

## Regular Article

# Characterizing the heterogeneity of disruptions in the resolution of trauma among women exposed to childhood maltreatment

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## Abstract

The previously observed heterogeneity in developmental and intergenerational trajectories of childhood trauma may root from interindividual differences in the way trauma-exposed individuals have resolved these experiences. The current study explored whether distinctive patterns of impaired mentalization in relation to trauma could be identified in a sample of 825 pregnant women who experienced childhood maltreatment and whether these heterogeneous patterns were marked by significant differences in internalized and externalized problems during pregnancy, intimate partner violence, personality dysfunctions, and antenatal attachment. A latent profile analysis applied to the seven subscales of the *Failure to Mentalize Trauma Questionnaire* unraveled interindividual variability in mentalizing impairments among pregnant women exposed to childhood maltreatment by identifying five distinctive types of psychological responses to trauma, each being associated in cross-sectional analyses with a specific set of symptoms and dysfunctions. Overall, the study highlights the need for tailored interventions based on the individuals' specific impairments in mentalizing trauma and calls for future developmental research exploring the longitudinal correlates of the five documented profiles of trauma processing.

**Keywords:** Maltreatment; parenting; reflective functioning; trauma resolution; trauma processing

(Received 20 November 2023; revised 21 March 2024; accepted 26 April 2024)

## Introduction

Childhood trauma, here defined as childhood physical, sexual or emotional abuse, and physical or emotional neglect, has been associated with numerous enduring repercussions on functioning (Baldwin et al., 2023; Daniëlsdóttir et al., 2024) and is now considered by many as the most important preventable cause of psychopathology (Teicher et al., 2022). The psychological and intergenerational repercussions of trauma would arise from the complex interactions between the characteristics of trauma and biological (Buss et al., 2017; Lim et al., 2014; Ludmer et al., 2018), genetic (Bradley et al., 2011; Dackis et al., 2012), epigenetic (Radtke et al., 2015; Yehuda & Lehrner, 2018), developmental (Garon-Bissonnette et al., 2022; Sauvé et al., 2022; Toth & Cicchetti, 2013), and environmental (Edwards et al., 2003) risk factors. Yet, a significant proportion of adults who have experienced trauma have preserved functioning (Racine et al., 2022) and several protective factors would contribute to buffer the effects of trauma on psychological functioning during adulthood and on the next generation, including contextual (Langevin et al., 2021), intra-individual (Afifi & MacMillan, 2011) and interpersonal protective

factors, such as attachment security with primary caregivers (Busch & Lieberman, 2007), benevolent childhood experiences (Narayan et al., 2019, 2023) or enriching family-based care (King et al., 2023). This calls for studies on the heterogeneity of profiles in terms of developmental risk and protective factors underlying psychopathology and alterations in functioning in youth and adult populations exposed to childhood trauma (Bonanno & Mancini, 2012; Gee, 2021; Yoon et al., 2023).

## Mentalizing trauma

Research has shown that the extent to which experiences of childhood trauma have been *processed* or *resolved* is one of the factors that contribute to buffer the psychological and intergenerational effects of trauma (Jacobvitz et al., 2006; Koren-Karie & Getzler-Yosef, 2019; Swerbenski et al., 2023). In recent years, the resolution of trauma has been operationalized through the concept of *Mentalization of trauma* and the measure of *Trauma-specific reflective functioning* (Ensink et al., 2014). Mentalizing trauma refers to the ability to reflect on the psychological and relational impact of trauma and to think of traumatic experiences in a coherent and emotionally-grounded fashion (Berthelot, Savard, et al., 2022; Ensink et al., 2014). Available evidence using the *Trauma-Specific Reflective Functioning Scale* (Berthelot & Garon-Bissonnette, 2023), a coding system applied to attachment interviews (i.e., the Adult Attachment Interview, George et al.,

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**Cite this article:** Berthelot, N., & Garon-Bissonnette, J. (2024). Characterizing the heterogeneity of disruptions in the resolution of trauma among women exposed to childhood maltreatment. *Development and Psychopathology*, 1–14, <https://doi.org/10.1017/S0954579424001019>



