was also significantly associated with Parenting Styles ($\beta = 0.260$, $p = 0.001$), supporting H8. One explanation is that adolescents' experiences in peer relationships may be connected to their perceptions of parental support, control, communication, and responsiveness. Family processes and peer experiences are not independent developmental contexts. A recent systematic review and meta-analysis involving more than 162,000 children and adolescents found that positive parenting was negatively associated with bullying victimization, whereas



harsh, negative, and psychologically controlling parenting were positively associated with bullying-related outcomes. (PubMed)

The present study extends this literature by considering Parenting Styles not simply as a predictor of bullying, but as a possible intermediary construct linking bullying experiences to social anxiety (Setyaningrum, Darmawan, et al., 2026). Nevertheless, because the present data are cross-sectional, the direction of this relationship cannot be established. It is also possible that adolescents' experiences of bullying influence their perceptions of parental behaviour, rather than parenting characteristics preceding bullying experiences.

Sexual Abuse and Parenting Styles

Sexual abuse was not significantly associated with Parenting Styles ($\beta = 0.080$, $p = 0.255$), leading to the rejection of H7. This result is consistent with the broader pattern observed in the study: sexual abuse was the only adversity variable that was not significantly associated with either Social Anxiety or Parenting Styles.

One possible interpretation is that the relationship between sexual abuse and adolescent psychological functioning may involve pathways that are not adequately represented by a general parenting-style construct. Sexual abuse can be accompanied by complex processes involving shame, secrecy, trauma-related responses, interpersonal distrust, and difficulties in disclosure. These processes may influence psychological outcomes independently of the adolescent's general perception of parental authority.

The result also reinforces the importance of examining different forms of childhood adversity separately. Treating all forms of childhood trauma as a single construct could conceal meaningful differences in their associations with family processes and psychological outcomes. The present findings demonstrate that emotional abuse, physical abuse, and sexual abuse did not produce identical structural patterns.

Parenting Styles and Social Anxiety

Parenting Styles was significantly associated with Social Anxiety, supporting H9. The relationship was positive ($\beta = 0.220$, $p = 0.015$), with a small effect size ($f^2 = 0.061$).

The positive association is broadly consistent with previous evidence showing that negative parenting, particularly psychological control and harsh control, is associated with adolescent anxiety. A systematic review of parenting and adolescent internalizing symptoms



found that parental warmth, behavioural control, and autonomy granting were generally associated with fewer internalizing symptoms, whereas psychological and harsh control were positively associated with anxiety and other internalizing problems (Field et al., 2007; Morales et al., 2021).

However, the present finding requires more nuanced interpretation because the Parenting Styles construct combines three distinct parenting dimensions. The significant positive association between the HOC and Social Anxiety should therefore not be interpreted as evidence that authoritative parenting, authoritarian parenting, and permissive parenting each independently increase social anxiety. Instead, the result indicates that the overall multidimensional parenting profile, as operationalized in the present HOC, was significantly related to social anxiety. This is one of the important advantages of retaining the three PAQ dimensions rather than simply summing all 30 items into a single score. At the same time, it highlights a limitation of interpreting the HOC as a general parenting-quality construct.

The result may also be understood in relation to the cultural context. Evidence from Asian adolescents suggests that authoritarian and psychologically controlling parenting are particularly relevant to social anxiety, while the relationship between parenting and social anxiety can vary across cultural settings (Beato & Rosa, 2024; Yang et al., 2020). Thus, the positive association observed in the present Indonesian adolescent sample may reflect the interaction between parenting practices and culturally embedded expectations concerning parental authority, autonomy, and social evaluation.

Mediating Role of Parenting Styles

The mediation analysis provides one of the principal contributions of the study. Parenting Styles significantly mediated the relationship between emotional abuse and Social Anxiety, supporting H10 ($\beta = 0.046$, 95% CI [0.012, 0.096], $p = 0.018$). Parenting Styles also significantly mediated the relationship between physical abuse and Social Anxiety, supporting H11 ($\beta = 0.031$, 95% CI [0.002, 0.073], $p = 0.041$).

The mediation pathway was also significant for bullying, supporting H13 ($\beta = 0.057$, 95% CI [0.021, 0.108], $p = 0.004$). Because the corresponding direct effects were also significant, these three pathways were interpreted as complementary mediation.

These findings suggest that parenting styles may represent one pathway through which adverse experiences are associated with adolescent social anxiety, while also indicating that



parenting is not the sole explanatory mechanism. In other words, emotional abuse, physical abuse, and bullying retained significant direct associations with social anxiety even after Parenting Styles was included in the model.

The indirect effects were relatively small, but their statistical significance is theoretically meaningful. The indirect effect of bullying was the largest ($\beta = 0.057$), followed by emotional abuse ($\beta = 0.046$) and physical abuse ($\beta = 0.031$). This pattern parallels the direct-effect results, in which bullying was the strongest predictor of Social Anxiety.

