

Childhood emotional maltreatment and internalizing problems in a non-clinical sample of adolescents: a moderated-mediation model of insecure anxious attachment style and gender

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ABSTRACT

Childhood emotional maltreatment (abuse and neglect) may contribute to the development of internalizing problems in adolescence. However, the mechanisms explaining this association should be examined further. This study explored the mediating role of insecure anxious attachment style in the relationship between emotional maltreatment and internalizing symptoms in a non-clinical sample of adolescents. Analyses were also conducted to determine whether gender moderated the direct and indirect pathways between emotional maltreatment and internalizing problems. We recruited 449 adolescents aged between 14 and 18 years old [$M_{age}=16.46$, standard deviation (SD)=1.38]. 60.8% of adolescents were female ($M_{age}=16.51$, SD=1.43), whereas 39.2% identified as male ($M_{age}=16.39$, SD=1.28). Participants completed a survey including socio-demographic information and three self-report questionnaires: the Childhood Trauma Questionnaire-Short Form, the Attachment Style Questionnaire, and the Youth Self-Report for ages 11-18. Results showed that emotional abuse and neglect were related to internalizing problems both directly and indirectly through anxious attachment style. Girls who experienced higher levels of emotional abuse and who had an anxious attachment style reported more internalizing problems than boys, whereas higher levels of emotional neglect were associated with increasing levels of internalizing problems only for boys. This study expanded our knowledge of the role of anxious attachment in the onset of internalizing problems among adolescents with experiences of childhood emotional maltreatment.

Key words: emotional maltreatment, anxious attachment, internalizing problems, adolescents, gender.

Introduction

Childhood maltreatment, such as physical, sexual, and emotional abuse as well as physical and emotional neglect, refers to a series of acts of commission and/or omission by a parent or other caregiver that may result in harm to the child (Marchetti *et al.*, 2022). Among these early traumatic experiences, research has highlighted that emotional maltreatment, including emotional abuse and neglect, tends to be the most frequently reported form of maltreatment (Yang *et al.*, 2023). Specifically, emotional abuse refers to behaviors characterized by verbal aggression, humiliation and constant criticism, threats, isolation, and rejection, whereas emotional neglect refers to the failures of caregivers to respond

to the child's basic psychological needs as well as to express positive feelings toward the child (Cohen & Thakur, 2021). Emerging evidence has pointed out that emotional maltreatment may have the most harmful effects on youth mental health compared to other forms of maltreatment, contributing to the development of psychopathological symptoms in adolescence (Cohen & Thakur, 2021; Duprey *et al.*, 2021; Yang *et al.*, 2023). Indeed, adolescence is a developmental stage characterized by significant biological, psychological, and social transformations and transitions, representing a key period in terms of vulnerability to psychopathology under specific conditions (Marchetti *et al.*, 2022; Oshri *et al.*, 2013). It is thus important to further understand the impact of previous emotional maltreatment experiences on adolescents' psychological well-being, while also considering the potential mechanisms underlying this association.

Emotional maltreatment and internalizing problems: the role of insecure attachment

Emotional abuse and neglect have consistently been found to be strong and independent risk factors for the onset of internalizing problems, such as depression (Cecil *et al.*, 2017; Li *et al.*, 2022), anxiety (González-Díez *et al.*, 2017; Hamilton *et al.*, 2013), and psychosomatic symptoms (Hagborg *et al.*, 2017) in adolescence. A developmental psychopathology framework may help explain this association (Cicchetti & Toth, 2016). Indeed, childhood emotional maltreatment has the potential to disrupt normative developmental processes, hindering the realization of developmental tasks related to the construction of a positive and realistic sense of self-worth (Zhang *et al.*, 2024). Thus, adolescents undergoing emotional abuse and/or neglect are at greater risk of experiencing feelings of worthlessness due to the specific behaviors that characterize this kind of maltreatment (*i.e.*, humiliation, rejection, and isolation). This, in turn, increases the likelihood of subsequent internalizing problems (Duprey *et al.*, 2021).

Feelings of worthlessness and lack of self-worth that may stem from childhood emotional maltreatment experiences are typical features of an insecure attachment style, which has been theorized as an underlying mechanism that might explain the link between childhood emotional maltreatment and internalizing problems in adolescence and adulthood (Schimmenti & Bifulco, 2015; Struck *et al.*, 2020).

Attachment is a psychobiological system that drives individuals to engage in interactions aimed at seeking and maintaining safety, comfort, and closeness to significant others in times of need and threat (Bowlby, 1969). Particularly in childhood, when these interactions are characterized by caregivers' emotionally abusive and neglecting behaviors, they may favor the formation of negative internal working models of self and others in close relationships, and thus insecure attachment schemas (Riggs, 2010; Widom *et al.*, 2018).

Insecure attachment styles typically refer to two fundamental dimensions: attachment anxiety and attachment avoidance (Mikulincer & Shaver, 2017). People with high attachment anxiety have acquired a representation of themselves as unworthy, incompetent, and powerless (Widom *et al.*, 2018). These individuals strongly desire intimacy in relationships but constantly worry about rejection and abandonment (Diamond & Fagundes, 2010). In contrast, individuals exhibiting high attachment avoidance are less comfortable with intimacy and unwilling to invest in emotional relationships due to the expectation that others will not be able to offer availability and support (Godbout *et al.*, 2019).

