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Linking mentalizing capacity, shame, and depressive symptoms in the context of childhood maltreatment

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ABSTRACT

Background: Experiences of childhood maltreatment have been shown to be a crucial predictor of depressive symptoms.
Objective: This study investigated the association between a history of maltreatment and depressive symptoms in a mixed sample of adults, exploring whether feelings of shame and impairments in mentalizing mediate this association and potentially represent health-affecting factors associated with an increase in depressive symptoms. Further, the association between feelings of shame and depressive symptoms was expected to be moderated by impairments in mentalizing.
Participants and setting: A mixed sample of 796 adults, including clinical and non-clinical participants, completed questionnaires assessing retrospectively rated experiences of childhood maltreatment, feelings of shame, mentalizing capacities, and current depressive symptoms in a cross-sectional design.
Methods: The hypotheses were tested using structural equation modelling.
Results: Associations were found between childhood maltreatment, feelings of shame, impairments in mentalizing, and depressive symptoms. Impairments in mentalizing and feelings of shame partially mediated the link between maltreatment and depressive symptoms. However, impairments in mentalizing did not moderate the link between shame and depressive symptoms.
Conclusion: The current study provides evidence for the role of metacognitive processes that affect mental health problems in the domain of depression. Psychological treatments that promote mentalizing capacities might be helpful in reducing feelings of shame, and consequently in reducing depressive symptoms.

1. Introduction

Maltreatment in childhood is a common global problem, as data from *meta*-analyses suggest (Stoltenborgh et al., 2011; 2012; Stoltenborgh, Bakermans-Kranenburg, van IJzendoorn, & Alink, 2013). Childhood adversity includes all types of physical and emotional abuse, sexual abuse, and physical and emotional neglect of children and adolescents under the age of 18, and/or their exploitation by parents or other close caregivers (Butchart & Phinney Harvey, 2006; Cicchetti & Toth, 2005). A history of maltreatment is associated with a wide range of negative outcomes in adulthood, such as increased aggressive behavior (Shackman & Pollak, 2014), cognitive difficulties (Hart & Rubia, 2012), delinquency (Duke et al., 2010), insecure attachment styles (Riggs & Kaminski, 2010), inappropriate sexualized behavior (Frederico et al., 2008), bipolar disorders (Etain et al., 2010), and several neurophysiological changes affecting key brain circuitry (e.g. van Harmelen et al.,

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2010).

Experiences of maltreatment in childhood have been demonstrated to be a predictor of depressive symptoms in both retrospective (Hovens et al., 2010; Infurna et al., 2016) and prospective (Brown et al., 1999; Widom et al., 2007) studies. Using data from 184 studies, Nelson et al. (2017) reported that nearly half of all patients with depressive disorders had experienced maltreatment and abuse during childhood. Moreover, their analyses suggest that childhood maltreatment increases the likelihood of depression by a factor of 2.66. In addition, experiences of maltreatment affect the course of depressive disorders: a history of abuse is associated with earlier onset of depression, more depressive episodes, and higher symptom loads in patients with depressive disorders (Nanni et al., 2012; Nelson et al., 2016).

In view of these results, there is a need to identify processes that may affect the association between childhood maltreatment and depression, since a mechanistic understanding of these processes could guide the development of more tailored interventions that decrease the risk of development of serious depressive symptoms. This is of particular interest because depressive disorders are widespread both in adolescents (Polanczyk et al., 2015) and adults (Wittchen et al., 2011), with high rates of chronicity (Segal et al., 2003) and serious consequences such as suicidality (Chesney et al., 2014), as well as leading to high societal economic costs (Donohue & Pincus, 2007). Moreover, psychotherapeutic interventions seem to be less effective in patients with depressive disorders compared to other psychological disorders – only about 50 % of these patients benefit from psychotherapeutic treatment (Cuijpers et al., 2010).

Strong feelings of shame have been shown to be a important predictor of depressive symptoms (Cheung et al., 2004; Kim et al., 2011). While shame is a common mental state experienced by humans, intense feelings of shame reflect a sense of negative evaluation by another person who is experienced as more powerful, leading to strong feelings of anger, helplessness, and inferiority (Goss et al., 1994). Consequently, strong feelings of shame refer to a conglomerate of "affective-cognitive states in which embarrassment, mortification, humiliation, feeling ridiculed, chagrin, disgrace and shyness are among the variants" (Lewis, 1986, p. 329). By this definition, strong feelings of shame can be conceptualized as a result of distorted metacognitive processes including complex and interwoven evaluations of both the self and others, in which the suspected judgements of others are a central issue, initially leading to feelings of being negatively evaluated and consequently affecting the evaluation of the self in a negative way (Goss et al., 1994).

Several studies report associations between a history of maltreatment and feelings of shame, with more severe experiences of maltreatment causing stronger feelings of shame (Alix et al., 2017; Ellenbogen et al., 2015; Kealy et al., 2018). Regarding both the link between experiences of maltreatment and feelings of shame and the associations between extensive feelings of shame and stronger depressive symptoms, feelings of shame might serve as a mediating state of mind, depending on serious but aversive experiences of childhood maltreatment and thus influencing the development of psychopathological problems such as depressive symptoms.

