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Epistemic mistrust mediates the association between childhood maltreatment and impairments in mentalizing in a sample of university students

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ABSTRACT

Background: Mentalizing is linked to mental health development and psychosocial functioning. Identifying and understanding the factors that may be associated with ineffective mentalizing is crucial for creating targeted psychosocial or psychotherapeutic interventions.

Objective: This exploratory study assesses whether experiences of childhood maltreatment, along with attachment insecurity and epistemic mistrust, are associated with limitations in mentalizing abilities.

Participants and setting: A total of 382 primarily young adults from different universities completed questionnaires about their childhood maltreatment experiences (retrospectively assessed), attachment insecurity, epistemic mistrust, and ineffective mentalizing, using a cross-sectional study design. All participants were pursuing a degree in educational fields.

Methods: Structural equation modeling was applied to test the hypothesized framework.

Results: There were significant positive associations between experiences of childhood maltreatment, epistemic mistrust ($\beta = 0.32$ [0.17–0.46], $p = .001$), and attachment insecurity ($\beta = 0.29$ [0.18–0.40], $p < .001$). Epistemic mistrust fully mediated the relationship between childhood maltreatment and ineffective mentalizing ($\beta = 0.17$ [0.08–0.28], $p = .001$). However, attachment insecurity did not mediate this link.

Conclusion: This exploratory study sheds light on the development of mentalizing impairments, though it is limited by its cross-sectional nature, reliance on self-reporting, and the uniformity of the sample with mainly female, primarily young adults from different universities. The preliminary findings suggest the role of attachment insecurity might have been overemphasized previously. Moreover, the link between childhood maltreatment and mentalizing deficits appears more intricate, as it was fully mediated by epistemic mistrust in this study. The findings support the notion of addressing epistemic mistrust in psychosocial interventions designed to improve mentalizing abilities that have been compromised.

1. Introduction

Mentalizing refers to the ability to understand and interpret one's own and others' actions and inner experiences through attributing intentional states such as desires, thoughts, or feelings (Fonagy et al., 1991, 2002). This capacity enables individuals to predict behaviour and view it as meaningful through considering their own mental state and that of others (Fonagy & Allison, 2014). Whereas people with proficient mentalizing skills can adjust these processes flexibly in response to external and internal demands, those with less effective skills may struggle with distorted perceptions and misinterpretations of psychological states, leading to increased uncertainty in relying on mental states for accurate information (Luyten et al., 2020).

The ability to mentalize is crucial for mental health (Fonagy et al., 2017a), with ineffective mentalizing linked to various mental health conditions (Johnson et al., 2022; Katznelson, 2014). For instance, research indicates that the capacity to connect behaviour with mental states is compromised in individuals with Borderline Personality Disorder (Németh et al., 2018), depression (Fischer-Kern et al., 2013, 2022), Attention-Deficit/Hyperactivity Disorder (Perroud et al., 2017), and substance abuse issues (Handeland et al., 2019). Similarly, in non-clinical groups, poor mentalizing is associated with mental health challenges such as externalizing (Adler et al., 2020) and internalizing symptoms (De Coninck et al., 2021), bodily complaints (Ballespí et al., 2019), diminished well-being (Brugnera et al., 2021), and an increased symptom load (Berthelot et al., 2019). Drawing from the mentalized affectivity model (Fonagy et al., 2002; Jurist, 2005), it is reasonable to suggest that ineffective mentalizing adversely affects the ability to regulate emotions properly. Consequently, individuals may be more inclined to use maladaptive emotion regulation strategies, a notion supported by research in both clinical (e.g., Euler et al., 2021) and non-clinical samples (Greenberg et al., 2017; Schwarzer et al., 2021). This difficulty in managing emotions is a key aspect of various mental disorders (e.g., Aldao et al., 2010; Cavicchioli et al., 2021). Expanding on this theoretical framework, both clinical interventions such as Mentalization-Based Therapy (Bateman & Fonagy, 2004) and non-clinical interventions (e.g., Georg et al., 2022) have been developed to enhance mentalizing abilities. These have shown to be effective (e.g., Rossouw & Fonagy, 2012; Storebø et al., 2020) and are linked to more balanced mentalizing and reduced psychopathological symptoms (e.g., De Meulemeester et al., 2018; Katznelson et al., 2020; for a review: Volkert et al., 2019).

Referring to the current state of research, mentalizing ability seems to have a significant role in the development of mental health, notably affecting psychosocial functioning. Therefore, it is essential to identify and better understand the pathways that lead to limitations in mentalizing ability in order to develop effective psychosocial or psychotherapeutic interventions.

1.1. A developmental framework of mentalizing capacity

Fonagy and colleagues (1991, 2002, 2015, 2017a, 2017b, 2019, 2022) have outlined a comprehensive framework for the development of mentalizing over recent years. The core notion is that mentalizing emerges from developmental processes, relying on the child's experiences that their mental states are accurately recognized and sensitively responded to by caregivers through coordinated and contingent affect mirroring (Luyten et al., 2017). This interaction enables the child to internalize insights about their current mental state, to build an understanding of this state (Fonagy et al., 2002), and, ultimately, to learn to regulate these mental states effectively (Jurist, 2005). Therefore, the mentalizing ability of parents is a crucial factor for the development of their children's mentalizing capacities (Allen et al., 2008), a link that has been established in numerous studies: The association between parental mentalizing and their children's mentalizing has been documented across childhood (e.g., Ensink et al., 2016), adolescence (e.g., Quek et al., 2018), and young adulthood (e.g., Jovancevic et al., 2021).

