



# Childhood maltreatment and borderline personality organization: The mediating roles of attachment and mentalizing

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## ABSTRACT

Child maltreatment (CM) is a well-documented risk factor for borderline personality organization (BPO), a personality structure characterized by identity diffusion, primitive defences, and largely intact but unstable reality testing. BPO is associated with long-term functional impairments. From a developmental psychopathology perspective, BPO may emerge through the interplay of insecure attachment and impaired mentalizing, both shaped by early adversity. However, research on mechanisms linking CM to BPO remains limited. This study examined the mediating roles of adult attachment dimensions and mentalizing in the association between CM and BPO, using an online community sample of 412 participants ( $M = 25.30$ ; 311 female, 101 male). Participants completed the Childhood Trauma Questionnaire–Short Form (CTQ-SF), Experiences in Close Relationships–Revised (ECR-R), Mentalization Scale (MentS), and Borderline Personality Inventory (BPI). Serial multiple mediation analyses revealed that both (a) attachment anxiety and mentalizing, and (b) attachment avoidance and mentalizing, sequentially mediated the relationship between CM and BPO. These findings support the rationale for mentalization-based interventions. They underscore the importance of enhancing mentalizing within therapeutic settings that foster secure attachment, particularly for individuals with BPO who have experienced CM. However, the cross-sectional design limits causal inference, and future research should use longitudinal designs.

## 1. Introduction

Growing dissatisfaction with categorical classification systems in psychopathology—due to low diagnostic reliability, high comorbidity, and their tendency to group together individuals who present with different symptom profiles—has led to increased interest in dimensional approaches (Smith et al., 2020). Unlike categorical models that place individuals into fixed diagnostic groups, dimensional approaches conceptualize psychopathology along a continuum, capturing individual differences in psychological functioning. One influential example is Object Relations Theory, which classifies personality organization into three levels—neurotic (NPO), borderline (BPO), and psychotic (PPO)—based on structural features such as identity integration, defense mechanisms, and reality testing (Kernberg, 1984). NPO involves a cohesive sense of self, mature defenses, and intact reality testing. PPO reflects fragmented identity, primitive defenses, and severely impaired reality testing. BPO falls between these two, marked by identity diffusion, reliance on primitive defenses, and unstable but generally intact

reality testing. Temperamental and genetic factors, along with early experiences, are believed to significantly influence the development of BPO (Caligor et al., 2018).

While the diagnostic category of BPD refers to a specific diagnosis based on defined symptom criteria, BPO represents a dimensional indicator of personality severity. BPO includes individuals with a BPD diagnosis but also extends to other forms of severe personality pathology. Despite extensive literature on early adversity and BPD (Ibrahim et al., 2018; Porter et al., 2020), research linking childhood maltreatment (CM) to BPO is limited. Moreover, the mechanisms through which CM influences BPO are not well understood due to the scarcity of research. Our study aims to investigate the association between CM and BPO, with a particular focus on potential mediators such as adult attachment and mentalizing.

### 1.1. Theoretical framework

Early abuse and neglect are thought to predispose children to

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insecure attachment (Bowlby, 1969). In abusive or neglectful environments, where children's need for closeness may be ignored, rejected, or punished, caregivers are perceived as unresponsive, emotionally unavailable, and potentially unprotective (Widom et al., 2018). Consequently, maltreated children may lack the necessary experiences with caregivers to form secure attachments.

If seeking closeness remains viable despite maltreatment, the child may exhibit clingy behaviors to ensure proximity to the caregiver (Cramer & Kelly, 2010). A neglected child might escalate demands to communicate unmet needs (Widom et al., 2018). If these demands result in increased attention, the child may persist with clingy behaviors, potentially leading to attachment anxiety. Conversely, CM can predispose a child to attachment avoidance. For example, a neglected child's increased demands may be met with punishment, leading the child to avoid closeness (Widom et al., 2018).

CM also impacts mentalizing, which is the ability to understand one's own and others' actions in terms of intentional mental states such as feelings and thoughts (Bateman & Fonagy, 2019). As a result, maltreated children may perceive mental states as threatening, leading them to avoid mentalizing about them (Stagaki et al., 2022). Additionally, early abusive and deprived environments fail to provide the necessary sense of safety for developing a robust understanding of others' mental states (Fonagy, 2000).