Although previous studies have pointed out that emotional abuse and neglect tend to be related to both insecure attachment patterns, there is evidence for a stronger association with the insecure anxious attachment style (Erkoreka *et al.*, 2022; Gay *et al.*, 2013; Oshri *et al.*, 2013). In turn, research has demonstrated a significant association between insecure anxious attachment and internalizing symptoms in adolescents (Lacasa *et al.*, 2015; Napier *et al.*, 2022). When faced with distressing experiences, individuals with insecure anxious attachment tend to turn to hyperactivating and emotion-focused coping strategies, which consist of strong requests for care and proximity to caregivers (Mikulincer & Shaver, 2017). These excessive needs for love and support may stem from the lack of a positive and stable sense of self, as the individual may not believe they can rely on their own psychological resources in times of distress (Widom *et al.*, 2018). However, although these strategies may be adaptive in the short term, as they ensure the proximity of the attachment figure and the provision of care, they may lead to the intensification of negative feelings over time, potentially contributing to the development of anxiety or depressive symptoms (Lo *et al.*, 2019; Napier *et al.*, 2022).

Previous research found that attachment had a mediating role in the association between emotional maltreatment and internalizing symptoms (*i.e.*, depression, anxiety) in adult samples (Muller *et al.*, 2012; Struck *et al.*, 2020). To the best of our knowledge, only one study from Schimmenti and Bifulco (2015) involved an adolescent sample in the evaluation of the above-mentioned mediating model. Specifically, results from this study indicated that experiences of parental emotional neglect were associated with anxiety disorders *via* insecure anxious attachment patterns. Considering that adolescence is a potential vulnerability period to later psychopathology, particularly under conditions of early traumatic experiences, further research on the relation between emotional maltreatment, insecure anxious attachment, and internalizing symptoms is needed in this specific population. Improving our understanding of specific risk factors for psychopathology in a non-clinical sample of adolescents may be crucial for preventive purposes. Indeed, early detection of adolescents at risk of developing the first signs of psychological distress may be necessary to hinder the chronicity of symptoms over time and the worsening of the overall quality of life.

Gender differences in the association between childhood emotional maltreatment, insecure anxious attachment, and internalizing problems in adolescence

Literature has suggested that gender might also be a factor in the development of internalizing symptoms in adolescence. Indeed, evidence has widely indicated that adolescent girls are more prone to the development of symptoms of anxiety and depression as compared to boys (Ara, 2016). However, it is still unclear whether experiences of emotional abuse and neglect differentially affect the emergence and severity of internalizing symptoms in girls or boys, given that research evaluating the moderation of gender in the link between these symptoms and early emotional maltreatment has provided inconsistent results. Specifically, some studies have reported that adolescent girls exposed to emotional maltreatment showed larger increases in internalizing problems and decreases in mental well-being compared to boys (Hagborg *et al.*, 2017), whereas other studies found no moderation of gender

in the association between childhood emotional maltreatment and internalizing symptoms (Li *et al.*, 2022).

Considering the association between childhood emotional maltreatment and insecure anxious attachment, the literature suggests no gender differences in the ability to adapt following stressful events with regards to the development of internal working models of self and others, and thus of subsequent attachment styles (Ein-Dor *et al.*, 2010). This may suggest that boys and girls who experience emotional abuse and/or neglect are similar with regard to the formation and ongoing development of attachment styles across childhood and adolescence. Conversely, gender differences have been reported in the association between anxious attachment and internalizing problems, as suggested by one prior study indicating that adolescent girls anxiously attached to their parents reported more internalizing symptoms than boys (Kamkar *et al.*, 2012).

Observed gender differences may be due to a combination of both insecure anxious attachment core features and gender-related sociocultural pressures. Individuals with an insecure anxious attachment tend to be excessively dependent on others, worry about interpersonal conflicts, and strongly fear being unworthy of love and thus being abandoned (Godbout *et al.*, 2019; Widom *et al.*, 2018). Both girls and boys with insecure anxious attachment may experience these issues; however, these tend to be expressed differently according to specific gender-related expectations (Ara, 2016). Specifically, girls are socialized to confer more importance than boys on interpersonal relationships in the development and formation of their identity (Keresteš *et al.*, 2019). Consequently, they may be more sensitive to relational conflicts and more prone to rely on their sense of self-worth on the quality of their relationships with significant others. When negative interpersonal events occur, these may strengthen anxiously-attached girls' belief that they are unworthy of love and inherently mean, which can result in the onset of internalizing symptoms of anxiety and/or depression (Kamkar *et al.*, 2012). Given the paucity of research evaluating the moderation of gender in the association between insecure anxious attachment and internalizing problems in adolescence, more studies are needed for a better comprehension of gender differences in this relationship.

Current study

Based on the above, the first aim of the current study was to explore the association between childhood emotional maltreatment (abuse and neglect) and internalizing problems in a non-clinical sample of adolescents, also testing the possible mediating role of insecure anxious attachment style in this relationship. The second aim of this study was to determine whether gender moderated the association between childhood emotional maltreatment and internalizing problems as well as the relation between insecure anxious attachment and internalizing problems.

Following the existing literature, we hypothesized that: i) childhood emotional maltreatment (abuse and neglect) would be associated with insecure anxious attachment style and internalizing problems in adolescents; ii) insecure anxious attachment style would be related to internalizing problems; iii) insecure anxious attachment style would mediate the association between childhood emotional maltreatment (abuse and neglect) and internalizing problems; iv) adolescent girls who experienced higher levels of emotional abuse and neglect and had an insecure anxious attachment style would report more internalizing problems as compared to boys, thus indicating that gender is a significant moderator in these associations within our proposed theoretical model.

Methods

Participants

We recruited 454 adolescents attending secondary schools in southern Italy. 60.1% (n=273) of the adolescents were female [(M_{age})=16.51, standard deviation (SD)=1.43], whereas 38.8% (n=176) identified as male (M_{age} =16.39, SD=1.28). Five adolescents (1.1%) identified as non-binary but were excluded from the final sample, as the number of these individuals was too scarce to be included in further analyses. Thus, the final sample consisted of 449 adolescents ranging in age between 14 and 18 years (M_{age} =16.46, SD=1.38). Socio-demographic information for the total sample and separated by gender are reported in Table 1.