Another candidate factor, which might affect the relationship between maltreatment and depressive symptoms, is the individual's capacity to mentalize—that is, the imaginative ability to perceive and understand behaviors in terms of intentional mental states (Fonagy & Allison, 2014; Fonagy et al., 1991). While genuine mentalizing encompasses a range of metacognitive processes such as empathy, mindfulness, self-monitoring, and Theory of Mind, which are integrated into a coherent understanding of the self and other people (Choi-Kain & Gunderson, 2008; Fonagy et al., 2002), difficulties in mentalizing are characterized by an unbalanced and ineffective use of mental-state reasoning (Luyten et al., 2020). Mentalizing is conceptualized as a developmental achievement (Fonagy et al., 2002). In particular, sensitive relationships with close caregivers are viewed as an important learning environment in which children acquire the capacity to perceive and interpret behavior as underpinned by mental states (Fonagy et al., 2002; 1991; Luyten et al., 2017).

Experiences of maltreatment by close caregivers can severely affect the development of an effective mentalizing capacity, leading to higher levels of uncertainty in using mental states as reliable information (Badoud et al., 2018; Borelli et al., 2018; Fonagy et al., 1991). Children who have grown up in a physically and emotionally hostile environment see themselves as undesirable, hated, and threatened, which can lead to crucial changes in developmental processes. The capacity to perceive one's own mental states (e.g. fear) and the mental states of the abuser (e.g. the wish to hurt the child) develop in a distorted manner in order to maintain a coherent self-experience despite the physically and emotionally hostile environment (Fonagy et al., 2002; Luyten et al., 2020).

Impaired or ineffective mentalizing is associated with a variety of mental health problems (Katznelson, 2014), such as borderline personality disorder (Németh et al., 2018), antisocial personality disorder (Newbury-Helps et al., 2017), or affective disorders. For instance, studies showed impairments in the capacity to mentalize in people with depressive disorders, both on a global level (Fischer-Kern et al., 2013; 2021; Rothschild-Yakar et al., 2019) and with regard to individual issues such as loss or rejection (Fischer-Kern et al., 2021; Staun et al., 2010; Taubner et al., 2011). Furthermore, impaired mentalizing may serve as a mediating state of mind that affects the association between childhood maltreatment and outcomes such as aggression (Schwarzer et al., 2021) or depressive symptoms in adulthood, as recent data from Li et al. (2020) suggest. This is of particular interest since mentalizing in patients with mental disorders can be facilitated and improved by psychotherapeutic interventions such as mentalization-based treatment (Bateman & Fonagy, 2004), leading to an increase in mentalizing capacity (e.g. Babl et al., 2022; Fischer-Kern et al., 2015; Levy et al., 2006) and a decrease in psychological problems (e.g. Babl et al., 2022; Bateman & Fonagy, 1999, 2008, 2009; Bateman et al., 2016; De Meulemeester et al., 2018; Jørgensen et al., 2013; Rossouw & Fonagy, 2012).

1.1. The current study

In light of the results from studies examining the associations between childhood maltreatment and depressive symptoms, dysfunctional metacognitive processes such as impairments in mentalizing, and also feelings of shame, may play a major role in the development of depressive symptoms, with both leading to more severe symptoms. With regard to this approach, studies have emphasized mentalizing as a resilience-promoting mediator (Borelli et al., 2019; Brugnera et al., 2021; Chiesa & Fonagy, 2014; Huang et al., 2020), hypothesizing that effective mentalizing supports individuals in coping with stress-affected arousal by enabling them to integrate and reappraise past distressing events as in the context of childhood maltreatment (Fonagy et al., 2017; Luyten et al., 2020). With reference to this hypothesis, a recently published study on community participants by Li et al. (2020) established for the first time a link between emotional abuse in childhood and depressive symptoms in adulthood that was mediated by mentalizing capacity.

Nevertheless, the above-mentioned studies have some limitations, which the current study aims to address. First, a replication of the findings by Li et al. (2020) in a larger and clinical sample is required to obtain robust evidence confirming mentalizing as a potential mediator. Moreover, in the current study feelings of shame are introduced as a second mediating state of mind within this framework, since strong associations between childhood maltreatment and feelings of shame (Alix et al., 2017; Ellenbogen et al., 2015; Kealy et al., 2018), and between feelings of shame and depressive symptoms (Cheung et al., 2004; Kim et al., 2011), do exist. Furthermore, feelings of shame might at least partially represent a downstream result of ineffective metacognitive processes, as they are conceptualized as maladaptive evaluations of both the self and other people (Goss et al., 1994). Consequently, strong

feelings of shame encompass some sort of negative appraisal that is the result of dysfunctional metacognitive processes such as impaired mentalizing, largely caused by harsh environmental conditions in childhood (Badoud et al., 2018; Borelli et al., 2018).

Therefore, we expect a sequence of effects that could lead to depressive symptoms and at least partially explain their pathogenic associations (Fig. 1). In detail, we hypothesize that childhood maltreatment directly leads to the development of depressive symptoms and is also associated with feelings of shame. Further, we expect that experiences of maltreatment lead to compromised mentalizing, which in turn causes feelings of shame—a pathway that to the best of our knowledge has not been tested empirically. These imbalanced, negatively distorted representations of the self as devalued, humiliated, and disgraced (Goss et al., 1994; Lewis, 1986) can then lead to severe depressive symptoms, as shown by previous studies (Kim et al., 2011; Cheung et al., 2004). This hypothesized framework suggests that, due to the impaired capacity to mentalize, the integration of aversive experiences such as childhood maltreatment could not succeed.