Moreover, the developmental framework indicates that early experiences of childhood maltreatment by primary caregivers or other perpetrator can significantly jeopardize the development of a child's mentalizing capacity, potentially leading to long-lasting impairments (Fonagy et al., 2002). Children raised in environments that are emotionally or physically threatening, marked by harm, hostility, exploitation, neglect, and abuse, miss out on the sensitive, adaptive, and reliable co-regulation with these pivotal figures (Luyten et al., 2020). Consequently, they may come to view themselves as unwanted, worthless, devalued, and despised, which profoundly impacts their self-development and mentalizing capacity (Allen et al., 2008; Luyten et al., 2017). Recognizing and understanding one's own mental states (such as feelings of shame or helplessness) and empathizing with the unpredictable and threatening mental states of the caregiver (such as intentions to hurt or harm the child) may be endangering for children facing unpredictable environments. This may lead to a refraining from thinking about mental states, amongst other distortions. While such shutting down of mentalizing may have started as a coping strategy to preserve a coherent sense of self in a physically and emotionally hostile environment, generalizing this approach to later, potentially benign, relational contexts will affect full use of salutogenic provision of the social environment (Fonagy et al., 2002). The connection between ineffective mentalizing and a history of childhood

maltreatment has been demonstrated in studies involving children (e.g., Ensink et al., 2016, 2017), adolescents (e.g., Taubner et al., 2016), and adults (e.g., Chiesa & Fonagy, 2014; Huang et al., 2020) as well as in a recently published meta-analysis (Yang & Huang, 2024). However, it has be noted that this relationship appears to be influenced by a number of third variables and also seems to depend on the chosen form of operationalization of the constructs. For instance, Stacks et al. (2014) report no associations between parental mentalizing, assessed with the Parental Development Interview, and experiences of childhood maltreatment.

During the initial stages of developing the conceptual framework of mentalizing, Fonagy et al. (2002) highlighted the importance of the attachment relationship as a critical context in which children develop the ability to mentalize (Fonagy et al., 1991, 2002). Drawing on Attachment Theory (Bowlby, 1969), they argued that insecure attachment relationships could lead to difficulties in a child's capacity to mentalize, due to the absence of experiences where the child feels their mental states are accurately acknowledged and mirrored by their caregiver (Fonagy et al., 2002; Fonagy & Target, 1997). Research has supported this perspective, identifying both attachment insecurity and a history of childhood maltreatment as significant factors affecting the development of mentalizing abilities (e.g., Fonagy et al., 1991; Slade et al., 2005).

In more recent developments, the concept of epistemic trust has been incorporated into the mentalizing framework, broadening it to encompass a comprehensive theory of social learning processes (Fonagy et al., 2015). This includes the dynamics of attachment, the development of mentalizing capabilities, and the individual's stance towards learning from others (Luyten et al., 2020). This broader approach suggests that focusing only on the attachment relationship as the basis for emotional and social development, and the emergence of mentalizing skills, might be too limited, as it neglects the influence of the wider social context (Fonagy et al., 2017a, 2017b, 2022). Fonagy and colleagues (2015, 2019), Nolte et al. (2023) have proposed that adverse developmental experiences, such as a history of childhood maltreatment, do more than disturb secure attachment patterns. They also restrict the capacity for mentalizing and contribute to epistemic mistrust, hindering the ability to learn effectively in social contexts.

Epistemic mistrust, a significant consequence of such developmental disruption, refers to a chronic state of heightened alertness, stemming from a belief that others are not trustworthy and ill-intended (Campbell et al., 2021). This initially adaptive skepticism in maltreated children is assumed to lead to the dismissal of information from social sources, whether it concerns cognitive or socio-emotional insights, thereby compromising the transfer of social knowledge and the growth of socio-emotional understanding and skills, including effective mentalizing (Luyten et al., 2020). It is crucial to recognize that such "maladaptive developments" are in fact ontogenetic adaptations that have served as coping mechanisms under adverse conditions, preserving basic functionality in the face of hardship or childhood maltreatment (Nolte et al., 2023). Nevertheless, these adaptations can impede the assimilation of new information derived from social interactions, resulting in interpersonal or epistemic isolation and a state of mind that is difficult to engage with (Campbell et al., 2021). While evidence in relation to these assumptions is still emerging, preliminary research has identified strong links between epistemic mistrust, experiences of childhood maltreatment, and compromised mentalizing abilities (e.g., Kampling et al., 2022; Locati, Benzi, et al., 2023; Locati, Milesi, et al., 2023; Riedl et al., 2023, 2024). Therefore, it appears that alongside a history of childhood maltreatment generating attachment insecurity, epistemic mistrust also plays a critical role in explaining the wide developmental impact of adverse childhood experiences including observed mentalizing deficits.

1.2. The current study

This cross-sectional study aimed to explore the described framework in a community sample of primarily young adults from various university courses who were pursuing a degree in educational fields. To our current knowledge, there is no existing population-based research that simultaneously examines the themes of childhood maltreatment, attachment insecurity, epistemic mistrust, and mentalizing abilities in a single model using data from a community sample. Investigating pathways that may contribute to mentalizing difficulties is crucial for developing specific psychosocial and psychotherapeutic interventions aiming to enhance limited mentalizing capacities. Given the cross-sectional research design used in this study, the findings should be interpreted as exploratory and aligned with theoretical frameworks rather than as evidence of causality. The analyses are intended to provide a foundation for future longitudinal investigations into these complex developmental relationships.