Mentalizing abilities are thought to develop with secure attachment bonds, which provide a sense of safety that supports effective mentalizing. Secure attachment fosters the growth of mentalizing skills, while insecure attachment can hinder this capacity (Luyten et al., 2020). Specifically, attachment anxiety can obstruct the understanding of one's own and others' mental states due to heightened arousal associated with anxiety. Conversely, attachment avoidance may lead individuals to avoid exploring their own and others' mental states to protect their self-esteem.

Both insecure attachment and impaired mentalizing are recognized as significant risk factors for BPO. Internal working models of self and others as a result of CM can contribute to fragmented understandings of self and others—a characteristic of BPO. As a result of CM, children may develop a negative internal working model of the self, selectively mentalizing information that reinforces negative self-beliefs while dismissing positive aspects. They may also avoid mentalizing negative content to protect themselves from distress. Instead of forming a cohesive self-concept integrating strengths and vulnerabilities, they may experience the self as fragmented. This fragmented understanding can lead individuals to perceive their internal aspects as disconnected rather than unified, resulting in frequent shifts in values, goals, and beliefs that contribute to identity diffusion. Additionally, impaired mentalizing hinders understanding behaviors in terms of cohesive mental states, exacerbating fragmented experiences and identity diffusion typical of BPO.

### 1.2. Prior evidence and the current study

The association between CM and insecure adult attachment, as well as CM and mentalizing incapacity, is well-documented and supported by systematic statistical syntheses of the literature (Lo et al., 2019; Yang & Huang, 2024). Similarly, consistent findings exist regarding the association between adult insecure attachment and mentalizing incapacity (Brugnera et al., 2021; Dimitrijević et al., 2018; Hayden et al., 2019; Stagaki et al., 2022). However, a recent study examining CM, attachment, and mentalizing simultaneously found that attachment insecurity did not mediate the relationship between CM and mentalizing impairments, which challenges theoretical assumptions and underscores the need for further investigation (Schwarzer et al., 2025). Studies also indicate an association between CM and BPO (Fossati et al., 2016; Fuchshuber et al., 2019; Igarashi et al., 2010; Izdebska, 2021), although less extensively compared to the well-established link between CM and BPD. Finally, while some studies find an association between

mentalizing incapacity and BPO (Fischer-Kern et al., 2010; Fonagy et al., 2016), the literature on this topic remains relatively limited.

Although studies have examined links between CM, attachment, mentalizing, and BPO, none have, to our knowledge, investigated how attachment and mentalizing jointly mediate the relationship between CM and BPO. We suggest these variables help explain how early adversity contributes to BPO. CM may lead to attachment anxiety or avoidance, depending on whether the child adapts by clinging to or withdrawing from caregivers (Widom et al., 2018). These patterns can disrupt mentalizing, which typically develops in stable, attuned relationships (Luyten et al., 2020). Anxiety may impair mentalizing through emotional hyperactivation, while avoidance may lead to disengagement from mental states. Impaired mentalizing limits the ability to reflect on and integrate internal experiences, contributing to a fragmented sense of self—central to identity diffusion in BPO. Based on this framework, we propose two serial mediation models: one involving attachment anxiety and mentalizing (Fig. 1), the other involving attachment avoidance and mentalizing (Fig. 2). In both, we hypothesize that attachment and mentalizing sequentially mediate the link between CM and BPO, while also exerting independent indirect effects.

## 2. Methods

### 2.1. Participants

A total of 486 individuals from a community sample aged 18–65 were initially recruited using a convenience sampling method. Exclusion criteria included self-reported (a) neurological disorders and (b) schizophrenia spectrum/psychotic disorders or bipolar disorder diagnoses. No formal clinical assessment was conducted.

After applying these criteria, the final sample comprised 412 (311 female, 101 male) participants, aged between 18 and 62 years ( $M = 25.30$ ,  $SD = 6.40$ ). The sociodemographic characteristics of the sample are detailed in Table 1.

### 2.2. Measures

#### 2.2.1. Childhood Trauma Questionnaire – Short Form (CTQ-SF)

CTQ-SF is a self-report tool consisting of 28 items in a 5-point Likert format (1 = Never True, 5 = Very Often True) that retrospectively assesses experiences of abuse and neglect during childhood and adolescence as a dimensional construct (Bernstein et al., 2003). It includes five dimensions: physical abuse, sexual abuse, emotional abuse, emotional neglect, and physical neglect. Higher scores on the scale indicate greater experiences of abuse and neglect during childhood. In this study, the total scores for CM across the five different types were obtained using the Turkish version of the scale, which has been found to be valid and reliable (Şar et al., 2021). In our study, the Cronbach's alpha for the total score of the CTQ was 0.93.