Finally, impairments in mentalizing and feelings of shame might interact in a multiplicative way. Within this approach, the imagined self that is represented in other people's minds is negatively distorted due to greater deficits in mentalizing which strengthen the association between feelings of shame and depressive symptoms, with stronger deficits in mentalizing causing more severe depressive symptoms. Even though no such association has been investigated thus far, findings of Taubner et al. (2013) concerning psychopathic traits and proactive aggression at least point into this direction. Taubner et al. (2013) found that mentalizing moderated the association between psychopathic traits and aggressive behavior in adolescents: adolescents who had greater psychopathic tendencies did not report increased aggression when they also had higher mentalizing capacities. In detail, we investigated following hypotheses:

Hypothesis 1: Childhood maltreatment predicts depressive symptoms in adulthood, promoting the development of current depressive symptoms.

Hypothesis 2: Impairments in mentalizing will directly promote current feelings of shame.

Hypothesis 3: A history of abuse has indirect effects on depressive symptoms via impairments in mentalizing and feelings of shame.

Hypothesis 4: The association between feelings of shame and depressive symptoms is moderated by impairments in mentalizing, with greater deficits in mentalizing causing more severe depressive symptoms.

2. Method

2.1. Procedure

The data set used in this cross-sectional study is part of a research program entitled *Probing Social Exchanges – A Computational Neuroscience Approach to the Understanding of Borderline and Anti-Social Personality Disorders*. The research program was approved by the Research Ethics Committee of Wales (12/WA//0283.). After giving written informed consent, all participants completed a battery of questionnaires to assess their mentalizing capacities, feelings of shame, current depressive symptoms, and experiences of childhood maltreatment.

2.2. Participants

After excluding multivariate outliers, the sample consisted of a total of 796 participants (555 (69.7 %) female, 241 (30.3 %) male; age 18–65 years; mean = 30.66; *SD* = 10.26). To increase the variance of the data and thus the relevance of the results, a mixed sample was recruited, and several sample sources were used. Overall, 357 participants (289 (81 %) female, 68 (19 %) male; age 18–58 years; mean = 30.64; *SD* = 9.57) met the DSM-IV criteria for borderline personality disorder (BPD), and 47 participants (4 (8.5 %) female, 43 (91.5 %) male; ages 19–65 years; mean = 36.68; *SD* = 12.41) met criteria for antisocial personality disorder (ASPD). The patients with BPD or ASPD were recruited through specialist personality disorder services of several Greater London NHS Mental Health Trusts. In addition, 153 participants referred for treatment of affective disorders were recruited from Improving Access to Psychological Treatment (IAPT) services (112 (73.2 %) female, 41 (26.8 %) male; age 18–56 years; mean = 30.25; *SD* = 9.57) from two London NHS Mental Health Trusts, and 239 community controls (150 (62.8 %) female, 89 (37.2 %) male; age 18–62 years; mean = 29.76; *SD* = 10.87) were recruited through community settings (job centers, universities, notice boards). Patients with BPD or ASPD were interviewed by psychiatrists or clinical psychologists using the Structured Clinical Interview for DSM-IV Axis II Diagnoses (SCID-II) (First et al., 1997). Additional SCID-II interviews were conducted with those patients and community controls who met personality screening threshold criteria via the Standardized Assessment of Personality – Abbreviated Scale (Moran et al., 2003). To increase the validity of SCID-II ratings, experienced senior researchers supervised the process in conferences. English-language fluency was a criterion for inclusion, whereas learning disabilities, neurological disorders, or psychotic episodes led to participants being excluded. No significant age differences between patients and community controls were found ($\chi^2 = 2.63$; $p = 0.106$). There was a slight difference in the gender balance between patients and community controls ($\chi^2 = 7.86$; $p = 0.020$). Further, significant differences between the patients and the community controls in all other variables were

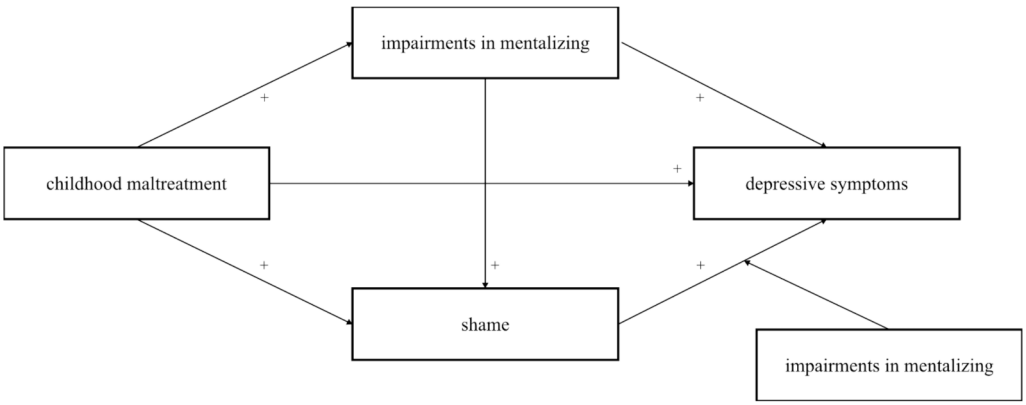

Fig. 1. Hypothesized model.

found (see: Electronic Supplement).