1985, or the Parent Development Interview, Slade et al., 2003), confirms that mentalizing trauma is an important psychological determinant of resilience and adaptation in adults exposed to childhood maltreatment, namely in terms of parenting. For instance, two Canadian studies using a sample of pregnant women with histories of trauma showed that high levels of mentalization of trauma were associated with a positive investment in pregnancy and with the quality of the parental couple functioning (Ensink et al., 2014), and prospectively predicted the quality of the mother-child attachment relationship at 18 months postpartum (Berthelot et al., 2015). The protective role of mentalizing trauma for parenting was further supported by recent findings in an American sample of women showing that the quality of mentalizing processes in relation to trauma was strongly associated with the mothers' sensitivity to their child's emotional communication, as measured by "parental insightfulness" (Koren-Karie et al., 2002), over and beyond the effect of sociodemographic risk factors and parental mentalization (Berthelot et al., *In Press*). Finally, findings from Borelli et al. (2019) showed that higher reflective functioning in relation to trauma acted as a buffer in the intergenerational cycles of sexual abuse. Interestingly, previous findings (Berthelot et al., *In Press*; Ensink et al., 2014) showed that the quality of mentalizing processes in relation to trauma was not associated with the characteristics of the experiences of abuse or neglect (type, timing, and duration), suggesting that other factors may play a crucial role in the development of mentalization processes following exposure to trauma (Fonagy et al., 2023).

To facilitate the assessment of trauma-specific reflective functioning, a self-report instrument, the *Failure to Mentalize Trauma Questionnaire* (FMTQ; Berthelot et al., 2022) was recently introduced and validated in a sample of pregnant women. Contrary to the previous coding system, the FMTQ does not capture the complexity of thought processes in relation to trauma but rather assesses indications that the respondent is unable to maintain coherent thinking when discussing traumatic experiences or adverse relational experiences and indices of definite distortions in the perception of the impact of trauma on the self, mental states, and behaviors (Berthelot, Savard, et al., 2022). These indications are organized among seven different types of impairments in mentalizing trauma and adverse relationships: *Disorganization of thoughts*, *Grandiosity*, *Absorption in trauma*, *Identification with the victim*, *Identification with the perpetrator*, *Avoidance of thoughts*, and *Justification of trauma*. Higher scores at the FMTQ have been associated with intimate partner violence victimization and perpetration as well as with psychiatric symptoms, including dissociative symptoms, post-traumatic stress symptoms and personality dysfunctions, over and above the effect of the severity of trauma (operationalized through the total score on the Childhood Trauma Questionnaire) and other confounding variables (Berthelot, Savard, et al., 2022; Gamache et al., 2021).

### Heterogeneity in responses to trauma and in mentalizing processes

Advances in developmental psychopathology and developmental neuroscience have demonstrated heterogeneous patterns of reactions, trajectories and outcomes following traumatic experiences (Bonanno & Mancini, 2012; Gee, 2021; Meyer & Lee, 2023) and shown that these differential patterns were little explained by the characteristics of trauma (Cahill et al., 2023; Yoon et al., 2023). Whilst there is a common agreement that the determinants of interindividual variability following exposure to trauma probably

lies in the heterogeneity of developmental and sociocultural risk and protective factors (Sroufe, 2009), the field has been dominated by correlational studies linking trauma to poor outcomes (Berthelot et al., 2019, 2020) and there is still a need to move "toward more fine-tuned inquiry into the natural heterogeneity of both trauma outcome and the factors that inform it" (Bonanno & Mancini, 2012, p.81).

The recent literature in developmental psychopathology has paid particular interest into the role of caregiving, attachment, and mentalization in risk and resilience trajectories following exposure to traumatic experiences (Fonagy et al., 2019; Gee & Cohodes, 2023). Congruently, research has suggested that trauma would impede the development of mentalization during childhood and adolescence (Ensink et al., 2016) which would exert a downward impact on later development (Morosan et al., 2020). Yet, much remains to be understood about how trauma influences the development of mentalization and the field seems to be moving toward a deeper understanding of interindividual variability in mentalization processes and of how such variations may lead to different health and functioning outcomes. As a case in point, two recent studies have revealed important distinctions in how individuals attempt to mentalize and in the representational content discussed when interviewed in settings aiming to prompt reflective functioning (Garon-Bissonnette et al., 2023; Slead et al., 2021). More specifically, Garon-Bissonnette and colleagues (2023) showed that the exclusive reliance on a global score when assessing multidimensional constructs such as mentalization may have masked the variability of processes underlying respondents' scores and limited the detection of important phenomena affecting specific subgroups of the population. Indeed, in a community sample of women, no differences in terms of mentalization capacities were observed between participants exposed to trauma and participants without a history of trauma when using a global score of reflective functioning. However, a more precise inquiry into the types of mentalization impairments exhibited by participants of each group showed that childhood maltreatment was strongly predictive of a disrupted, over-analytical and inconsistent way of thinking about attachment experiences, a phenomenon that was practically absent in adults without history of trauma. Interestingly, the seven-factor structure of the FMTQ may offer the opportunity to capture this heterogeneity of thought processes in relation to trauma and to evaluate whether distinct ways of thinking about traumatic experiences have distinct correlates in terms of psychopathology and functioning.