#### 2.2.2. Experiences in Close Relationships-Revised (ECR-R)

ECR-R is a self-report tool comprising 36 items in a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree) that assess attachment anxiety (18 items) and attachment avoidance (18 items) in romantic relationships in adults (Fraley et al., 2000). Higher scores on the scales indicate greater attachment anxiety and attachment avoidance in romantic relationships. In this study, attachment anxiety and attachment avoidance scores were obtained using the Turkish version of the scale, which has been validated and shown to be reliable psychometrically (Selçuk et al., 2005). In our study, the Cronbach's alpha for both the attachment and avoidance dimensions was 0.91.

#### 2.2.3. Mentalization Scale (MentS)

MentS is a self-report tool consisting of 28 items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) that measures mentalizing capacity (Dimitrijević et al., 2018). The scale comprises three

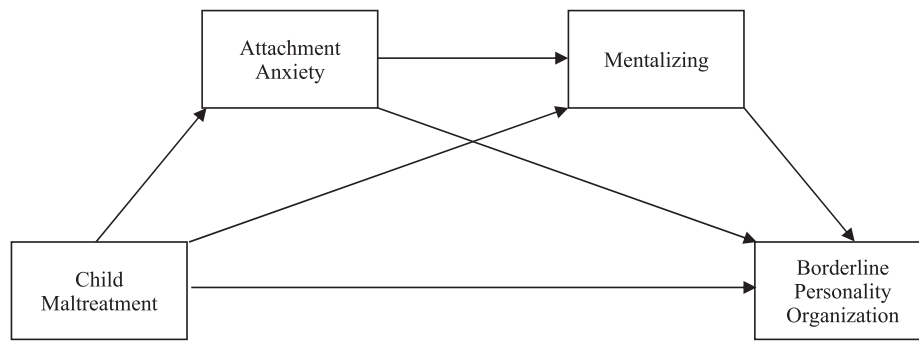


Fig. 1. Mediating roles of attachment anxiety and mentalizing in the relationship between childhood maltreatment and borderline personality organization.

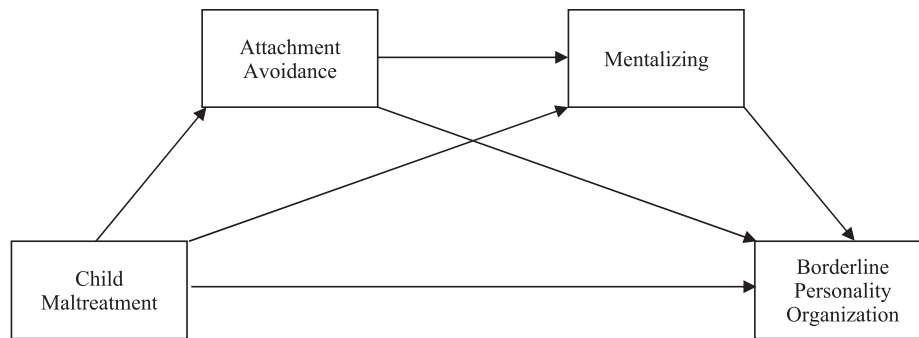


Fig. 2. Mediating roles of attachment avoidance and mentalizing in the relationship between childhood maltreatment and borderline personality organization.

**Table 1**  
Sociodemographic characteristics of the entire sample.

Sociodemographic characteristic	Frequency	
	n	%
Gender		
Female	311	75.5
Male	101	25.5
Marital status		
Single	345	83.7
Married/partnered	58	14.1
Divorced/widowed	9	2.2
Highest educational level		
Primary education	9	2.2
Secondary education	219	53.2
Higher education	184	44.7
Self-reported SES		
Low	59	14.3
Middle	302	73.3
High	51	12.4

Note. SES = socio-economic status.

dimensions: self-related mentalization, other-related mentalization, and motivation to mentalize. Higher scores on the scale indicate better mentalizing abilities. In this study, total mentalizing scores were derived using the Turkish version of the scale, which has demonstrated sufficient psychometric properties (Törenli Kaya et al., 2023). In our study, the Cronbach's alpha for the total score of the scale was 0.87.