2.3. Measures

2.3.1. Childhood maltreatment

The Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003) was used to assess retrospective experiences of childhood maltreatment. The CTQ is a widely used self-report measure that asks the participants to answer 28 statements on a five-point Likert scale, ranging from 1 (*Never true*) to 5 (*Very often true*). In detail, the CTQ encompasses five different scales—physical abuse (e.g. I was punished with a belt, a board, a cord), sexual abuse (e.g. Someone tried to make me do sexual things or watch sexual things), emotional abuse (e.g. People in my family said hurtful or insulting things to me), physical neglect (e.g. I had to wear dirty clothes), and emotional neglect (e.g. There was someone in my family who helped me feel important of special (reverse coded))—which can be further summed into one global severity index. High scores reflect severe experiences of maltreatment during childhood. Bernstein et al. (2003) reported good psychometric characteristics, which were confirmed by this study: Cronbach's alpha and MacDonald's omega for the entire scale ($\alpha = 0.91$; $\omega = 0.93$) and for all subscales ($\alpha = 0.76$–0.95; $\omega = 0.76$–0.96) can be considered acceptable.

2.3.2. Shame

To assess feelings of shame, the Other as Shamer Scale (OAS) (Goss et al., 1994) in a short version (OAS2) (Matos et al., 2015) was used. The OAS2 is a self-report instrument that consists of eight statements (e.g. People distance themselves from me when I make mistakes); respondents are asked to rate every item on a five-point Likert scale ranging from 0 (*Never*) to 4 (*Almost always*). High scores indicate high feelings of shame. The OAS2 can be considered as a reliable and valid measurement with excellent psychometric properties (Matos et al., 2015). In this study the internal consistency of the scale was acceptable ($\alpha = 0.95$; $\omega = 0.95$).

2.3.3. Mentalizing

Mentalizing was assessed using the eight-item version of the Reflective Functioning Questionnaire (RFQ) (Fonagy et al., 2016). The RFQ is considered to be a reliable instrument that is suitable for use in larger samples. Participants are asked to rate each of the eight statements of the RFQ on a seven-point Likert scale, ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Based on a large community sample, Spitzer et al. (2021) recommended a six-item scale that exclusively assesses uncertainty in using mental states as reliable information (e.g. I don't always know why I do what I do), which was recently replicated by Wozniak-Prus and colleagues (2022). High values of the scale indicate high uncertainty with regard to the use of mental states, representing impairments in mentalizing. In the current study the internal consistency was acceptable ($\alpha = 0.85$; $\omega = 0.86$).

2.3.4. Depressive symptoms

Current depressive symptoms were assessed using the depression subscale of the Brief Symptom Inventory (BSI) (Derogatis, 1993). Based on the intensity and frequency of depressive symptoms, participants are asked to answer a total of six statements on a five-point Likert scale, ranging from 0 (*Not at all*) to 4 (*Extremely*) (e.g. During the past 7 days, how much were you distressed by: Thoughts of ending your life). The BSI and its subscales are used worldwide for assessing the severity of psychological symptoms, with good psychometric characteristics (Derogatis, 1993). In the current study, the internal consistency of the scale can be considered good (Cronbach's $\alpha = 0.93$; $\omega = 0.94$).

2.3.5. Demographics

As demographics, gender and age were included in all further analyses.

2.4. Data analysis

Data analysis was performed using AMOS 24 and SPSS 21. Owing to their low proportion (0.26 %), missing values were implemented using the expectation–maximization algorithm (Tabachnik & Fidell, 2012). Eleven multivariate outliners were identified by using the Mahalanobis distance, and were excluded from all further analyses due to a likelihood of occurrence of $p < 0.001$ (Tabachnik & Fidell, 2012). Mardia's normalized multivariate kurtosis suggests a violation of multivariate normality (critical ratio > 1.96). Therefore, the bootstrapping maximum likelihood estimator with 10,000 bootstrap samples was used, revealing robust standard errors, which is recommended in structural equation modeling (SEM) under non-normal data conditions (Nevitt & Hancock, 2001). In a first step, the associations between all variables were explored using Pearson correlation coefficients. To test the hypothesized model, SEM (maximum likelihood estimator) was used with "childhood maltreatment" as the exogenous variable and "depressive symptoms" as the dependent variable. Both "impairments in mentalizing" and "feelings of shame" were entered as mediator variables, as well as an interaction term between RFQ and OAS2 to test for moderation. All variables—depressive symptoms, feelings of shame, impairments in mentalizing, and childhood maltreatment—were modeled as latent variables, which were tested using confirmatory factor analyses (CFA) in a first step (Anderson & Gerbing, 1988). In a second step, SEM was conducted to test the hypothesized model (Anderson & Gerbing, 1988). To evaluate the model, the following indices of fit were used (Hu & Bentler, 1999): (1) the χ^2 statistic, (2) the root mean square error of approximation (RMSEA) with its 90 % confidence interval (CI), and (3) the comparative fit index (CFI) (excellent fit: non-significant χ^2 statistic, RMSEA ≤ 0.06, CFI ≥ 0.95; acceptable fit: non-significant χ^2 statistic, RMSEA ≤ 0.08, CFI ≥ 0.90). Owing to the large sample size a significant χ^2 statistic was expected. Direct, mediation, and moderation effects were examined using the bootstrap CI method with 10,000 bootstrap samples, and 95 % CIs were analyzed. Age and gender were included in all further analyses.