### The present study

The first goal of the present study was to evaluate, by means of a latent profile analysis (LPA), whether distinct profiles of impairments in mentalizing trauma could be identified in a community sample of adults exposed to childhood abuse and neglect. We hypothesized that we would find significant variability among survivors of childhood trauma and that this heterogeneity would reflect qualitatively distinct ways of processing traumatic experiences, that would bear significance for clinical practice and empirical research.

In a second step, we aimed to evaluate whether these heterogeneous profiles were marked by significant differences in internalized (anxiodepressive and post-traumatic stress disorder [PTSD] symptoms) and externalized/relational (anger, intimate partner violence) problems, personality dysfunctions, and antenatal attachment (Table 1). The LPA performed in step 1 identified

**Table 1.** Comparisons between latent profiles on anxiodepressive symptoms, PTSD symptoms, anger, intimate partner violence, personality dysfunctions, and antenatal attachment

Exogenous variables	Profile 1: identified with the perpetrator (n = 111)	Profile 2: functionally grandiose (n = 279)	Profile 3: absorbed in trauma (n = 95)	Profile 4: No impairment in mentalizing trauma (n = 259)	Profile 5: global impairments in mentalizing trauma (n = 81)	Significant contrasts between profiles using the BCH method (Cohen's <i>d</i> ) <sup>a,b</sup>
<b>Childhood trauma</b>						
<i>M</i>	44.73	42.26	78.06	41.63	60.10	3 > 2* (.27), 4 * (.32)
SE	9.96	7.23	14.34	5.11	9.96	
<b>Anxiodepressive Sx</b>						
<i>M</i>	29.62	24.44	27.01	20.08	29.02	NS
SE	3.85	2.97	4.92	3.92	4.07	
<b>PTSD Sx</b>						
<i>M</i>	31.80	18.09	61.42	15.18	35.32	3 > 1* (.33), 2*** (.50), 4 *** (.50)
SE	8.57	5.15	8.98	6.09	10.87	
<b>State anger</b>						
<i>M</i>	30.33	17.34	11.02	14.03	33.21	1 > 2* (.27), 3** (.38), 4** (.38) 5 > 2* (.30), 3** (.40), 4** (.40)
SE	4.81	2.65	5.31	2.05	6.59	
<b>IPV victimization</b>						
<i>M</i>	8.85	3.25	-1.52	0.96	13.36	1 > 3* (.33), 4** (.33) 5 > 2* (.30), 3** (.44), 4** (.46)
SE	2.62	2.06	3.60	1.24	3.66	
<b>IPV perpetration</b>						
<i>M</i>	8.18	3.41	-2.04	1.34	14.91	1 > 3* (.35), 4* (.26) 5 > 2* (.31), 3** (.47), 4** (.40)
SE	3.01	1.71	2.69	1.24	4.85	
<b>PD: interspers. problems</b>						
<i>M</i>	1.12	0.57	1.61	0.71	1.82	3 > 2* (.28), 4 * (.30) 5 > 2** (.34), 4** (.37)
SE	0.29	0.25	0.32	0.18	0.35	
<b>PD: self-impairments</b>						
<i>M</i>	1.65	1.05	1.72	1.34	2.68	5 > 1* (.35), 2*** (.47), 4** (.42)
SE	0.24	0.22	0.40	0.19	0.37	
<b>Antenatal attachment</b>						
<i>M</i>	49.36	51.32	51.07	53.81	51.27	NS
SE	2.22	1.85	2.78	2.04	3.88	

Note. *M* = estimated marginal means; SE = standard error. BCH = Bolck, Croons, and Hagenaarsé. Sx = symptoms. IPV = intimate partner violence. PD = personality dysfunctions. NS = not significant.

<sup>a</sup> Age, income, and education were entered as covariates.