#### 2.2.4. Borderline Personality Inventory (BPI)

BPI is a self-report tool consisting of 53 items on a true-false format that measure the BPO based on the conceptualization of Kernberg (1984). The scale comprises four dimensions: identity diffusion, primitive defense mechanisms, reality testing, and fear of closeness. Every “true” scored as 1 and the higher scores on the scale indicate more severe BPO. In the current study, total BPO scores were derived using the Turkish version of the scale, which was validated in a clinical sample

and healthy controls (Aydemir et al., 2006). In our study, the Cronbach's alpha for the total score of the scale was 0.89.

#### 2.3. Procedure

The study employed a cross-sectional design using Google Forms for data collection. Participants were recruited through study advertisements on social media platforms including Facebook, Twitter, and Instagram. Participation was voluntary, and no incentives were provided. Participants gave written informed consent before completing a series of partial counterbalanced self-report questionnaires.

#### 2.4. Data analysis

The data were analyzed using SPSS version 28 and the PROCESS v4.2 extension (Hayes, 2017). Pearson's Product Moment Correlation Analysis and Independent Samples *t*-tests or One-Way Analysis of Variance (ANOVA) were used to examine relationships between demographic variables and study variables.

To explore serial mediating pathways involving (a) attachment anxiety and mentalizing, and (b) attachment avoidance and mentalizing in connecting CM to BPO, we employed two Serial Multiple Mediating Variable Analyses using Model 6 within the PROCESS Macro extension. This analysis included 5000 bootstrap samples at a 95 % confidence level. Significant indirect effects were determined by examining confidence intervals from these bootstrap samples, with indirect effects considered present when the interval does not include zero.

### 3. Results

#### 3.1. Descriptive statistics and correlations between study variables

Table 2 presents descriptive statistics and bivariate correlations for the study variables. Age positively correlated with CM, and was therefore included as a covariate in subsequent analyses. This association may

**Table 2**

Descriptive statistics and correlations for study variables.

Variable	n	M	SD	1	2	3	4	5	6
1. CTQ	412	43.43	15.82	–					
2. ECR-R-AN	412	3.96	1.15	0.34***	–				
3. ECR-R-AV	412	3.20	1.09	0.30***	0.38***	–			
4. MentS	412	97.27	12.96	–0.15**	–0.19***	–0.36***	–		
5. BPI	412	14.03	8.31	0.44***	0.50***	0.29***	–0.29***	–	
6. Age	412	25.30	6.40	0.14**	–0.06	–0.08	–0.04	–0.03	–

Note. CTQ = Childhood Trauma Questionnaire; ECR-R-AN = Experiences in Close Relationships – Revised – Attachment Anxiety; ECR-R-AV = Experiences in Close Relationships – Revised – Attachment Avoidance; MentS = Mentalization Scale; BPI = Borderline Personality Inventory.

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

reflect generational differences in exposure to adverse childhood environments. Furthermore, an independent samples t-test showed that females scored higher on mentalizing ( $M = 98.30$ ,  $SD = 13.01$ ) compared to males ( $M = 94.11$ ,  $SD = 12.33$ ), with a statistically significant difference ( $t(410) = 2.85$ ,  $d = 0.33$ ,  $p = .005$ ). Due to the small sample sizes in the primary education category ( $n = 9$ ) and the divorced/widowed category ( $n = 9$ ), we did not perform ANOVA for the variables of educational level and marital status in relation to the study variables.

In addition, a one-way ANOVA revealed significant differences in CM total scores ( $F(2, 409) = 10.55$ ,  $p = .000$ ) and BPO symptoms ( $F(2, 409) = 5.81$ ,  $p = .003$ ) across self-reported socio-economic status (SES). A Tukey post hoc test indicated that the low SES group reported higher CM experiences ( $M = 51.75$ ,  $SD = 18.10$ ) compared to both the middle SES group ( $M = 41.67$ ,  $SD = 14.23$ ,  $p = .000$ ) and the high SES group ( $M = 44.24$ ,  $SD = 18.93$ ;  $p = .031$ ). Similarly, the Tukey post hoc test indicated that the low SES group reported more BPO symptoms ( $M = 16.93$ ,  $SD = 8.66$ ) than the middle SES group ( $M = 13.23$ ,  $SD = 7.64$ ,  $p = .005$ ). Based on these findings, we included sex and SES, in addition to age, as covariates in our subsequent analyses.