Measures

Childhood Trauma Questionnaire-Short Form

The Italian version of the 28-item Childhood Trauma Questionnaire - Short Form (CTQ-SF) (Bernstein *et al.*, 2003; Sacchi *et al.*, 2018) was used for the retrospective evaluation of childhood experiences of emotional abuse and neglect. This instrument assesses the experiences of five different types of childhood trauma, including emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. For the current study, emotional abuse (5 items; e.g., "people in my family said hurtful or insulting things to me") and emotional neglect (5 items; e.g., "I felt loved" to be reversed) were examined. All items are rated on a 5-point Likert scale, ranging from 1 (never true) to 5 (very often true).

Previous validation studies (Bernstein *et al.*, 2003; Sacchi *et al.*, 2018) demonstrated good structure/concurrent validity, and reliability of both the original and Italian versions of CTQ-SF, supporting its use for the retrospective assessment of childhood traumatic experiences among nonclinical adolescents and young adults. In the current study, the internal consistency reliability estimate was good for both the childhood emotional abuse subscale ($\alpha=.87$) and the childhood emotional neglect subscale ($\alpha=.89$).

Attachment Style Questionnaire

The Italian version (Fossati *et al.*, 2003) of the Attachment Style Questionnaire (Feeney *et al.*, 1994) was used to assess an individual's inner working model of interpersonal relationships and attachment style. It is a 40-item self-report scale containing five subscales that assess two second-order factors, consisting of insecure anxious attachment and insecure avoidant attachment. In the present study, we used the insecure anxious attachment scale (15 items), which consists of the need for approval (7 items) and preoccupation with relationships (8 items) subscales. The mean score was calculated for the insecure anxious attachment scale and used in all analyses. Example items are: "I am often afraid that other people don't like me" and "I worry a lot about my relationships". All items are rated on a 6-point Likert-type response format from 1 (totally disagree) to 6 (totally agree). The validity and reliability of this instrument have been established among various community and psychiatric samples (Mikulincer & Shaver, 2007). In the current study, the internal consistency reliability estimate for the insecure anxious attachment subscale was good ($\alpha=.86$).

Youth Self-Report for ages 11-18

The 112-item Italian version of the widely used Youth Self-Report (YSR) (Achenbach & Rescorla, 2001; Ammaniti *et al.*, 2005) assessed adolescents' behavioral and emotional problems over the last 6 months. The YSR is comprised of eight core syndrome scales: anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. As described by Achenbach and Rescorla (2001), three syndromes, including anxious/depressed (13 items; *e.g.*, "I am nervous or tense"), withdrawn/depressed (8 items; *e.g.*, "I am too shy or timid") and somatic complaints (10 items; *e.g.*, "I feel overtired without good reason") comprise the internalizing scale (31 items), whereas two others (rule-breaking behavior and aggressive behavior) comprise the externalizing scale (32 items). The three remaining syndromes (social problems, thought problems, and attention problems) do not belong to either of these broadband scales. For the current study, we only examined the internalizing problems scale as the outcome variable.

Items were rated as 0 (not true), 1 (somewhat or sometimes true), or 2 (very true or often true). A total internalizing problems score was obtained by summing the related items, with greater scores indicating higher levels of these problems. Raw scores were used for all analyses.

The reliability and validity of YSR are well established (Achenbach & Rescorla, 2001). In the current study, the internal consistency reliability estimate for the internalizing problems subscale was excellent ($\alpha=.92$).

Procedure

The institutional ethical committee approved the study (protocol number 46685). All procedures were performed following

the ethical principles for psychological research, following the Declaration of Helsinki and its revisions (World Medical Association, 2001) as well as the ethics guidelines of the American Psychological Association (APA, 2010).

Participants were students recruited from Italian secondary schools. They were asked to complete the study's measures during class hours through a link developed *via* Google Forms. Before being asked to complete the questionnaire, students were informed of the purpose of the study and assured by the researchers that their responses would be confidential. Their consent was obtained, as well as consent from their parents, who had been previously informed by the school principal of the study's purpose and nature. All study procedures were conducted in accordance with the teachers and the school principal. Participants did not receive any form of compensation for their participation.

Data analysis

Tests of zero-order correlations were examined to determine the relations among the study variables. Further, Hypotheses 1-2 examining direct effects among study variables were evaluated in path-analytic models using Mplus v8.8 (Muthén & Muthén, 1998-2022). Given the potential for multicollinearity among the emotional abuse and neglect subscales of the CTQ-SF, two separate regression models were run. Fit indices are not presented in the current study due to the just-identified (saturated) nature of the models. Using path analysis, we were able to incorporate and test all of the hypotheses within the models concurrently, which allowed us to estimate the direct effects and indirect effects simultaneously (Pearl, 2012). For all analyses related to mediation and moderation, the significance level was set to $p<.05$. To test the third hypothesis, we tested for the significance of indirect (mediated) effects using the percentile bootstrap with 5000 draws to generate empirical

Table 1. Sociodemographic characteristics of participants.

Variables	Final sample (n=449)		Boys (n=176)		Girls (n=273)	
	n	%	n	%	n	%
Father's educational level						
Primary school diploma	25	5.6	17	9.7	8	2.9
Middle school diploma	173	38.5	69	39.2	104	38.1
High school diploma	168	37.4	68	38.6	100	36.6
University degree	64	14.3	18	10.2	46	16.8
Postgraduate degree	19	4.2	4	2.3	15	5.5
Mother's educational level						
Primary school diploma	7	1.6	5	2.8	2	.7
Middle school diploma	135	30.1	62	35.2	73	26.7
High school diploma	213	47.4	83	47.2	130	47.6
University degree	73	16.3	22	12.5	51	18.7
Postgraduate degree	21	4.7	4	2.3	17	6.2
Income						
Low	33	7.3	12	6.8	21	7.7
Medium-low	81	18.0	31	17.6	50	18.3
Medium	235	52.3	99	56.3	136	49.8
Medium-high	76	16.9	26	14.8	50	18.3
High	24	5.3	8	4.5	16	5.9
Parental marital status						
Unmarried, non-cohabitating	24	5.3	6	3.4	18	6.6
Unmarried, cohabitating	10	2.2	6	3.4	4	1.5
Married, non-cohabitating	31	6.9	18	10.2	13	4.8
Married, cohabitating	379	84.4	141	80.1	238	87.2
Only one living parent	5	1.1	5	2.8	0	0