<sup>b</sup> \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

five distinct profiles of respondents: Profile 1, *Identified with the perpetrator*; Profile 2, *Functionally grandiose*; Profile 3, *Absorbed in trauma*; Profile 4, *No impairment in mentalizing trauma*; and Profile 5, *Global mentalization impairments in relation to trauma*. Based on the existing literature, we had different hypotheses for the associations between each of these profiles and external variables. First, given that participants in Profile 1 (Identified with the perpetrator) were characterized by a higher propensity to value aggression and rationalize mean behaviors, we hypothesized that this subgroup would be marked by high levels of externalized and relational problems while showing little internalized problems, as suggested by studies reporting positive associations between perceived acceptability of interpersonal conflicts or aggression and

intimate partner violence (Fincham et al., 2008; Gracia et al., 2015) and recent findings linking higher perceived acceptability of childhood maltreatment to lower symptoms of PTSD (Bartoli et al., 2024). Second, since participants in Profile 2 (Functionally grandiose) were characterized by a perception of themselves as being impermeable to the effects of trauma, we expected them to report low levels of subjective distress and alterations in functioning, as it is generally the case for adults with dismissing attachment representations who share with Profile 1 participants a tendency to cut themselves off from negative experiences (Barazzone et al., 2019; Martin et al., 2017; Murphy & Bates, 1997). Third, since Profile 3 (Absorbed in trauma) participants displayed specific mentalizing impairments (interference of

**Table 2.** Sample characteristics

	<i>n</i> (%)
<b>Marital status</b>	
In a relationship	774 (93.8)
Single	48 (5.8)
Missing	3 (0.4)
<b>Education level</b>	
High school diploma or less	120 (14.5)
Collegial or professional training	394 (47.8)
University degree	310 (37.6)
Missing	1 (0.1)
<b>Race</b>	
White	774 (93.8)
Black	12 (1.5)
Hispanic	10 (1.2)
First Nations	3 (0.4)
Others	10 (1.2)
Missing	16 (1.9)
<b>Annual income</b>	
< C\$ 34 999	124 (15.0)
[C\$35 000–64 999]	157 (19.0)
[C\$64 000–94 999]	270 (32.7)
C\$ 95 000 and higher	263 (31.9)
Missing	11 (1.3)
<b>Childhood trauma exposition</b>	
Physical abuse	187 (21.6)
Sexual abuse	277 (33.6)
Emotional abuse	467 (56.6)
Physical neglect	299 (36.3)
Emotional neglect	455 (55.2)

Note. *N* = 825. Mean age = 29.59, SD = 4.99.

memories of trauma with the regulation of thought, affect and behaviors, depersonalization, and avoidance of thoughts) that evoke some of the core characteristics of PTSD (Moser et al., 2020), we expected these participants to be characterized by high levels of PTSD symptoms. Fourth, in line with previous studies about the protective role of mentalizing trauma for mental health and parental functioning (Berthelot, Savard, et al., 2022; Ensink et al., 2014; Gamache et al., 2021), we hypothesized that Profile 4 (No impairment) participants would show preserved functioning across domains. Contrarily, we expected Profile 5 (Global impairments) participants to present the most severe and widespread symptoms and alterations in functioning.

## Methods

### Participants and procedure

A total of 872 pregnant women having been exposed to childhood trauma according to the validated cut-offs of the Childhood Trauma Questionnaire (see below; Bernstein et al., 2003) were

recruited using two strategies in the Province of Quebec, Canada. First, 412 women were recruited during their first pregnancy monitoring appointment between April 2018 and January 2023. Second, 460 pregnant women were recruited online through social media advertisements in April 2020. Participants completed self-reported questionnaires during the second or third trimester of pregnancy. Inclusion criteria were being 18 years old or older, having sufficient reading skills in French to complete self-reported assessments, being currently pregnant and having experienced at least one type of abuse or neglect before 18 years old. Of the 876 participants, 47 had incomplete data on all scales of the FMTQ (our main variable of interest) and were thus excluded. Sociodemographic characteristics for the final sample of 825 pregnant women are presented in Table 2. All participants provided written informed consent and studies received ethical approval from our Regional Health Center (CER-2016-016-11) and our University (CER-16-226-10; CER-20-266-10).

### Measures

#### *Impairments in the mentalization of trauma*

Current problems in the way people think of or deal with trauma and adverse relationships were assessed using the French version of the FMTQ (Berthelot, Savard, et al., 2022). During the assessment, participants are invited to recall instances of adverse relationships where they felt intense negative emotions, such as betrayal, hurt, abandonment, feeling used or disrespected, fear, or being overwhelmed. Responses are rated on a 5-point Likert scale from 0 (*completely disagree*) to 4 (*completely agree*). Higher scores indicate more severe disruptions in mentalizing trauma. The FMTQ comprises seven subscales reflecting specific indicators of mentalizing impairments in relation to trauma. Internal consistency, after applying the Spearman-Brown prophecy formula that allows estimating the reliability of subscales including a low number of items if the number of items was double, was adequate ( $S-B\alpha = .70-84$ ).