3. Results

3.1. Preliminary data analysis

Descriptive statistics and intercorrelations are shown in Table 1. The data show small correlations between age, gender, and the variables of interest used in the study. Positive associations were found between impairments in mentalizing and different aspects of childhood maltreatment, as well as with feelings of shame. Depressive symptoms were positively correlated with impairments in mentalizing, feelings of shame, and maltreatment. Feelings of shame were positively correlated with both impairments in mentalizing and different aspects of maltreatment.

Before SEM was employed, each measurement model was tested in a first step. A general factor of childhood maltreatment was modeled, using the subscales of the CTQ, revealing excellent fit ($\chi^2(2, n = 796) = 2.611$, $p = 0.271$; RMSEA = 0.020, 90 % CI [0.000, 0.076]; CFI = 1.000). Depressive symptoms were derived from all items of the BSI depressive symptoms subscale, with an adequate fit ($\chi^2(5, n = 796) = 3.728$, $p = 0.589$; RMSEA = 0.000, 90 % CI [0.000, 0.042]; CFI = 1.000). A general factor of impairments in mentalizing was derived from the RFQ using the six items recommended by Spitzer et al. (2021), revealing excellent fit ($\chi^2(8, n = 796) = 15.375$, $p = 0.052$; RMSEA = 0.034, 90 % CI [0.000, 0.060]; CFI = 0.996). Feelings of shame were estimated through all items of the OAS2. The latent variable showed an adequate fit ($\chi^2(12, n = 796) = 20.887$, $p = 0.052$; RMSEA = 0.031, 90 % CI [0.000, 0.032]; CFI = 0.999). Additionally, all of the loadings of the manifest variable on the latent factors were statistically significant ($p < 0.001$).

Table 1
Descriptive statistics and correlations among study variables.

	3	4	5	6	7	8	9	10	11
1 Age	0.12***	0.05	0.11**	0.11**	0.11**	0.11**	−0.02	−0.05	−0.01
2 Sex	0.13***	0.20***	0.01	0.13***	0.11*	0.03	0.14***	0.19***	0.11**
3 CTQ	–	0.88***	0.82***	0.69***	0.80***	0.80***	0.36***	0.45***	0.44***
4 CTQ EA		–	0.66***	0.47***	0.72***	0.62***	0.40***	0.52***	0.46***
5 CTQ PA			–	0.53***	0.51***	0.61***	0.24***	0.29***	0.30***
6 CTQ SA				–	0.31***	0.39***	0.22***	0.25***	0.28***
7 CTQ EN					–	0.67***	0.31***	0.39***	0.36***
8 CTQ PN						–	0.26***	0.31***	0.32***
9 RFQ							–	0.69***	0.60***
10 OAS2								–	0.73***
11 BSI DS									–
Mean	54.27	13.40	9.00	8.48	14.20	9.19	26.24	14.93	10.82
SD	22.78	6.55	5.54	6.04	6.08	4.33	8.76	9.64	7.80
Skewness	0.79	0.32	1.45	1.66	0.05	1.21	−0.27	0.09	0.11
Kurtosis	−0.02	−1.20	1.06	1.42	−1.15	1.08	−0.76	−1.13	−1.33
α	0.91	0.90	0.89	0.95	0.91	0.76	0.85	0.95	0.93
ω	0.93	0.90	0.90	0.96	0.88	0.76	0.86	0.95	0.94

Note: N = 796. CTQ = Childhood Trauma Questionnaire, CTQ EA, CTQ PA, CTQ SA CTQ EN, and CTQ PN refer to the subscales of the CTQ. RFQ = Reflective Functioning Questionnaire. OAS2 = Other as Shamer Scale. BSI DS = Brief Symptom Inventory Depressive Symptoms subscale. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

3.2. Structural equation modelling

Fig. 2 shows a structural equation model testing the hypothesized model. The data fitted well with the model, as indicated by fit indices ($\chi^2(254, n = 796) = 725.312$, $p < 0.001$; RMSEA = 0.048, 90 % CI [0.044, 0.052]; CFI = 0.970). In the final model, covariates were excluded because age and gender led to a decrease in model fit indices. Based on 10,000 bootstrap samples, significant positive effects of a history of maltreatment on depressive symptoms, impairments in mentalizing, and feelings of shame were found. Furthermore, both impairments in mentalizing and feelings of shame had significantly positive effects on depressive symptom load. Impairments in mentalizing predicted feelings of shame (Table 2). Building on these results, a significant indirect effect was found from maltreatment on depressive symptoms, with specified indirect effects from maltreatment on depressive symptoms through mentalizing ($\beta = 0.099$, 95 % CI [0.051, 0.156], $p < 0.01$)

Table 2
Standardized estimates and 95% confidence intervals (CI) of each path in the structural equation model.