### 3.2. Serial mediation analyses

#### 3.2.1. The serial mediator roles of attachment anxiety and mentalizing

To investigate the roles of attachment anxiety and mentalizing in mediating the relationship between CM and BPO, we conducted a serial multiple mediation analysis (Hayes, 2017). Sex, age, and self-reported SES were included as covariates. All path coefficients and effects reported are standardized.

According to the results in Fig. 3, we found a significant indirect effect of attachment anxiety on the relationship between CM and BPO (CM → attachment anxiety → BPO) (indirect effect = 0.12, BootSE = 0.02, 95 % CI [0.08, 0.17]), indicating that increased CM exposure is associated with higher attachment anxiety, which in turn is associated

with higher BPO, independently of mentalizing.

However, we did not find a significant independent indirect effect of mentalizing on the CM-BPO relationship (CM → mentalizing → BPO), suggesting that while mentalizing relates to BPO, it does not independently mediate this relationship from attachment anxiety.

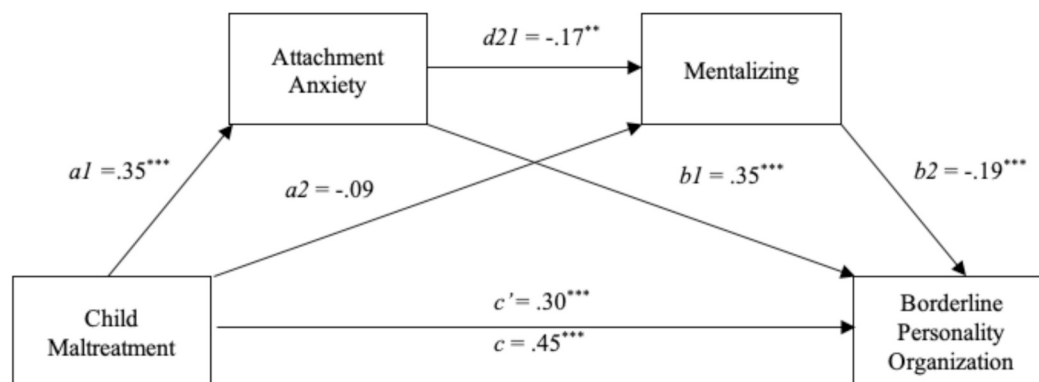
Finally, a significant serial indirect effect was identified involving attachment anxiety and mentalizing in the CM-BPO relationship (CM → attachment anxiety → mentalizing → BPO) (indirect effect = 0.01, BootSE = 0.00, 95 % CI [0.00, 0.02]), indicating that as CM exposure increases, attachment anxiety rises, leading to reduced mentalizing; subsequently, decreased mentalizing is associated with higher BPO levels. The indirect and direct effects were in the same direction, indicating complementary mediation. The results of the model are presented in Table 3.

**Table 3**

Unstandardized indirect and direct effects in the sequential mediation model of attachment anxiety and mentalizing between childhood maltreatment and borderline personality organization.

Path	Effect	BootSE	95 % CI
CTQ → ANX → BPI	0.0653	0.0019	[0.0430, 0.0911]
CTQ → MEN → BPI	0.0089	0.0057	[–0.0010, 0.0211]
CTQ → ANX → MEN → BPI	0.0059	0.0026	[0.0020, 0.0118]
Total indirect effect	0.0802	0.0130	[0.0559, 0.1075]
Direct effect	0.1560	0.0226	[0.1115, 0.2005]
Total effect	0.2362	0.0237	[0.1896, 0.2827]

Note. Results were considered significant when the 95 % confidence intervals (CIs) did not include zero. CTQ = Childhood Trauma Questionnaire total scores; ANX = Attachment Anxiety total scores; MEN = Mentalizing Questionnaire total scores; BPI = Borderline Personality Inventory total scores; CI = confidence interval; BootSE = bootstrapped standard error.



**Fig. 3.** Serial multiple mediating variable analysis: The roles of attachment anxiety and mentalizing.

Note.  $a_1$  = Childhood maltreatment → Attachment anxiety;  $a_2$  = Childhood maltreatment → Mentalizing;  $b_1$  = Attachment anxiety → Borderline personality organization;  $b_2$  = Mentalizing → Borderline personality organization;  $d_{21}$  = Attachment anxiety → Mentalizing;  $c$  = Total effect;  $c'$  = Direct effect.