Building on the theoretical groundwork laid by Fonagy and colleagues (1991, 2002, 2015, 2017a, 2017b, 2019, 2022), we anticipate a direct positive impact of retrospectively reported childhood maltreatment on current mentalizing deficiencies (Hypothesis H1), as indicated by various studies (e.g., Chiesa & Fonagy, 2014; Ensink et al., 2016; Rosso, 2022; Taubner et al., 2016) and a recently published meta-analysis (Yang & Huang, 2024). We expect an indirect route from childhood maltreatment to poor mentalizing through the mechanism of the participants' attachment insecurity (Hypothesis H2). The links between a history of childhood maltreatment and attachment insecurity (e.g., Baer & Martinez, 2006; Lo et al., 2019), as well as between attachment insecurity and mentalizing deficits (e.g., Fonagy et al., 1991; Slade et al., 2005), are well documented. These studies highlight the importance of secure attachment relationships as essential environments that facilitate the development of effective mentalizing skills. Finally, in light of the recent theoretical advances in mentalizing theory (Fonagy et al., 2017a, 2019; Fonagy et al., 2022), we suggest an indirect effect of childhood maltreatment on present mentalizing challenges mediated by the participants' epistemic mistrust (Hypothesis H3).

2. Method

2.1. Procedure and participants

The data for this exploratory study, designed as a cross-sectional survey, were collected as part of the FILME research project (Gingelmaier et al., 2021), which focused on the validation of a novel instrument for assessing mentalizing capacities in teachers and

educators. To achieve this, participants were engaged in a series of assessments across two sessions. Each session had a duration of approximately 90 min and was conducted at several universities throughout Germany and Switzerland. Data collection was facilitated through the online survey platform SoSci Survey. The Ethical Committee of Ludwigsburg University of Ecucation (III-Sopaed_NiSc-0018) provided approval for this research. Prior to participating, all individuals were briefed on the study's objectives and provided written consent. They were also informed about available support resources should they experience distress during or after their participation. The involvement in the study was entirely voluntary, with participants retaining the right to cease their participation at any point or to retrospectively withdraw their data by reaching out to the primary author. All methods used were carried out in accordance with the principles stated in the Declaration of Helsinki.

The final cohort included 382 participants, primarily young adults (204 female, 49 male, 129 sex not disclosed), who were recruited from various university courses in Germany and Switzerland. While geographical invariance was not explicitly tested due to the small number of Swiss participants ($n = 15$), all participants shared comparable educational contexts, as they were university students pursuing degrees in similar educational fields (for details: ESM). The average age of participants was 24.90 years ($SD = 5.24$; $Min = 20$; $Max = 57$). While we recognize the relevance of the term 'emerging adults' as introduced by Arnett (2000) to describe individuals in the developmental phase between adolescence and full-fledged adulthood, typically ranging from ages 18 to 25, we chose to use primarily young adults' to reflect the broader age range of our sample. Analyses revealed a significant age difference between female and male participants, albeit with a small effect size ($F(1, 250) = 7.61$, $p = .006$, $\eta^2 = 0.03$), indicating that males were slightly older than females within the sample. No significant sex-based differences were noted for any other variables examined within this study (for details: ESM).

2.2. Measures

2.2.1. Impairments in mentalizing

Impairments in mentalizing were assessed using the brief German version of the Reflective Functioning Questionnaire (RFQ) (Fonagy et al., 2016), which evaluates individuals' tendencies to contemplate mental states that are relevant to understanding their own behaviour and that of others. The RFQ is recognized as a questionnaire that is cost-effective and suitable for use with large sample sizes. In its original version, the RFQ included eight items, with responses recorded on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree), that loaded onto a total of two factors. Both factors reflected specific impairments in mentalizing. However, as the RFQ has been shown to not perform very well psychometrically, recent guidance, based on research with substantial samples from Germany and the USA (Müller et al., 2022; Spitzer et al., 2021), recommends employing the RFQ as a one-dimensional scale. This scale should contain only six items with the strongest facor loadings that specifically assess uncertainty in employing mental states as reliable information (e.g., "I don't always understand the reasons behind my actions"). This factor structure was validated in subsequent studies (Ruiz-Parra et al., 2023; Woźniak-Prus et al., 2022). Therefore, in the current study the RFQ was used as one-dimensional scale with higher scores indicating stronger impairments in mentalizing. Nevertheless, in this study the results from a confirmatory factor analysis (CFA) led to the removal of item 8 due to a non-significant loading, resulting in a five-items revised one-dimensional model with satisfactory fit ($\chi^2(3, 382) = 5.749$, $p = .124$, $RMSEA = 0.049$ [0.000–0.110], $CFI = 0.990$, $SRMR = 0.022$) (for details: ESM). According to the Kolmogorov–Smirnov test, the scores of this scale did not follow a normal distribution ($p = .001$). The internal consistency of the scale was found to be acceptable given their length ($\omega = 0.67$).