Path	β	95 % CI
CTQ to BSI DS	0.095**	0.042, 0.148
CTQ to RFQ	0.469***	0.413, 0.524
CTQ to OAS2	0.218***	0.163, 0.273
CTQ to BSI DS via RFQ and OAS2	0.406***	0.365, 0.450
RFQ to OAS2	0.673***	0.620, 0.722
RFQ to BSI DS	0.211***	0.124, 0.298
OAS2 to BSI DS	0.576***	0.490, 0.660

Note: N = 796. CTQ = Childhood Trauma Questionnaire. RFQ = Reflective Functioning Questionnaire. OAS2 = Other as Shamer Scale. BSI DS = Brief Symptom Inventory Depressive Symptoms subscale. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

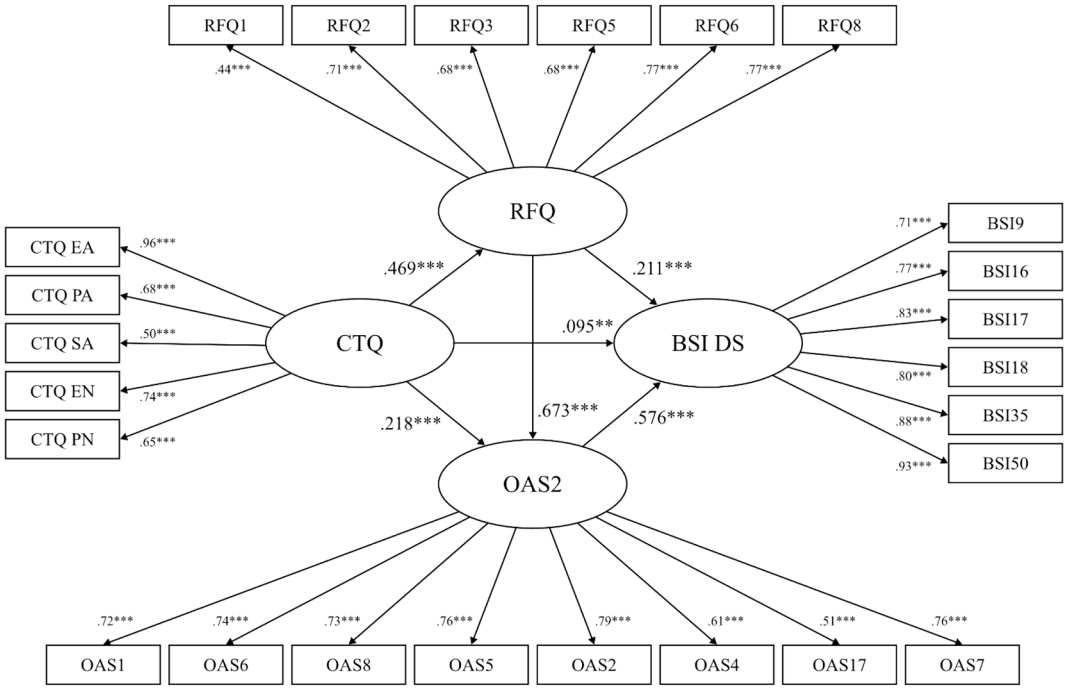

Fig. 2. Structural equation model of maltreatment in childhood, mentalizing, shame and depressive symptom load in adulthood. *Note*. Model fit = ($\chi^2(254, n = 796) = 725.312$, $p < 0.001$; RMSEA = 0.048, 90 % CI [0.044, 0.052]; CFI = 0.970). *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

and from maltreatment on depressive symptoms through shame (β = 0.126, 95 % CI [0.080, 0.180], $p < 0.01$). The interaction term between RFQ and OAS2 revealed no significance and therefore was excluded from the final model due to a decrease in model fit indices. In summary, the combination of both the direct and indirect effects of maltreatment on depressive symptoms accounted for a total contribution of $\beta = 0.501$, 95 % CI [0.448, 0.552, $p = 0.000$], explaining 65 % of the variance in depressive symptoms.

4. Discussion

The present study investigated the association between childhood maltreatment and depressive symptoms in a mixed sample of adults, including clinical and non-clinical participants. In detail, the study explored whether feelings of shame and impairments in mentalizing mediate this association.

Hypothesis 1, regarding a positive association between childhood maltreatment and depressive symptoms, is confirmed by the SEM. Experiences of childhood maltreatment had a small but positive impact on depressive symptoms, with increasing severity of the traumatic experiences associated with more severe depressive symptoms. These findings align with results from other studies (Brown et al., 1999; Hovens et al., 2010; Infurna et al., 2016; Nelson et al., 2017; Widom et al., 2007) and add further evidence confirming the negative consequences of maltreatment in childhood, which even after decades influences the mental health of victims. The findings of the present study suggest that the direct association between maltreatment and depressive symptoms is generally weak, and the association is largely accounted for by the mediating variables included in the model.