### 3.2.2. The serial mediator roles of attachment avoidance and mentalizing

To explore the mediating roles of attachment avoidance and mentalizing in the relationship between CM and BPO, we conducted a serial multiple mediation analysis (Hayes, 2017). Sex, age, and self-reported SES were included as covariates in the model. All path coefficients and effects reported are standardized.

The results, depicted in Fig. 4, indicated that there was no statistically significant indirect effect of attachment avoidance on the relationship between CM and BPO (CM → attachment avoidance → BPO). This suggests that, independent of mentalizing, increasing exposure to CM is associated with higher levels of attachment avoidance but not with higher levels of BPO.

Similarly, we did not find a statistically significant indirect effect of mentalizing in the relationship between CM and BPO (CM → mentalizing → BPO). This result indicates that, independent of attachment avoidance, increasing exposure to CM is not associated with impaired mentalizing, even though impaired mentalizing is associated with higher levels of BPO.

Finally, we identified a statistically significant serial indirect effect involving attachment avoidance and mentalizing in the relationship between CM and BPO (CM → attachment avoidance → mentalizing → BPO) (indirect effect = 0.02, BootSE = 0.01, 95 % CI [0.01, 0.04]). This finding suggests that as exposure to CM increases, attachment avoidance also increases, leading to decreased mentalizing; subsequently, lower levels of mentalizing are linked with higher levels of BPO. The indirect and direct effects were in the same direction, indicating complementary mediation. The results of the model are presented in Table 4.

## 4. Discussion

The present study is, to our knowledge, the first to investigate the sequential mediator roles of adult attachment and mentalizing in the relationship between CM and BPO in a diverse online community sample.

In our first model, which examines attachment anxiety and mentalizing as mediators, we confirmed our hypothesis regarding their sequential mediating effects between CM and BPO. Additionally, attachment anxiety independently mediated the CM-BPO relationship, while we did not find a mediating effect of mentalizing independent of attachment anxiety in this association.

In our second model, involving attachment avoidance and mentalizing as mediators, we similarly confirmed our hypothesis of sequential mediation of attachment avoidance and mentalizing between CM and BPO. However, we did not observe independent mediating effects of attachment avoidance when mentalizing was included in the model, and vice versa.

Our findings regarding the link between CM and BPO align with existing literature that demonstrates a positive association (Fossati et al., 2016; Fuchshuber et al., 2019; Igarashi et al., 2010; Izdebska, 2021).

**Table 4**

Unstandardized indirect and direct effects in the sequential mediation model of attachment avoidance and mentalizing between childhood maltreatment and borderline personality organization.

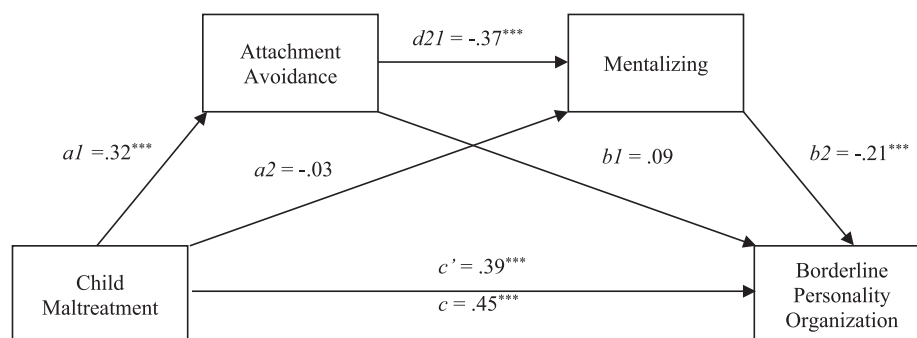
Path	Effect	BootSE	95 % CI
CTQ → AV → BPI	0.0153	0.0088	[-0.0007, 0.0338]
CTQ → MEN → BPI	0.0037	0.0058	[-0.0068, 0.0163]
CTQ → AV → MEN → BPI	0.0131	0.0041	[0.0060, 0.0222]
Total indirect effect	0.0320	0.0106	[0.0131, 0.0547]
Direct effect	0.2041	0.0240	[0.1569, 0.2513]
Total effect	0.2362	0.0237	[0.1896, 0.2827]

Note. Results were considered significant when the 95 % confidence intervals (CIs) did not include zero. CTQ = Childhood Trauma Questionnaire total scores; AV = Attachment Avoidance total scores; MEN = Mentalizing Questionnaire total scores; BPI = Borderline Personality Inventory total scores; CI = confidence interval; BootSE = bootstrapped standard error.