2.2.2. Attachment insecurity

Attachment insecurity was evaluated using the German adaptation of the Experiences in Close Relationships – Revised Questionnaire (ECR-RD8), in its short form, as recently validated by Ehrenthal et al. (2021). The ECR-RD8 is a self-report instrument comprising eight items about experiences with current romantic partners, with responses on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). It includes two subscales: attachment-related anxiety and attachment-related avoidance, where higher scores indicate greater levels of anxiety or avoidance. Ehrenthal and colleagues (2021) confirmed its satisfactory psychometric properties, a finding that was corroborated in this study (ERC_Anx: $\omega = 0.75$; ECR_Avoi: $\omega = 0.78$). The distributions of scores on both subscales deviated from normality, as shown by the Kolmogorov-Smirnov tests (both $p < .001$). However, for the purposes of this study, a single overarching construct termed 'attachment insecurity' was derived from all items of the ECR-RD8. This construct was validated through CFA, with the model's fit indices falling within acceptable range ($\chi^2(10, 382) = 23.317$, $p = .010$, $RMSEA = 0.059$ [0.028–0.091], $CFI = 0.986$, $SRMR = 0.024$).

2.2.3. Epistemic mistrust

Epistemic mistrust was evaluated using the epistemic mistrust subscale from the German adaptation of the Epistemic Trust, Mistrust, and Credulity Questionnaire (ETMCQ) (Campbell et al., 2021). This subscale comprises five questions, with participants rating each on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Higher scores on the epistemic mistrust scale indicate greater levels of epistemic mistrust. Campbell et al. (2021) have documented adequate psychometric properties for the scale. However, a German validation is under development (Nolte et al., under review) and not yet available. In this study, the internal consistency was modest ($\omega = 0.51$), which might be seen as marginally acceptable considering the scale's brevity. A confirmatory factor analysis (CFA) affirmed the subscale's internal structure, with all model fit indices falling within satisfactory limits ($\chi^2(5, 382) = 1.343$, $p = .930$, $RMSEA = 0.000$ [0.000–0.021], $CFI = 1.000$, $SRMR = 0.013$), and all five items significantly contributing to the latent factor.

2.2.4. Childhood maltreatment

Childhood maltreatment was assessed with the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003) in its German version (Wingenfeld et al., 2010). The CTQ is a well-established self-report tool consisting of 28 items that explore various forms of abuse during childhood (physical abuse, sexual abuse, emotional abuse, physical and emotional neglect). While self-reports are a widely used and practical method in this field, they are subject to potential biases, including the influence of retrospective recall and current cognitive states on the accuracy of reported experiences. Each subscale of the CTQ includes five items with responses provided on a five-point scale ranging from 1 (never true) to 5 (very often true). In this study, higher scores indicated a more severe history of maltreatment in childhood. The subscales demonstrated acceptable internal consistency, appropriate for the scale's length, as detailed in Table 1 (ranging from $\omega = 0.63$ to $\omega = 0.86$). The distributions for the scale's responses deviated from normality (all subscales: Kolmogorov–Smirnov test: $p < .05$). A CFA employing the CTQ's five subscales as manifest indicators verified the internal structure of this latent construct, with all model fit indices being satisfactory ($\chi^2(3, 382) = 1.112$, $p = .774$, $RMSEA = 0.000$ [0.000–0.057], $CFI = 1.000$, $SRMR = 0.010$).

2.3. Data analytic plan

The study ensured completeness of data by requiring responses to each item, leading to no instances of missing information. However, the dataset did include 22 multivariate outliers, identified through Mahalanobis distance, which were removed from all analyses using the chi-square test ($p \leq .001$) (Tabachnick & Fidell, 2012). The sample size ($N = 382$) was determined based on established recommendations for structural equation modeling (SEM). The model included 25 freely estimated parameters, for which guidelines suggest a minimum of 10 to 20 participants per parameter (Bentler & Chou, 1987). This corresponds to a required sample size of 250 to 500 participants to ensure statistical power and precision for detecting medium effect sizes. Given the presence of multivariate normality violations as determined by Mardia's test, we employed the maximum likelihood estimation method with robust standard errors, enhanced by 10,000 bootstrap samples for accuracy. Structural equation modeling (SEM) was the chosen method for testing the hypotheses, with "childhood maltreatment" as the exogenous variable and "impairments in mentalizing" as the endogenous variable. "Epistemic mistrust" and "attachment insecurity" were included in the model as mediating variables.

For model evaluation, we relied on several fit indices (Hu & Bentler, 1999): (1) the χ^2 statistic, (2) the root mean square error of approximation ($RMSEA$) along with its 90 % confidence interval (CI), (3) the comparative fit index (CFI), and (4) the standardized root mean square residual (SRMR). Criteria for an excellent model fit include a non-significant chi-square statistic, $RMSEA \leq 0.06$, $CFI \geq 0.95$, and $SRMR \leq 0.06$. An acceptable fit is characterized by a non-significant χ^2 statistic, $RMSEA \leq 0.08$, $CFI \geq 0.90$, and $SRMR \leq 0.08$. Furthermore, due to the sample size, a significant χ^2 statistic was expected (Weiber & Sarstedt, 2021). Direct and mediation effects were assessed using the bootstrap confidence interval method.

3. Results

Descriptive statistics and the relationships between variables are detailed in Table 1. Experiences of emotional abuse, physical abuse, and physical neglect showed significant positive correlations with impairments in mentalizing. Epistemic mistrust and both types of attachment insecurity were positively linked to emotional abuse, emotional neglect and physical neglect, as determined by robust correlation analyses. Additionally, a positive association between attachment-related anxiety and physical abuse was found. In contrast, sexual abuse did not exhibit significant links with impairments in mentalizing, epistemic mistrust, or attachment insecurity.