The mediation pathway involving bullying is particularly noteworthy because bullying represents an immediate peer-context stressor, whereas parenting represents the family context (Dong et al., 2024). The result suggests that the family environment may be relevant to how adolescents respond psychologically to negative peer experiences. Parents may influence adolescents' interpretation and management of stressful social experiences through communication, emotional responses, monitoring, and patterns of control. At the same time, bullying experiences may alter adolescents' perceptions of parental support and family relationships (Field et al., 2007). Therefore, the relationship between peer victimization, parenting, and social anxiety may be dynamic rather than strictly unidirectional.

The significant mediation of emotional and physical abuse may similarly indicate that family adversity is associated with parenting-related processes that are relevant to adolescent social anxiety. Previous evidence suggests that childhood maltreatment can influence later parenting-related processes and parent-child interactions, although much of this literature has examined adult survivors rather than adolescents. The present study therefore provides preliminary evidence that parenting-related processes may also be relevant within the adolescent developmental period.

In contrast, the indirect effect of sexual abuse was not significant, rejecting H12 ($\beta = 0.018$, 95% CI $[-0.013, 0.058]$, $p = 0.227$). The confidence interval included zero, indicating insufficient evidence that Parenting Styles explains the association between sexual abuse and Social Anxiety. This finding is consistent with the nonsignificant direct path from sexual abuse to Social Anxiety and the nonsignificant path from sexual abuse to Parenting Styles.

Taken together, the mediation results indicate that Parenting Styles is a selective rather than universal mediator. Its mediating role was observed for emotional abuse, physical abuse, and bullying, but not sexual abuse. This differentiated pattern is important because it suggests



that the pathways connecting adversity to adolescent social anxiety may depend on the nature and interpersonal context of the adverse experience.

Limitations and Future Research

Several limitations should be considered when interpreting the findings. First, the cross-sectional design prevents conclusions regarding temporal ordering and causality. Although the statistical mediation model is theoretically informative, it cannot demonstrate that abuse or bullying precedes changes in parenting styles, which subsequently produce social anxiety. Longitudinal research is needed to test these developmental pathways.

Second, the study was conducted among Grade 11 students from a single senior high school in Yogyakarta. Therefore, the findings may not be generalizable to adolescents from other regions, educational settings, socioeconomic backgrounds, or cultural contexts.

Third, all major constructs were assessed using self-report measures. This may introduce common-method variance and reporting bias. In particular, parenting styles were based on adolescents' perceptions, which may differ from parents' own reports or observations of actual parenting behaviour.

Fourth, the higher-order Parenting Styles construct combines authoritative, authoritarian, and permissive parenting. Although the formative HOC approach preserves the multidimensional nature of the PAQ, it also means that the positive structural relationship between Parenting Styles and Social Anxiety should not be interpreted as evidence that each parenting style has the same relationship with social anxiety. Future research should therefore test the three parenting dimensions separately and examine whether one particular style—especially authoritarian or psychologically controlling parenting—accounts for a larger proportion of the association.

Finally, the present study operationalized Social Anxiety using the anxiety/fear component of the LSAS rather than the avoidance component. Future studies could incorporate both anxiety/fear and avoidance dimensions or use an adolescent-specific social anxiety measure to provide a more comprehensive assessment of the construct.

CONCLUSION

This study demonstrates that childhood adversity and bullying were differentially associated with adolescent social anxiety. Emotional abuse ($\beta = 0.240$, $p < 0.001$), physical abuse ($\beta = 0.120$, $p = 0.046$), and bullying ($\beta = 0.390$, $p < 0.001$) were positively associated with social



anxiety, with bullying showing the strongest direct association, whereas sexual abuse was not significant ($\beta = 0.070$, $p = 0.243$). Emotional abuse, physical abuse, and bullying were also significantly associated with the multidimensional Parenting Styles construct, while sexual abuse was not. Parenting Styles was significantly associated with social anxiety ($\beta = 0.220$, $p = 0.015$), indicating that the multidimensional parenting context represents an important relational pathway in adolescent social anxiety. Because Parenting Styles was modeled as a formative higher-order construct comprising authoritative, authoritarian, and permissive dimensions, these findings reflect the overall configuration of parenting styles rather than a uniformly harmful or protective effect of any single parenting style.

Parenting Styles significantly mediated the relationships of emotional abuse ($\beta = 0.046$, $p = 0.018$), physical abuse ($\beta = 0.031$, $p = 0.041$), and bullying ($\beta = 0.057$, $p = 0.004$) with social anxiety, with significant direct and indirect effects indicating complementary mediation. In contrast, no significant mediation was found for sexual abuse ($\beta = 0.018$, $p = 0.227$). The model explained 29.0% of the variance in Parenting Styles and 48.0% of the variance in social anxiety, with positive Q^2 values indicating predictive relevance. Overall, the findings indicate that the pathways linking adversity to adolescent social anxiety differ according to the type of adverse experience, while bullying and selected forms of childhood abuse are associated with social anxiety both directly and, for emotional abuse, physical abuse, and bullying, through the multidimensional parenting context.

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