confidence intervals (CIs) for the products of the coefficients composing the mediated paths (MacKinnon & Luecken, 2008). If the 95% CI for the bootstrapped estimate does not contain zero, then the indirect effect is significant at $p < .05$. According to Kenny and Judd (2014), indirect effect size estimates around .01 are considered small, .09 are considered medium, and .25 and higher are considered large. As recommended by MacKinnon and colleagues (Fritz & MacKinnon, 2007; MacKinnon *et al.*, 2012), and based on our own calculations, it was determined that the current sample size of 449 afforded sufficient power to detect direct and indirect effects. Specifically, we utilized the web application “Shiny”, which is a simulation-based power analysis method for regression-based mediation (Qin, 2024), to determine that our sample size was large enough to detect both direct and indirect effects. There was no missing data on any variables included in the models. The moderated mediation statistical analysis was carried out with the IBM Statistical Package for Social Sciences version 27.0 (IBM Corp, 2020). We tested an exploratory moderated mediation approach to the link between childhood emotional maltreatment (X) and internalizing problems (Y). Specifically, it was predicted to be moderated by gender (Z) and mediated by insecure anxious attachment (M) in a sample of adolescents. In order to examine the fourth hypothesis regarding gender moderation, we used Hayes’ (2013) PROCESS macro to test the moderated effect of i) childhood emotional maltreatment (abuse and neglect) on internalizing problems and ii) insecure anxious attachment and internalizing problems. In these two models (model 15) (Hayes, 2013), we tested the interactive effect of childhood emotional abuse/neglect and gender on internalizing problems as well as the interaction of gender and insecure anxious attachment style on internalizing problems, expecting that these associations will vary across genders. We report these conditional direct effects for females and males with 95% CIs.

Results

Mediation analyses: direct and indirect effects

Pearson correlations among the primary study variables are presented in Table 2. All correlations among study variables were significant in the expected directions.

To test the associations among study constructs in the context of the two mediational models, we examined these relations as paths, adjusting for demographic covariates (*i.e.*, age, father’s education, mother’s education, income, parental marital status), which were modeled as exogenous predictors of the study variables. Research has shown that these demographic variables may

negatively affect the quality of parenting and family environment, potentially increasing the risk of childhood maltreatment. For example, low-income families are exposed to stressors that may reduce parents’ competence in satisfying their children’s basic and emotional needs, as well as leading to dysfunctional caregiving practices that may result in different types of maltreatment (Featherstone *et al.*, 2019). This association may also be due to the presence of low levels of parental education, which may exert effects on both family income and the likelihood of childhood maltreatment (Berger & Waldfogel, 2011).

The first hypothesis (*i.e.*, childhood emotional abuse would be associated with insecure anxious attachment style and internalizing problems in adolescents) and the second hypothesis (*i.e.*, insecure anxious attachment style would be related to internalizing problems) relate to predictive relations among variables in their respective models depicted in Figures 1 and 2, with standardized coefficients shown. In model 1 and consistent with the first hypothesis, childhood emotional abuse was positively related to insecure anxious attachment style [$b = 1.07$, 95% CI (.87, 1.32)] and internalizing problems [$b = .73$, 95% CI (.58, .93)]. In line with the second hypothesis, insecure anxious attachment was positively associated with internalizing problems [$b = .42$, 95% CI (.37, .48)].

In the mediational model (Figure 1), the total effect of childhood emotional abuse on internalizing problems was positive and significant, with a point estimate of 1.18, 95% CI [1.01, 1.38],

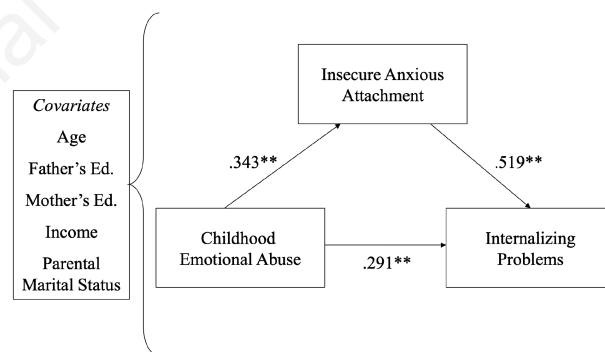


Figure 1. Insecure attachment style as a mediator in the relation between childhood emotional abuse and internalizing problems (n=449). Model with standardized regression coefficients depicting insecure attachment as a mediator in the relation between childhood emotional abuse and internalizing problems. ** $p < .01$. Father’s Ed., father’s educational level; Mother’s Ed., mother’s educational level.

Table 2. Pearson correlation matrix, means, standard deviations, and ranges of study variables.

Variable	1	2	3	4
1. Childhood emotional abuse	--			
2. Childhood emotional neglect	.66**	--		
3. Insecure anxious attachment	.37**	.20**	--	
4. Internalizing problems	.48**	.24**	.66**	--
M	8.96	9.09	57.17	21.49
SD	4.77	4.60	14.82	12.01
Range	5-20	5-19	22-66	0-57

n=449. Tabled values are zero-order correlations. M, mean; SD, standard deviation; ** $p < .01$.

and a standardized estimate of .47. As expected and consistent with the third hypothesis (*i.e.*, insecure anxious attachment style would mediate the association between childhood emotional abuse and internalizing problems), this effect was significantly mediated by insecure anxious attachment style, $ab=.45$, 95% CI [.33, .59]. CI excluded zero, indicating a significant indirect effect of childhood emotional abuse on internalizing problems *via* an insecure anxious attachment style, supporting the mediation hypothesis. Furthermore, the standardized effect size for the indirect effect was .18, 95% CI [.13, .23], indicating that internalizing problems increased by .18 SD for every 1-SD increase in childhood emotional abuse indirectly *via* insecure anxious attachment.