Table 1
Descriptives and intercorrelations.

	1 CTO_EA	2 CTQ_PA	3 CTQ_SA	4 CTQ_EN	5 CTQ_PN	6_RFQ	7_EM	8_ECR_Anx	9_ECR_Avoi
1 CTO_EA	–								
2 CTQ_PA	0.34***	–							
3 CTQ_SA	0.16**	0.19***	–						
4 CTQ_EN	0.59***	0.23***	0.15*	–					
5 CTQ_PN	0.43***	0.19***	0.10	0.58***	–				
6_RFQ	0.17***	0.10*	0.00	0.09	0.15**	–			
7_EM	0.25***	0.09	0.02	0.16**	0.11*	0.32***	–		
8_ECR_Anx	0.19***	0.13*	0.08	0.28***	0.21***	0.19***	0.18**	–	
9_ECR_Avoi	0.12***	−0.03	−0.04	0.29***	0.22***	0.12*	0.17**	0.43***	–
M (SD)	7.99 (3.39)	5.34 (1.01)	5.50 (1.19)	8.18 (3.28)	3.68 (1.27)	15.88 (4.92)	16.18 (4.37)	10.33 (5.23)	8.15 (4.11)
ω	0.82	0.63	0.68	0.86	0.64	0.67	0.51	0.75	0.78
Skewness	1.48	3.79	2.70	1.38	2.55	0.09	0.21	0.71	1.21
Kurtosis	1.60	15.62	7.10	2.00	7.45	−0.45	−0.35	−0.22	1.02

Note. $N = 382$. CTQ = Childhood Trauma Questionnaire. CTQ_EA refers to the emotional abuse subscale of the CTQ. CTQ_PA refers to the physical abuse subscale of the CTQ. CTQ_SA refers to the sexual abuse subscale of the CTQ. CTQ_EN refers to the emotional neglect subscale of the CTQ. CTQ_PN refers to the physical neglect subscale of the CTQ. RFQ = Reflective Functioning Questionnaire. EM refers to the epistemic mistrust subscale of the ETMCQ. ECR = Expectations in Close Relationships – Revised Questionnaire. ECR_ANX refers to the attachment related anxiety subscale of the ECR. ECR_AVOI refers to the attachment related avoidance subscale of the ECR. All correlation coefficients were estimated using a distribution-free measure (Spearman). *** $p < .001$, ** $p < .01$, * $p < .05$.

Furthermore, epistemic mistrust, both kinds of attachment insecurity, and impairments in mentalizing were mildly positively correlated with each other. Notably, the descriptive statistics also revealed that instances of childhood abuse were, on average, minimally reported within the sample.

Figure 1 illustrates the structural equation model. The data demonstrated a good fit with the hypothesized model, as indicated by all fit indices falling within acceptable thresholds (χ^2(210, 382) = 367.165, $p < .001$, *RMSEA* = 0.044 [0.037–0.052], *CFI* = 0.924, *SRMR* = 0.069). Utilizing 10,000 bootstrap samples, in the final model significant positive associations were identified between childhood maltreatment and both epistemic mistrust ($\beta = 0.32$ [0.17–0.46], $p = .001$) and attachment insecurity ($\beta = 0.29$ [0.18–0.40], $p < .001$). However, no direct links were found between impairments in mentalizing and either a history of childhood maltreatment ($\beta = -0.07$ [-0.19–0.04], $p = .297$) or attachment insecurity ($\beta = -0.02$ [-0.17–0.10], $p = .729$). Epistemic mistrust was directly associated with impaired mentalizing in a positive manner ($\beta = 0.54$ [0.39–0.70], $p < .001$), and attachment insecurity was positively linked with epistemic mistrust ($r = 0.32$ [0.18–0.45], $p < .001$). The relationship between childhood maltreatment and impairments in mentalizing was entirely mediated by epistemic mistrust ($\beta = 0.17$ [0.08–0.28], $p = .001$), while attachment insecurity did not mediate this relationship due to its lack of direct association with ineffective mentalizing. Overall, the model explained 26.3 % of the variance in impairments in mentalizing.

4. Discussion

Considering the developmental framework of mentalizing capacity outlined by (Fonagy et al., 1991, 2002, 2015, 2017a, Fonagy et al., 2022; Fonagy, Luyten, Allison, & Campbell, 2017b, 2019), the aim of this exploratory study was to assess the theory's validity through self-reported data from a community sample of primarily young adults who were recruited from various university courses in Germany and Switzerland. Specifically, the study investigated whether a history of childhood maltreatment, attachment insecurity, and epistemic mistrust could act as predictors of ineffective mentalizing in this population by assessing associations between the relevant constructs. Previous research has noted links between these variables, but a comprehensive evaluation incorporating all in a singular model has yet to be conducted. It is important to acknowledge that the cross-sectional nature of the data precludes causal inferences regarding the mediational relationships examined in this study. While our findings align with existing theoretical frameworks, they should be interpreted as exploratory. Longitudinal studies are required to confirm these relationships and establish causality.