Hypothesis 2 which predicted a positive effect from impairments in mentalizing on feelings of shame, can be verified in view of the SEM. We found a strong direct effect of impairments in mentalizing on feelings of shame, which has not been reported before. Uncertainty when drawing on mental states as reliable information to make sense of self and others is associated with feeling shamed by and attributed to others. This is consistent with the mentalizing framework of developmental psychopathology (Fonagy et al., 2002; Luyten et al., 2020): Strong feelings of shame arising from a sense of being negatively evaluated by other people, might be the reflection of impaired metacognitive processes leading to a misinterpretation of the mental states underpinning the actions of others. This process may ultimately lead to feelings of helplessness, inferiority, and anger (Goss, et al., 1994; Matos et al., 2015). The observed ineffective mentalizing may itself be caused by harsh, abusive or neglecting childhood environmental conditions.

As stated in hypothesis 3, we further expected that the link between childhood maltreatment and depressive symptoms would be mediated by both impairments in mentalizing and feelings of shame. With reference to the SEM, hypothesis 3 has to be confirmed. Both variables mediated the link between maltreatment in childhood and depressive symptoms. In detail, the indirect effects suggest that the mediation from childhood maltreatment on depressive symptoms via impaired mentalizing was moderate. This result is consistent with findings from studies that showed impairments in mentalizing capacity in people with depressive disorders (Fischer-Kern et al., 2013; Rothschild-Yakar et al., 2019; Staun et al., 2010; Taubner et al., 2011). Additionally, our data confirm the findings of Li et al. (2020), who recently demonstrated that the direct influence of emotional maltreatment on depressive symptoms was mediated by deficits in mentalizing in a non-clinical sample of adults. Mentalizing, a capacity that might normally facilitate the processing of adverse experiences (Borelli et al., 2019; Brugnera et al., 2021; Chiesa & Fonagy, 2014; Fonagy et al., 2017; Huang et al., 2020; Schwarzer et al., 2021) may not be employed effectively leading to an unmodulated effect of childhood maltreatment on depression. Mentalizing of adverse experiences may help process the sequelae of aversive experience (Nolte et al., 2023) by enabling the victim to process their own reactions as well as the intention of the perpetrator and thus to reduce the impact of both. If mentalizing is a health-promoting or buffering factor sustained by social relationships (Luyten et al., 2020; Fonagy et al., 2021), we would expect social support and a mentalizing environment during childhood to be critical in mitigating the impact of childhood maltreatment (e.g. Bellis et al., 2017).

The indirect effect of maltreatment on depressive symptoms in adulthood via feelings of shame was also significant and predicted further independent proportions of the variance in the severity of depressive symptoms. This result indicates that extensive feelings of shame, as an imbalanced perception of the self and other people's minds, appear to be involved in the development of depressive symptoms, which in turn can be rooted in both experiences of abuse and mentalizing deficits in processing or reappraising those adverse experiences. These findings are consistent with results from empirical studies showing associations between a history of abuse and feelings of shame (Alix et al., 2017; Ellenbogen et al., 2015; Kealy et al., 2018) and the association between shame and depressive symptoms (Cheung et al., 2004; Kim et al., 2011). In addition, they indicate that strong feelings of shame could be one of the key mechanisms in this framework and might serve as a mental-health-affecting process, with greater feelings of shame driving more severe depressive symptoms.

Hypothesis 4, expecting that the association between feelings of shame and depressive symptoms is moderated by impairments in mentalizing, must be rejected in light of the lack of significant interaction between mentalizing and shame in the SEM. Our results suggest that more pronounced impairments in mentalizing do not cause any variations of the direct effect from feelings of shame on depressive symptoms. These results are of interest in relation to the findings of Taubner et al. (2013), who demonstrated that mentalizing plays a moderating role and attenuates the association between psychopathic traits and proactive aggression. The inconsistency may be linked to differences in the measurement of mentalizing, as different methodological approaches were used. Additionally, these differences were found within different populations (adolescents versus adults), pointing to the need to further examine the impact of the participants' age one the moderating role of mentalizing. Another consideration relates to the outcomes assessed in each study. While the current study focused on depressive symptoms, Taubner and colleagues (2013) examined externalizing symptoms. Considering this pivotal difference, our findings suggest potential variations in the underlying pathological processes contributing to the developmental trajectories of externalizing versus internalizing symptoms. Overall, these results highlight the importance of further investigating the moderating role of mentalizing in the context of emergence of internalizing symptom in future studies.

Experiences of childhood maltreatment have been shown to be a crucial predictor of depressive symptoms. In detail, a history of maltreatment is associated with an earlier onset of depression, more depressive episodes, and stronger depressive symptoms (Nanni et al., 2012; Nelson et al., 2016). Given the negative impact of depressive symptoms, such as increasing chronicity (Segal et al., 2003) and suicidality (Chesney et al., 2014), as well as the relatively low efficacy of psychological and pharmacological treatments (Cuijpers et al., 2010) and the high economic societal costs (Donohue & Pincus, 2007) of depression, health-promoting factors need to be identified, which may help prevention and improve the chances of effective psychosocial interventions. The current study investigated whether dysfunctional social cognitive and emotional processes such as impairments in mentalizing could potentially influence the course of depressive symptoms.