In model 2 and consistent with the first hypothesis (*i.e.*, childhood emotional neglect would be associated with insecure anxious attachment style and internalizing problems in adolescents) and the second hypothesis (*i.e.*, insecure anxious attachment style would be related to internalizing problems) childhood emotional neglect was positively related to insecure anxious attachment style [$b=.68$, 95% CI (.37, 1.01)] and internalizing problems [$b=.43$, 95% CI (.23, .65); see Figure 2 for standardized coefficients]. In line with the second hypothesis, insecure anxious attachment was positively associated with internalizing problems [$b=.48$, 95% CI (.42, .54)]. In the mediational model (Figure 2), the total effect of childhood emotional neglect on internalizing problems was pos-

itive and significant, with a point estimate of .76, 95% CI [.54, 1.00], a standardized estimate of .29.

As expected and consistent with the third hypothesis (*i.e.*, insecure anxious attachment style would mediate the association between childhood emotional neglect and internalizing problems), this effect was significantly mediated by insecure anxious attachment style, $ab=.33$, 95% CI [.17, .50]. CI excluded zero, indicating a significant indirect effect of childhood emotional neglect on internalizing problems *via* insecure anxious attachment style, supporting the mediation hypothesis. Moreover, the standardized effect size for the indirect effect was .13, 95% CI [.07, .18], indicating that internalizing problems increased by .13 SD for every 1-SD increase in childhood emotional neglect indirectly *via* insecure anxious attachment.

Moderated mediation analyses

To examine the fourth hypothesis (*i.e.*, girls who experienced higher levels of emotional abuse and neglect as well as have an insecure anxious attachment style would report more internalizing problems as compared to boys), we first examined study correlations for both adolescent girls and boys independently (Table 3). All correlations were significant in the expected direction for girls. For boys, all correlations were significant except for the association between childhood emotional neglect and insecure anxious attachment. It is important to note that adolescent girls ($M=9.62$, $SD=5.18$) reported significantly higher levels of emotional abuse than adolescent boys ($M=7.93$, $SD=3.87$; $t(447)=3.7$, $p<.001$). Similarly, girls ($M=60.52$, $SD=14.30$) reported more insecure anxious attachment than boys ($M=51.95$, $SD=14.31$; $t(447)=6.23$, $p<.001$), as well as more internalizing problems ($M=24.46$, $SD=12.54$) than boys ($M=16.89$, $SD=9.48$; $t(447)=7.57$, $p<.001$). There was not a significant difference found in childhood emotional neglect between adolescent girls and boys.

To further explore these relations, we conducted moderated mediation analysis in two separate models with childhood emotional abuse and neglect as predictor variables. Specifically, moderated mediation analyses, using Hayes' PROCESS model 15, were conducted.

Moderated mediation analyses of emotional abuse

In the first moderated mediation model, the first step tested whether gender (Z) serves as a moderator on the relation between emotional abuse (X) and internalizing problems (Y). As anticipated, the fourth hypothesis was confirmed, as can be seen in Table 4. Notably, PROCESS computes conditional effects at different values of the moderator. The conditional effects for girls

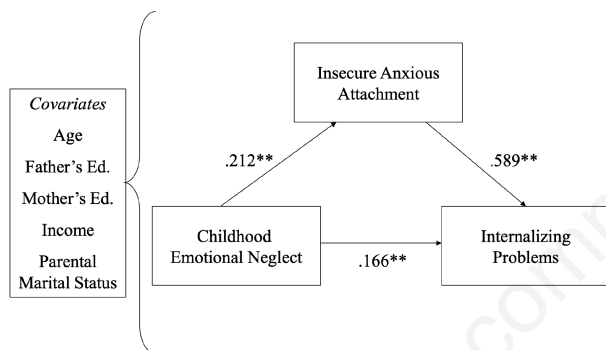


Figure 2. Insecure attachment style as a mediator in the relation between childhood emotional neglect and internalizing problems ($n=449$). Model with standardized regression coefficients depicting insecure attachment as a mediator in the relation between childhood emotional neglect and interpersonal problems. $**p<.01$. Father's Ed., father's educational level; Mother's Ed., mother's educational level.

Table 3. Pearson correlation matrix, means, standard deviations, and ranges of study variables across genders.

Variable	1	2	3	4	M	SD	Range
1. Childhood emotional abuse	--	.70**	.41**	.46**	9.62	(5.18)	5-25
2. Childhood emotional neglect	.61**	--	.26**	.20**	9.14	(4.73)	5-22
3. Insecure anxious attachment	.21**	.11	--	.69**	60.52	(14.31)	29-88
4. Internalizing problems	.44**	.34**	.50**	--	24.46	(12.54)	1-57
M	7.93	9.02	51.95	16.89			
SD	(3.86)	(4.42)	(14.11)	(9.48)			
Range	5-21	5-24	22-81	0-40			

Zero-order correlations for girls ($n=273$) are bolded and presented above the diagonal; zero-order correlations for boys ($n=176$) are presented below the diagonal. M, mean; SD, standard deviation; $**p<.01$.

[$B=.56$, $SE=.11$, 95% CI (.40, .77), $p<.001$] and boys [$B=1.01$, $SE=.16$, 95% CI (.69, 1.40), $p<.001$] were statistically significant, suggesting that higher levels of emotional abuse predicted higher scores on internalizing problems for both genders; however, the effects of childhood emotional abuse on internalizing problems were greater for girls than boys (Figure 3).