Hypothesis 1 posited a direct positive relationship between experiences of childhood maltreatment and mentalizing deficits. However, this hypothesis must be reconsidered, as the structural equation model's results did not identify a significant direct connection between these elements when mediating variables were included. This outcome challenges the conclusions of various studies that have indicated a direct influence of childhood maltreatment on mentalizing impairments (e.g., Chiesa & Fonagy, 2014; Ensink et al., 2016, 2017; Rosso, 2022; Taubner et al., 2016; Yang & Huang, 2024). According to the theory of mentalizing, experiences of childhood maltreatment could interfere with the development of mentalizing abilities by fostering a hostile and threatening environment for intersubjective experiences (Fonagy et al., 2002). Specifically, the distressing recognition of one's mental states and those of the perpetrator becomes skewed due to the intense nature of these experiences, especially if the perpetrator's intentions are acknowledged (Allen et al., 2008). This defensive distortion may then support the preservation of a vulnerable self-concept despite distressing conditions. Therefore, the inability to confirm a direct link in this study is unexpected, considering both the theoretical underpinnings (Fonagy et al., 2002) and current empirical evidence (e.g., Chiesa & Fonagy, 2014; Ensink et al., 2016, 2017; Rosso, 2022; Taubner et al., 2016; Yang & Huang, 2024).

Nonetheless, recent research suggests a more intricate relationship between a history of childhood maltreatment and mentalizing. For instance, Garon-Bissonnette et al. (2023) observed no direct link between mentalizing and maltreatment once educational level was accounted for. However, the authors found evidence for specific mentalizing difficulties concordant with prementalizing modes such as disrupted, inconsistent or overanalytical mental state reasoning in the context of childhood maltreatment. These findings highlight the necessity for additional research to clarify this relationship. Moreover, it is important to note that our study's conclusions are drawn from a sample of university students who self-reported a generally low exposure to childhood maltreatment, which could also have affected the observed outcomes. Importantly, both theoretical formulations and previous reported associations between mentalizing deficits and childhood maltreatment are largely based on high-risk samples.

Hypothesis 2 anticipated an indirect link from childhood maltreatment to deficits in mentalizing mediated by the participants' attachment insecurity. Although this study confirmed a positive association between experiences of childhood maltreatment and attachment insecurity, consistent with conclusions from various meta-analyses (e.g., Baer & Martinez, 2006; Lo et al., 2019), attachment insecurity did not demonstrate a connection to mentalizing deficits in the final analysis. Thus, the proposed mediation model, suggesting that childhood maltreatment leads to mentalizing deficits through attachment insecurity, was not supported. This outcome diverges from the extensive body of research establishing a link between attachment insecurity and mentalizing impairments (e.g., Fonagy et al., 1991; Slade et al., 2005). Nonetheless, some studies align with our findings. For example, Taubner et al. (2016) found a positive correlation between a history of maltreatment and attachment insecurity in 161 adolescents, which did not extend to their mentalizing capabilities. Consequently, these findings may challenge the previously asserted critical role of the attachment relationship in the development of mentalizing impairments within the context of childhood maltreatment experiences, a perspective initially posited as fundamental within the mentalizing framework (Fonagy et al., 2002; Fonagy & Target, 1997). Therefore, the necessity for further research using longitudinal data, incorporating more sophisticated designs and focusing on early attachment relationships, is highlighted by these results.

Hypothesis 3, which suggested that the relationship between a history of childhood maltreatment and mentalizing limitations is
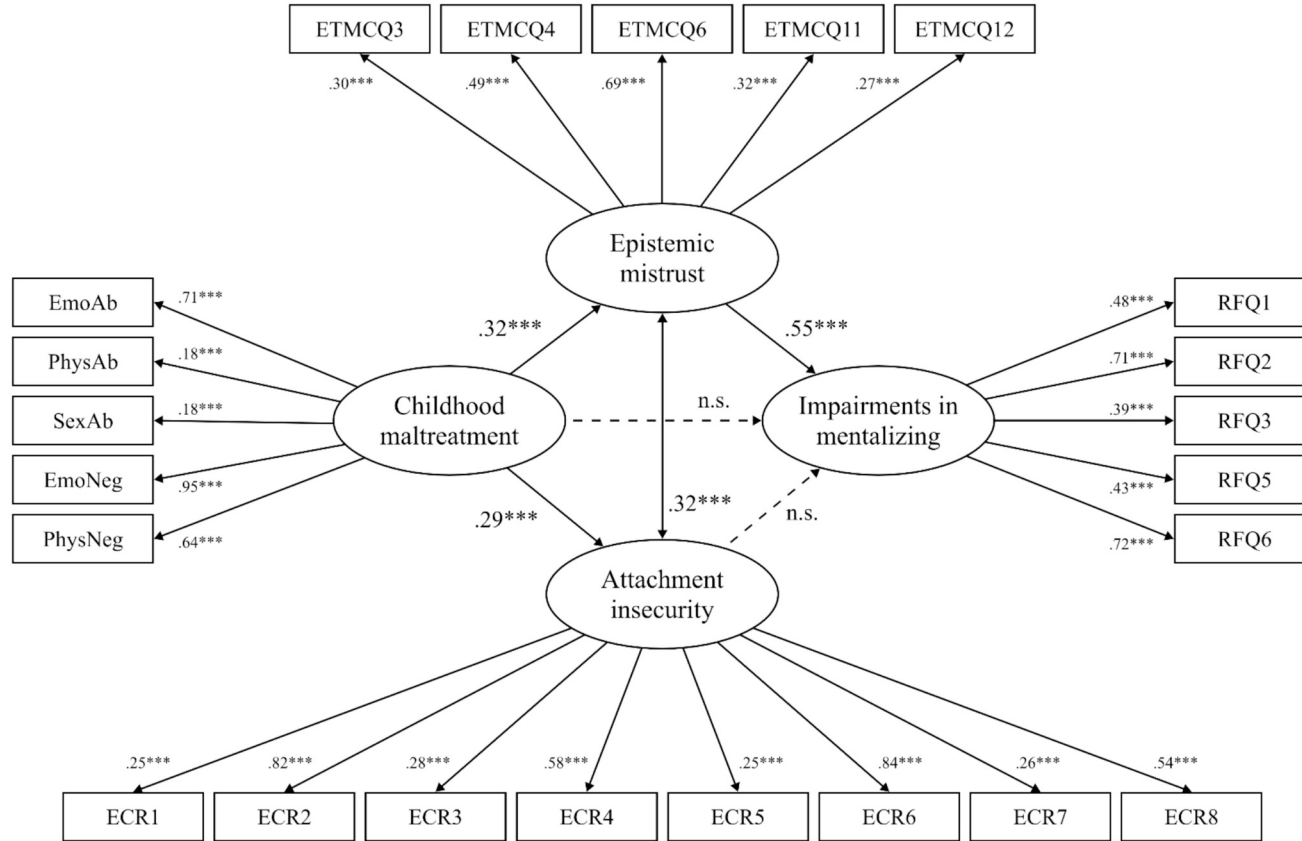
Fig. 1. Structural equation model.
Note: $N = 382$. *** $p < .001$, ** $p < .01$, * $p < .05$.