Like established research on CM and BPD, CM appears to be a risk factor for BPO, encompassing various severe personality pathologies (Caligore et al., 2018). Therefore, CM may predispose individuals to enduring personality issues across different categories of personality disorders.

The finding that attachment anxiety and mentalizing have sequential mediator roles in the relationship between CM and BPO is also aligned with previous studies showing high levels of CM are associated with insecure attachment (Lo et al., 2019), insecure attachment related to mentalizing problems (Brugnera et al., 2021; Dimitrijević et al., 2018; Hayden et al., 2019; Stagaki et al., 2022), and studies that relate mentalizing problems to BPO (Fischer-Kern et al., 2010; Fonagy et al., 2016).

From a developmental psychopathology perspective, CM may predispose individuals to develop attachment anxiety, as maltreated children sometimes exhibit clingy behavior to ensure consistent care and closeness (Widom et al., 2018). Individuals with high attachment anxiety typically employ hyperactivating strategies, making excessive efforts to attract their attachment figure's attention (Mikulincer & Shaver, 2007). These strategies heighten arousal during stress, hindering complex mental processing and nuanced understanding of self and others. Consequently, rather than employing controlled mentalizing, which is essential for navigating complex relational dynamics, these individuals may rely on automatic mentalizing (Luyten et al., 2020). This reliance can lead to one-dimensional interpretations of events; for example, interpreting a friend's failure to greet them as a sign of being unloved rather than considering alternative explanations, such as their friend being preoccupied. Such patterns are characteristic of individuals at the BPO level, where experiences are often perceived in a one-dimensional and certain manner, lacking a balanced understanding that integrates both positive and negative aspects. This fragmentation contributes to identity diffusion, wherein interpretations of events fluctuate rapidly from one dimension to another, leading to unstable values, goals, and an inconsistent sense of self and others.



**Fig. 4.** Serial multiple mediating variable analysis: The roles of attachment avoidance and mentalizing.

Note.  $a_1$  = Childhood maltreatment → Attachment avoidance;  $a_2$  = Childhood maltreatment → Mentalizing;  $b_1$  = Attachment avoidance → Borderline personality organization;  $b_2$  = Mentalizing → Borderline personality organization;  $d_{21}$  = Attachment avoidance → Mentalizing;  $c$  = Total effect;  $c'$  = Direct effect.



Individuals high in attachment anxiety often perceive themselves as lacking in value or competence (Mikulincer & Shaver, 2007). This perception can hinder their capacity to mentalize distressing thoughts about their perceived inadequacies. Conversely, individuals with insecure attachment patterns tend to disregard information that contradicts their internal models (Mikulincer & Arad, 1999), potentially impeding their ability to mentalize cues that support their self-worth. These dynamics can impair their ability to fully mentalize their experiences, contributing to splitting and identity diffusion.

The finding that attachment avoidance and mentalizing sequentially mediate the relationship between CM and BPO aligns with literature demonstrating a positive association between CM and insecure attachment (Lo et al., 2019), insecure attachment and mentalizing issues (Stagaki et al., 2022), and mentalizing and BPO (Fonagy et al., 2016).

CM may also lead to attachment avoidance by linking closeness with potential harm (Widom et al., 2018). Individuals with high attachment avoidance often avoid understanding mental states defensively, seeing them as threatening (Redondo & Luyten, 2018). To safeguard their self-esteem, they may avoid understanding others, guided by negative internal working models portraying others as unreliable or malevolent. This reduced capacity to mentalize can foster a one-dimensional view of others, laying the groundwork for splitting and identity diffusion.

Our analysis did not find evidence that mentalizing independently mediates the relationship between CM and BPO when controlling for attachment anxiety. Specifically, the association between CM and mentalizing abilities was not significant once attachment anxiety was accounted for. This finding is consistent with the literature that highlights insecure attachment, resulting from early adversity, as a key factor contributing to reduced mentalizing abilities (Luyten et al., 2020).