The second step of moderated mediation was to test if gender moderated the mediated effect of insecure anxious attachment on internalizing problems. Consistent with the fourth hypothesis, the interaction between gender and insecure anxious attachment was significant in predicting internalizing problems (Table 4). The conditional effects for girls [$B=.52$, $SE=.04$, 95% CI (.44, .59), $p<.001$] and boys [$B=.31$, $SE=.05$, 95% CI (.21, .39), $p<.001$] were statistically significant, suggesting that higher levels of insecure anxious attachment are associated with increased internalizing problems for both genders; however, the effect is greater for adolescent girls as compared to boys (Figure 4). Moreover, the PROCESS analysis confirmed an indirect effect of childhood emotional abuse on internalizing problems *via* insecure anxious attachment for adolescent girls [$ab=.61$, 95% CI (.45, .79)] and boys [$ab=.36$, 95% CI (.23, .50)] with 5000 bootstrapped samples [index of moderated mediation of gender = .248, 95% CI (.10, .42)].

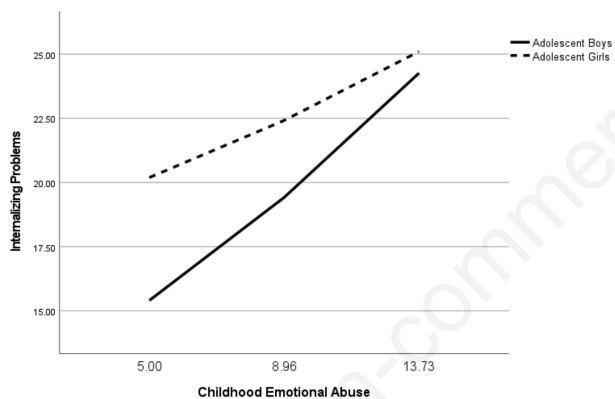


Figure 3. Interaction effects between gender and childhood emotional abuse on internalizing problems. Age, father's education, mother's education, family income, and parental marital status were included in the model as covariates.

Moderated mediation analyses of emotional neglect

Similar to the previous model, in this model, we first tested whether gender (Z) serves as a moderator of the relation between emotional neglect (X) and internalizing problems (Y). There was a significant interaction effect between gender and childhood emotional neglect on internalizing problems, as can be seen in Table 5. Contrary to expectation, the conditional effects for girls were not significant [$B=.18$, $SE=.12$, 95% CI (-.04, .41), $p=.11$]; however, the conditional effect of emotional neglect for boys was found to be significant [$B=.77$, $SE=.15$, 95% CI (.48, 1.07), $p<.001$], indicating that for boys, higher levels of childhood emotional neglect predicted an increased level of internalizing problems, but for girls, there was no association found between the variables (Figure 5).

We subsequently tested if gender moderated the mediated effect of insecure anxious attachment on internalizing problems. As in the first moderated mediation model and consistent with the fourth hypothesis, the interaction between gender and insecure anxious attachment was significant in predicting internalizing problems (Table 5). The conditional effects for girls

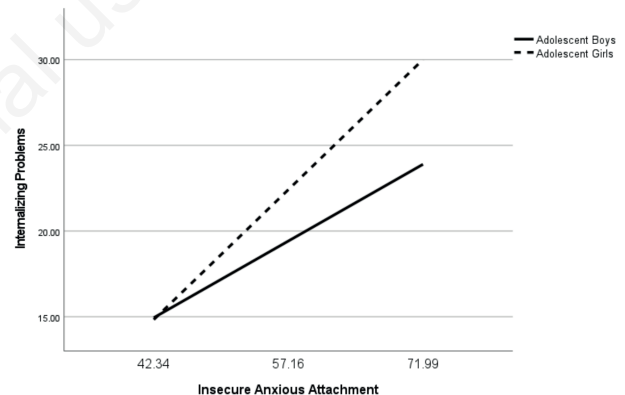


Figure 4. Interaction effects between gender and insecure anxious attachment on internalizing problems (childhood emotional abuse model). Age, father's education, mother's education, family income, and parental marital status were included in the model as covariates.

Table 4. Results of the model regressing internalizing problems (Y) on childhood emotional abuse (X) and insecure anxious attachment (M), gender (Z), and their interactions ($X*Z$; $M*Z$).

Model	DV: internalizing problems		
	B	SE	t
Constant	11.82	5.52	2.14
Childhood emotional abuse	1.47	.34	4.25***
Insecure anxious attachment	.09	.10	.95
Gender	3.01	.84	3.56***
Gender*childhood emotional abuse	-.45	.19	-2.33*
Gender*insecure anxious attachment	.21	.06	3.57***

DV, dependent variable. All analyses were adjusted for age, father's education, mother's education, family income, and parental marital status as baseline confounders. All the continuous variables were centered at their means. Gender: male=1, female=2. * $p<.05$; *** $p<.001$.

[$B=.58$, $SE=.04$, 95% CI (.51, .67), $p<.001$] and boys [$B=.33$, $SE=.05$, 95% CI (.24, .42), $p<.001$] were statistically significant, suggesting that higher levels of insecure anxious attachment are associated with increased internalizing problems for both genders (Figure 6). Further, we confirmed an indirect effect of childhood emotional neglect on internalizing problems *via* insecure anxious attachment for adolescent girls [$ab=.41$, 95% CI (.22, .62)] and boys [$ab=.23$, 95% CI (.12, .37)] with 5000 bootstrapped samples [index of moderated mediation of gender = .174, 95% CI (.07, .32)].

Discussion

The current study explored the relation between experiences of childhood emotional maltreatment (abuse and neglect) and internalizing symptoms (*i.e.*, depression, anxiety, somatic complaints) in adolescence, testing the mediating effects of insecure anxious attachment patterns. We also evaluated whether gender moderated the direct and indirect relationship between emotional maltreatment and internalizing problems.