mediated by participants' epistemic mistrust, received support from the structural equation model. The analysis showed that epistemic mistrust entirely mediated this relationship, explaining the absence of a direct significant connection between the severity of maltreatment experienced and mentalizing impairments in the final model. These results are consistent with other research indicating that childhood maltreatment correlates with increased epistemic mistrust (Kampling et al., 2022), and that such mistrust, in turn, is associated with mentalizing difficulties (Riedl et al., 2023). Furthermore, these findings correspond with the theoretical model suggested by Fonagy et al. (2017b, 2022), which posits that persistent epistemic disruption, manifesting as mistrust, hinders the assimilation of socially mediated insights. This obstruction to openness undermines the ability to mentalize, crucial for processing socially mediated information effectively (Luyten et al., 2020).

Overall, the aim of this exploratory study was to empirically test the developmental framework of mentalizing impairment proposed by Fonagy and colleagues (1991, 2002, 2015, 2017a, 2017b, 2019, 2022), utilizing cross-sectional data from a community sample of primarily young adults. This initial exploration is vital given the established importance of mentalizing for mental health and resilience in both theoretical discussions (Fonagy et al., 1994; Katznelson, 2014) and empirical studies within clinical (e.g., Fischer-Kern et al., 2013, 2022; Johnson et al., 2022; Németh et al., 2018; Perroud et al., 2017) and non-clinical populations (e.g., Adler et al., 2020; Berthelot et al., 2019; De Coninck et al., 2021). While causal inferences are constrained by the cross-sectional design of this research, our findings are consistent with recent advancements in mentalizing theory, elucidating the relationship between childhood maltreatment and mentalizing limitations.

However, the pathway identified in our study appears to be more intricate and possibly affected by mediating variables, as evidenced by the absence of a direct connection in the final model when both core factors—attachment insecurity and epistemic mistrust—were included simultaneously. This result aligns with findings from recent studies that arrive at similar conclusions (e.g., Garon-Bissonnette et al., 2023). It appears overly simplistic to assume a direct translation of childhood maltreatment into ineffective mentalizing, as reflected in the modest negative correlation between experiences of childhood maltreatment and impairments in mentalizing (Yang & Huang, 2024). Furthermore, the results seem to be influenced by the type of operationalization chosen, adding to the complexity. Many methods of assessing mentalizing rely on global sum scores, which do not allow for a more nuanced understanding of the quality of the impairments. Moreover, our analysis reveals that in the final model, participants' attachment insecurity concerning romantic relationships was not associated with mentalizing impairments once epistemic mistrust was introduced as an additional mediator. Echoing Luyten et al. (2020), the principle that both typical and atypical mentalizing developments unfold within the context of attachment relationships has been fundamental to mentalizing theory since its early days (e.g., Fonagy et al., 1991, 2002). Although recent studies have confirmed significant, albeit generally moderate, links between parental attachment, their mentalizing capabilities, and their child's mentalizing skills (Zeegers et al., 2017), the observation by Fonagy and Campbell (2015) that there may be an overemphasis on the dyadic attachment relationship in mentalizing development seems pertinent. They argue that restrictions in socio-cultural communication, marked by mistrust, withdrawal and thus leading to epistemic isolation, could underpin the emergence of psychopathological conditions and ineffective mentalizing (Fonagy et al., 2022). Epistemic mistrust, originating from early adversity, is characterized by a view of others as unreliable or ill-intended (Campbell et al., 2021). Consequently, the acquisition of socially mediated knowledge, vital for the cultivation of emotional-social competencies such as mentalizing, is compromised, a conclusion supported by the outcomes of this investigation.

A more detailed examination of the relationships between mentalizing, epistemic trust, and various forms of abuse and neglect also suggests that it might be worthwhile to specify these relationships more precisely in future studies. The results appear to indicate a slightly stronger association between emotional maltreatment, impairments in mentalizing, and epistemic mistrust. These assocations are not surprising in the context of current discourses—several authors argue that emotional maltreatment represents the foundational form of maltreatment underlying all other forms and thus precedes physical or sexual abuse (e.g., Taillieu et al., 2016). Nevertheless, the relationships identified here should be interpreted with caution—for example, sexual and physical abuse are generally underrepresented in the current sample, which could lead to an underestimation of these relationships and indicates the need for studies with more heterogeneous and moderate to high-risk samples in longitudinal research designs.