Similarly, in the second model, where attachment avoidance was controlled for, mentalizing also did not independently mediate the CM-BPO relationship. The link between CM and mentalizing abilities disappeared when attachment avoidance was considered. These results further support the idea that insecure attachment plays a crucial role in explaining the connection between CM and mentalizing issues. In both models, the dimensions of attachment appear to be central in elucidating the pathway from CM to diminished mentalizing abilities.

In the second model, unlike the first, attachment avoidance did not independently mediate the CM-BPO association when mentalizing was controlled for. Analysis revealed that the relationship between attachment avoidance and BPO disappeared once mentalizing was considered. This finding aligns with previous research that highlights the connections between attachment avoidance and mentalizing deficits (Dimitrijević et al., 2018), as well as between mentalizing and BPO (Fischer-Kern et al., 2010).

The reason attachment anxiety plays an independent role when mentalizing is controlled in the first model, while attachment avoidance does not play an independent mediator role when mentalizing is controlled in the second model, may be explained by the stronger association between attachment avoidance and mentalizing deficits in the latter. While individuals with high attachment anxiety may sometimes appear to have good mentalizing skills, these may actually be overactive pseudomentalising, which involves excessive energy devoted to understanding oneself and others but results in maladaptive outcomes (Bateman & Fonagy, 2019). This may inflate scores on mentalizing questionnaires, thereby weakening the relationship between attachment anxiety and mentalizing abilities. In contrast, attachment avoidance may more consistently relate to genuine mentalizing deficits, hence why mentalizing fully explain the relationship between attachment avoidance and BPO, but not attachment anxiety and BPO.

#### 4.1. Clinical implications

The study's findings indicate that CM, attachment anxiety, attachment avoidance, and mentalizing capacity are related to BPO. Therefore, assessing these factors in psychotherapy sessions may help identify

individuals at risk of developing BPO and improve the treatment process.

Interventions targeting insecure attachment and enhancing mentalizing capacity may prove effective in psychotherapy for individuals with BPO, particularly those with histories of childhood abuse and neglect (Bateman & Fonagy, 2019). Our findings support the principles of mentalizing-based psychotherapy, which aims to foster a secure attachment with the therapist to improve understanding of self and others' mental states (Bateman & Fonagy, 2019).

A consistent therapeutic environment may help individuals feel secure enough to explore their own and others' mental states, promoting mentalizing. Maintaining a predictable therapeutic frame can foster attachment security and mentalizing skills. Addressing the perceived function of relational patterns, such as clinginess or distancing, may validate patients' experiences and create a secure context for challenging maladaptive internal working models.

The finding that the association between CM and mentalizing disappears when attachment anxiety and avoidance are accounted for underscores the critical role of attachment in the relationship between CM and BPO. This suggests that secure attachment could serve as a protective factor, enabling individuals to maintain mentalizing capacities despite CM experiences. Therefore, creating an environment that fosters secure attachment, even in the context of maltreatment, may be a key preventative strategy.

Furthermore, the disappearance of the association between attachment avoidance and BPO when mentalizing is accounted for highlights the importance of targeting mentalizing interventions in individuals with avoidant tendencies. Enhancing mentalizing skills in this population could be crucial for mitigating the development of BPO.

#### 4.2. Limitations and future directions

The retrospective assessment of CM may introduce recall bias, and the correlational design limits causal inference. Future studies could use structured interviews or longitudinal methods to clarify the direction and timing of associations. Our primarily non-clinical sample (ages 18–62) included few participants over 40, limiting generalizability to older adults and clinical populations where BPO is more relevant. Replication with clinical samples across a broader age range is warranted. Finally, reliance on self-report measures may introduce biases such as social desirability or mood effects. Experimental or behavioural assessments could enhance objectivity.

### 5. Conclusion

In conclusion, this study suggests that insecure attachment and impaired mentalizing may act as a serial mechanism through which BPO develops in response to CM. Therefore, psychosocial interventions that enhance mentalizing abilities within a safe and secure environment could be crucial for supporting individuals with BPO who have experienced CM.

#### CRedit authorship contribution statement

**Yağızcan Kurt:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Zehra Çakır:** Writing – review & editing, Supervision, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

#### Ethical approval

Ethical approval was obtained from the Hacettepe University Ethics Commission (ID Number: 35853172-300) before recruitment.

## Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT 4.0 in order to proofread. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

## References

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