Consistent with our first hypothesis, both childhood emotional abuse and neglect were significantly and positively related

to internalizing problems in adolescents. These results corroborate data from previous studies (Cecil *et al.*, 2017; González-Díez *et al.*, 2017; Li *et al.*, 2022), suggesting that adolescents who were exposed to early experiences of emotional maltreatment may be at greater risk of developing symptoms of depression, anxiety, and somatic complaints. Additionally, our findings also support the hypothesis of a positive and significant relationship between both forms of childhood emotional maltreatment and insecure anxious attachment style. In line with attachment theory (Bowlby, 1969) and with findings from previous research (Erkoreka *et al.*, 2022; Gay *et al.*, 2013; Oshri *et al.*, 2013), this result suggests that being exposed to emotionally abusive and neglecting family environments, such as those characterized by coldness, hostility, rejection, and invalidation of the child's affective needs, may contribute to the development of an inadequate sense of security and self-worth. Starting from these abusive or neglecting parental behaviors, the child may acquire a negative and distorted representation of self as unlovable, unworthy, and unwanted, which underlies the formation of an insecure anxious attachment style (Riggs, 2010; Widom *et al.*, 2018).

As expected in the second hypothesis and in accordance with the existing literature (Lacasa *et al.*, 2015; Napier *et al.*, 2022), we found that insecure anxious attachment style was pos-

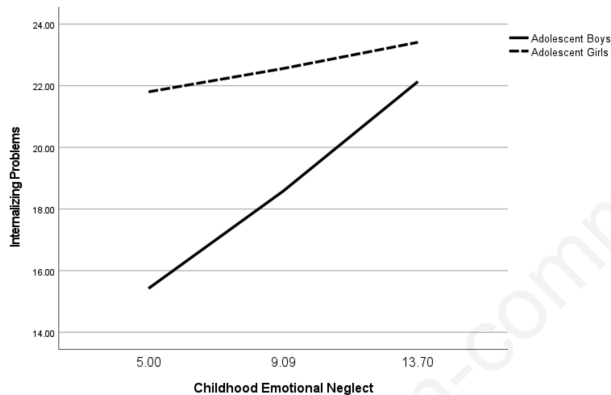


Figure 5. Interaction effects between gender and childhood emotional neglect on internalizing problems. Age, father's education, mother's education, family income, and parental marital status were included in the model as covariates.

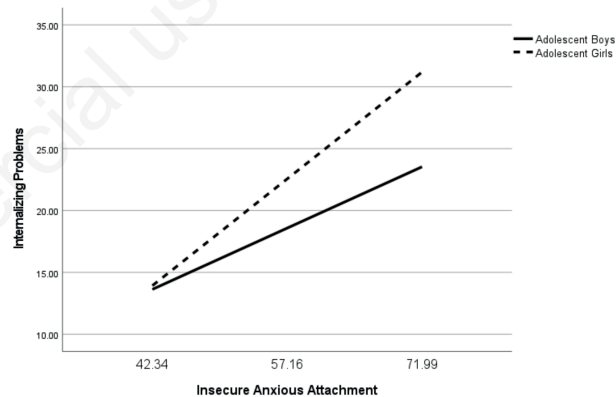


Figure 6. Interaction effects between gender and insecure anxious attachment on internalizing problems (childhood emotional neglect model). Age, father's education, mother's education, family income, and parental marital status were included in the model as covariates.

Table 5. Results of the model regressing internalizing problems (Y) on childhood emotional neglect (X) and insecure anxious attachment (M), gender (Z), and their interactions (X*Z; M*Z).

Model	DV: internalizing problems		
	B	SE	t
Constant	9.37	5.77	1.63
Childhood emotional neglect	1.36	.32	4.31***
Insecure anxious attachment	.09	.10	.87
Gender	3.97	.86	4.60***
Gender*childhood emotional neglect	-.59	.18	-3.18*
Gender*insecure anxious attachment	.25	.06	4.19***

DV, dependent variable. All analyses were adjusted for age, father's education, mother's education, family income, and parental marital status as baseline confounders. All the continuous variables were centered at their means. Gender: male=1, female=2; * $p<.05$; *** $p<.001$.

itively and significantly related to internalizing problems. Although the cross-sectional nature of our study does not permit causal inferences, it may be possible that adolescents with insecure anxious attachment perceive distressing situations as more difficult to deal with due to a lack of self-efficacy and self-worth (Widom *et al.*, 2018). Consequently, they may employ maladaptive and ineffective coping strategies, which may enhance the risk of developing internalizing problems, such as depressive or anxiety symptoms (Riggs, 2010). Furthermore, it may be possible that these internalizing symptoms represent an attachment behavior whose function is to ensure care and attention from significant others, preventing potential abandonment and separation (Lacasa *et al.*, 2015).

Regarding possible mediating effects, consistent with our third hypothesis, we found that insecure anxious attachment style mediated the association between both forms of childhood emotional maltreatment (abuse and neglect) and internalizing problems. Thus, it is possible that an insecure anxious attachment style increases the risk of developing internalizing problems among adolescents who have been exposed to early experiences of emotional abuse and neglect. This is in line with the study from Schimmenti and Bifulco (2015), which found that experiences of parental emotional neglect were associated with anxiety disorders through insecure anxious attachment patterns.

One explanation for this finding is that caregivers who systematically fail to satisfy the child's emotional needs of love and care, or who act hostile and exhibit humiliating behaviors, may prevent the child from developing a positive and realistic representation of self as a lovable and effective human being (Erkoreka *et al.*, 2022; Widom *et al.*, 2018). This resulting defective sense of self may make the child more vulnerable to the onset of internalizing problems in later stages of life, such as adolescence (Lacasa *et al.*, 2015; Napier *et al.*, 2022).