4.1. Limitations

Several key limitations must be acknowledged in interpreting the results of this exploratory study. The participant pool was notably homogeneous, primarily comprising female, well-educated university students, with reported experiences of childhood maltreatment lower than those typically observed in clinical cohorts. Furthermore, the sample was selected randomly across various university courses, reducing the generalizability of these findings. Additionally, while participants were recruited from both Germany and one German-speaking university in Switzerland, the small number of Swiss participants ($n = 15$) precluded formal testing for geographical invariance. However, as all participants were university students from German-speaking institutions pursuing degrees in similar educational fields, substantial geographical biases are unlikely. Future studies with more balanced samples could explore the potential influence of such factors.

The reliance on a university student sample particularly limits the generalizability of the findings. This specific group, while relevant for initially exploring the proposed interplay between childhood maltreatment, attachment insecurity and epistemic trust in the context of impairments in mentalizing (Fonagy et al., 1991, 2002, 2015, 2017a, 2017b, 2019, 2022), is not representative of the broader population or clinical groups who may have experienced more severe or diverse forms of maltreatment. It should be noted that all participants were students in educational sciences programs—a very specific group of individuals whose studies are focused on developing a professional and reflective mindset. Thus, to enhance the external validity of these results, future studies should aim to replicate this research across more diverse populations, including clinical groups, to expand the range of observed variance.

Additionally, there is a pressing need to further investigate the psychometric qualities of the epistemic mistrust subscale from the Epistemic Trust, Mistrust, and Credulity Questionnaire (ETMCQ) utilized here. A MacDonald's omega (ω) of 0.51 indicates poor reliability, underscoring the necessity for more rigorous assessment of the questionnaire's psychometric performance in subsequent research. Additionally, the original factor structure of the RFQ has been questioned in recent studies. As an alternative, these studies recommend using the RFQ as a unidimensional scale (Müller et al., 2022; Ruiz-Parra et al., 2023; Spitzer et al., 2021; Woźniak-Prus et al., 2022). However, even in this case, further psychometric specifications are required. For example, while Müller et al. (2022) and Spitzer and colleagues (2021) recommend using a total of six items, the present study found that a five-item version better matched the data overall.

On a global perspective, the capability of brief self-report tools to fully capture the nuances of complex constructs such as ineffective mentalizing, attachment insecurity, or epistemic mistrust remains uncertain. Self-report questionnaires also introduce potential biases, particularly in assessing retrospective experiences of childhood maltreatment. Such biases may affect the accuracy of participants' recollections of attachment experiences or their ability to report on mentalizing abilities. Future research should incorporate alternative operationalizations such as interviews or performance to address these limitations and provide a more nuanced understanding of these constructs, particularly to reduce shared method variance. Due to its cross-sectional nature, this exploratory study cannot support causal conclusions, representing a significant limitation of the findings. This issue is particularly relevant in the context of mediation analyses, which inherently imply causality. Although the mediational pathways align with theoretical frameworks, they should be interpreted as exploratory only. Longitudinal studies are necessary to validate the observed relationships and establish causal pathways.

4.2. Implication

This study underscores the potential significance of epistemic mistrust in enhancing the efficacy of psychotherapeutic and psychosocial interventions aimed at fostering effective mentalizing. As Fonagy and Allison (2014) suggest, reducing epistemic mistrust is crucial for re-engaging with socially mediated knowledge. According to Fonagy et al. (2019), a fundamental step towards lowering epistemic mistrust involves ensuring individuals feel seen and recognized as beings with a subjectively meaningful psychological existence—that is, to be mentalized. This insight may inform the design and delivery of interventions focused on improving compromised mentalizing, highlighting epistemic mistrust as a vital element in the success of psychosocial interventions.

In view of future research, it is essential to address the developmental ambiguity surrounding the sequence of epistemic mistrust and limitations in mentalizing. This study views ineffective mentalizing as an outcome and suggests that it emerges from heightened epistemic mistrust. However, it is conceivable that the causality runs in the opposite direction—for instance, some might argue that limitations in mentalizing can lead to epistemic disruption including mistrust. To shed light on this relationship, further research is needed in order to investigate the interrelations between epistemic mistrust and ineffective mentalizing through longitudinal data that permit causal interpretations.

CRediT authorship contribution statement

Nicola-Hans Schwarzer: Writing – original draft, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Nöelle Behringer:** Writing – review & editing. **Paula Dees:** Writing – review & editing. **Stephan Gingelmaier:** Writing - review & editing, Conceptualization. **Melanie Henter:** Writing – review & editing. **Holger Kirsch:** Writing – review & editing, Conceptualization. **Tillmann Kreuzer:** Writing – review & editing. **Robert Langnickel:** Writing – review & editing. **Pierre-Carl Link:** Writing – review & editing. **Sascha Müller:** Writing – review & editing. **Agnes Turner:** Writing – review & editing. **Peter Fonagy:** Writing – review & editing. **Tobias Nolte:** Writing - review & editing, Conceptualization.

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

No generative AI was used.

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Declaration of competing interest

The authors declare that they have no competing interests.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chiabu.2025.107436.

Data availability

Data and code will be made available by request. Please contact the first author.

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