The findings of this study indicate, notably, that a history of maltreatment does not exclusively lead to an increase in depressive symptoms but does so via emotional experiences and metacognitive processes. Our results suggest that it is possible that experiences of maltreatment impact on mood through increased shame and ineffective mentalizing capacity, and the latter may also lead to increased feelings of shame. However, it is important to note that while shame is commonly characterized as a problematic mental state (e.g. Goss et al.,

1994; Lewis, 1986), potentially contributing to the development of depressive symptoms (e.g. Cheung et al., 2004; Kim et al., 2011), it can also be viewed positively as an intrapsychic mechanism that serves the individual's self-protection. Following this perspective, an alternative interpretation of the results presented here would suggest that shame, as a common human emotional experience, may not inherently induce depressive symptoms. Instead, it is excessive or prolonged feelings of shame, surpassing a certain threshold or when they remain unmetabolized, that could become a pathogenic factor contributing to depressive symptoms.

Consequently, a therapeutic focus on these health-promotive factors in individuals with a history of adverse experiences might represent a promising approach to intervention. A number of clinical approaches that have been developed address these issues: compassion focused therapy in the case of intense feelings of shame (e.g. Gilbert & Simos, 2022) and mentalization based treatment in the case of impaired mentalizing (e.g. Bateman & Fonagy, 2019). Promoting mentalizing by tailored psychosocial interventions and addressing shame with self-compassion may be a promising approach to help those with adverse childhood experiences by reinforcing a sense of being recognized as intentional agents with a meaningful intrapsychic reality, leading to a decrease in overwhelming feelings of shame, and consequently ameliorating mental health problems such as depressive symptoms.

4.1. Limitations

Despite the large data set, this study has limitations that must be taken into account when considering the results. The findings are based on a cross-sectional research design and do not allow causal relationships to be inferred. A replication of the findings in a longitudinal design is needed to replicate the reported results. Additionally, childhood maltreatment was assessed retrospectively and thus there is the possibility of biases, including inverse causality. Moreover, in view of the complex and diverse manifestations of mentalizing, a replication study should use alternative measures for assessing mentalizing capacities, for instance, in an experimental setting or using interview transcripts to assess further dimensions of mentalizing. Importantly, the RFQ is primarily focused on cognitive aspects and therefore does not address all aspects of ineffective mentalizing. This is particularly noteworthy, as feelings of shame reflect at least partially unconscious mental states. In addition, the extent to which complex phenomena such as depressive symptoms, childhood maltreatment, feelings of shame, or mentalizing can be measured via self-report instruments remains questionable. This is especially significant for intense feelings of shame, the intricacies of which have been extensively illustrated, for instance by the casuistic works of Leon Wurmser (1998).Alternative forms of operationalization could provide further insight, as well as avoiding shared method variance, which may have skewed the results. Finally, for planning future studies, it would be valuable to incorporate additional instruments, such as the Emotion Beliefs Questionnaire (Johnston et al., 2024), to capture the more nuanced interplay between abuse, mentalizing deficits, feelings of shame, and depressive symptoms.

4.2. Conclusions

Mentalizing-informed efforts, implemented in both clinical and non-clinical settings, with a focus on enhancing mentalizing capacities in individuals who have experienced maltreatment, offer a promising framework. Specifically, facilitating effective reflection upon mental states in oneself and others may aid in processing adverse childhood experiences, mitigating the impact of maltreatment, and potentially reducing depressive symptoms in adulthood, as indicated by our data. Therefore, promoting mentalizing through approaches such as mentalization-based therapy (Bateman & Fonagy, 2004), as well as in preventative settings like schools or psychological counseling, could be crucial in mitigating the severe consequences of maltreatment, thus contributing to a reduction in adult depressive symptoms.

A more thorough examination of the available data reveals that, alongside psychoanalytic therapies such as Transference-Focused Psychotherapy (TFP) (e.g. Fischer-Kern et al., 2015), cognitive-behavioral therapy approaches have also demonstrated efficacy in treating depression (e.g. Linde et al., 2015), resulting in improved mentalizing ability and reduced depressive symptoms (Babl et al., 2022). Concerning the treatment of strong feelings of shame, cognitive-behavioral and mindfulness-based interventions are commonly utilized, showing effectiveness in randomized controlled trials (Goffnett et al., 2020). Furthermore, of particular interest in the treatment of shame is the therapy setting – Goffnett and colleagues (2020) demonstrate the utilization and effectiveness of both individual therapy (e.g. Morrison et al., 2016) and group therapy settings (e.g. Brazão et al., 2015).

In the planning of future studies, it's essential to replicate the validity of the association between deficits in mentalizing and extensive feelings of shame, especially emphasizing the use of longitudinal data. Furthermore, incorporating hypothesis-generating methods alongside hypothesis-testing approaches, as demonstrated in the current study, holds great promise. This approach is particularly valuable in the therapeutic context for addressing shame, mentalizing impairments, and depressive symptoms. It aims to deepen our understanding of how deficits in mentalizing contribute to the onset of pathological feelings of shame and subsequently influence the development of depressive symptoms.

5. Declaration of generative AI in scientific writing

No generative AI was used.

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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.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2024.107787.

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