We also conducted analyses to evaluate the potential moderating effects of gender on the direct and indirect association between childhood emotional maltreatment and internalizing symptoms. Consistent with our fourth hypothesis, results suggest that girls who experienced higher levels of emotional abuse and who had an insecure anxious attachment style reported more internalizing problems than boys. This is in line with previous research that found that young girls who have been exposed to emotionally abusive behaviors from their caretakers, as well as have acquired insecure anxious internal working models of themselves and others, may be at higher risk for the onset of emotional disturbances as compared to adolescent boys (Hagborg *et al.*, 2017; Kamkar *et al.*, 2012). However, results highlight that differences in internalizing symptoms between girls and boys were more pronounced at low and moderate levels of emotional abuse, while they became less prominent as the severity of abuse increased. This finding may suggest that adolescent girls are more vulnerable to experiences of emotional abuse, even when they occur less severely in their childhood. According to Li *et al.* (2022), girls show a propensity to experience strong feelings of guilt and responsibility once negative interpersonal events occur. This self-blaming attitude may heighten the risk of poor psychological outcomes, such as depressive and/or anxiety symptoms, and also in the presence of lower levels of emotional abuse. Conversely, the greater severity of this type of maltreatment may exert detrimental effects on adolescents' psychological well-being regardless of gender, which may be a reason why these differences become less pronounced at higher levels of childhood emotional abuse. Moreover, there

were no gender differences found in internalizing problems at lower levels of insecure anxious attachment, whereas moderate and higher levels of insecure anxious attachment were associated with greater increases in internalizing symptoms in girls. It is well known that insecure anxious attachment is characterized by strong fears of rejection and abandonment (Diamond & Fagundes, 2010). These issues, combined with socio-cultural gender-role pressures that drive girls to confer more importance than boys to intimate relationships (Keresteš *et al.*, 2019), may make adolescent girls more prone to express negative feelings internally. This may result in the onset of internalizing symptoms of anxiety and/or depression, which would serve to preserve relationships and prevent abandonment (Kamkar *et al.*, 2012). Conversely, boys with high levels of insecure anxious attachment may express negative emotions through externalizing behaviors, according to specific gender role expectations (Ara, 2016). Finally, regarding emotional neglect, the results did not support our hypothesis, suggesting that higher levels of childhood emotional neglect were associated with increasing levels of internalizing problems for adolescent boys but not for girls. This is an interesting finding, which reveals that young boys may be more vulnerable than girls to experiences of maltreatment characterized by parental failures to provide adequate care and emotional support, as well as to express positive feelings and affection for the child. However, this result warrants further investigation, possibly through prospective studies aimed at clarifying the directions of these associations.

Strengths and limitations

To the best of our knowledge, this is the first study exploring the mediating role of insecure anxious attachment in the association between childhood emotional maltreatment (abuse and neglect) and internalizing problems in adolescents, also considering the potential moderation of gender. This study deepens our understanding of gender differences in the relationship between the above-mentioned variables, which to date has been a scarcely explored question that warrants further investigation.

However, the findings should be considered within the context of some limitations. First, the cross-sectional nature of the study design precludes causal interpretations of the relationships among the examined variables. Future research would benefit from longitudinal designs that could help draw causal inferences regarding the developmental pathways connecting experiences of emotional maltreatment, attachment patterns, and internalizing symptoms in adolescents. Second, we only administered self-report measures, some of which required retrospective recall (childhood experiences of emotional abuse and neglect). These measures may be sensitive to social desirability bias, which may inflate some of the associations among variables. Future research should include multiple methods of assessment, including self-report, qualitative interviews, and collateral informant reports. Third, this study only considered insecure anxious attachment as a mediator of the relationship between emotional maltreatment and internalizing problems. Future longitudinal research should consider multiple potential mediators for this association. Finally, this study only considered the male and female genders. Indeed, the number of individuals who responded to the questionnaires self-identifying as "non-binary" was scarce ($n=5$), so they were excluded from the analyses. Future research would benefit from the inclusion of a larger sample of non-binary people, retesting the moderating effects of gender in the association among the above-mentioned variables.

Implications for theory, prevention, and intervention

Results from this study have important implications for theory, prevention, and intervention.

Our findings shed further light on the effects that early relational experiences may have on the psychological and emotional well-being of adolescents. In line with a developmental psychopathology framework, child emotional maltreatment represents a pathogenic relational environment that heightens the risk for alterations in several psychological development areas, such as attachment security. Insecure attachment patterns in children who experienced childhood maltreatment may in turn initiate maladaptive developmental pathways that expose the individual to the risk of future psychological distress (Cicchetti & Toth, 2016). Psychopathology in adolescence may thus represent a disruption of normal functioning and a dysfunctional adaptation to life adversity (Toth & Cicchetti, 2013).

Given the long-term detrimental effects of childhood emotional abuse and neglect on adolescents' psychological well-being, prevention programs should address dysfunctional relational dynamics in high-risk families to promote parental skills and resources (Beauchaine *et al.*, 2019). Working with abusive and/or neglecting parents to adjust dysfunctional family interactions may be crucial to developing healthier and more supportive relationships with their children, strengthening their ability to use more appropriate strategies to cope with negative emotions and distress (Martin *et al.*, 2016).

Regarding psychological interventions, adolescents reporting histories of emotional maltreatment and higher levels of internalizing symptoms may benefit from attachment-based psychotherapies, given that our results seem to support the mediating role of insecure anxious attachment in the association between these variables. This kind of intervention implies the formation of a secure therapeutic relationship that may help the individual deal with past experiences of parental coldness and rejection, favoring the reinforcement of one's sense of self-worth and trust in interpersonal relationships (Costello, 2013).

Conclusions

This study expanded our knowledge on the role of insecure anxious attachment style in the onset of internalizing problems among adolescents with early experiences of childhood emotional abuse and neglect. This study also sheds further light on potential gender differences among adolescent boys and girls, suggesting that emotional abuse and insecure anxious attachment were strongly associated with internalizing problems in girls, whereas emotional neglect was related to higher levels of internalizing symptoms in boys. These differences should be carefully considered in the development and implementation of therapeutic interventions.

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