#### *Childhood trauma*

Childhood trauma was evaluated using the French version of the Childhood Trauma Questionnaire (CTQ-28; Bernstein et al., 2003; Paquette et al., 2004). This self-report comprises 28 items and examines five types of interpersonal trauma before the age of 18: physical, psychological, and sexual abuse as well as physical and psychological neglect. Participants are asked to rate each item on a 5-point Likert scale, ranging from 1 (*never true*) to 5 (*always true*), with higher scores reflecting more severe trauma. Specific cut-offs are validated for each subscale (physical abuse  $\geq 8$ , psychological abuse  $\geq 10$ , sexual abuse  $\geq 8$ , physical neglect  $\geq 8$  and psychological neglect  $\geq 15$ ; Walker et al., 1999). Participants are categorized as having experienced childhood trauma if they reach the cut-off on at least one scale. The Cronbach's alpha for the total score of the CTQ in this study was of  $\alpha = .81$ .

#### *Internalized symptoms*

Anxiety and depressive symptoms were measured using the French 10-item version of the Kessler Psychological Distress Scale (K10; Gravel et al., 2003; Kessler et al., 2002). Higher scores at the K10 reflect more anxiety and depressive symptoms. A cut-off of  $\geq 30$  was used since 76.3% of respondents with such elevated scores would meet criteria for a DSM-IV mood, anxiety, or substance use disorder during a diagnostic interview (Andrews & Slade, 2001). Both the English and French versions have similarly satisfactory



psychometric properties (Gravel et al., 2003). The Cronbach's alpha for the K-10 in this study was  $\alpha = .86$ .

Past-month post-traumatic stress symptoms were assessed using the PTSD Checklist for DSM-5 (Post-traumatic Checklist for DSM-5, PCL-5; Weathers et al., 2013). The PCL-5 has 20 items rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*always*). Higher scores reflect more severe symptoms, with a clinical cut-off set at  $\geq 33$  (Weathers et al., 2013). Both the French and the original versions have equally adequate validity and reliability (Ashbaugh et al., 2016). The Cronbach's alpha for the PCL-5 in this study was  $\alpha = .92$ .

#### *Externalized symptoms and relational problems*

Current intensity of angry feelings and expression of anger was assessed using the French version of the State Anger scale of the *State-Trait Anger Expression Inventory-2* (STAXI-2; Borteyrou et al., 2008; Spielberger, 1999). This specific scale comprises 15 items. Responses are rated on a 4-point Likert scale ranging from 1 (*almost never*) to 4 (*almost always*), with higher scores reflecting higher state anger. The Cronbach's alpha for the State Anger scale in this study was  $\alpha = .94$ .

Psychological and physical violence victimization and perpetration during the past year was measured using a 24-item French version of the Revised Conflict Tactics Scale (CTS-2; Godbout et al., 2017; Lussier, 1997; Straus et al., 1996). Responses are rated on an 8-point frequency scale, ranging from 0 (never occurred in the past year) to 6 (more than 20 times in the last year), whereas a score of 7 signifies that the behavior did not occur in the past year but has happened previously. This score was given a zero since the present study aimed to assess current (past year) relational difficulties. A higher score at the CTS-2 reflects higher frequency of victimization and perpetration of psychological and physical violence within the intimate partner relationship. The CTS-2 demonstrated good reliability and validity across various non-clinical samples of adults (Chapman & Gillespie, 2019; Straus et al., 1996). The Cronbach's alpha for both scales of the CTS-2 in this study was  $\alpha = .70$ .

#### *Personality dysfunction*

Personality dysfunctions as defined by Criterion A of the alternative dimensional model of the DSM-V were assessed using the French version of the *Self and Interpersonal Functioning Scale* (SIFS; Gamache et al., 2019). The SIFS has 24 items rated on a 5-point Likert scale ranging from 0 (*this does not describe me at all*) to 4 (*this totally describes me*). Higher scores reflect higher personality dysfunctions. In this study, we relied on the two-factor solution of the SIFS assessing self-impairments (i.e., self-direction and identity) and interpersonal dysfunctions (i.e., empathy and intimacy) as well as on the clinical cut-off of  $\geq 1.30$ , indicative of a probable personality disorder characterized as mildly severe according to Gamache et al. (2021). The SIFS shows good validity across samples (Gamache et al., 2019; Gamache et al., 2021; Waugh et al., 2021). The Cronbach's alpha for the interpersonal dysfunction and self-impairment scales of the SIFS in this study were respectively  $\alpha = .78$  and  $\alpha = .81$ .

#### *Antenatal attachment*

Prenatal psychological investment toward the unborn child and commitment to the pregnancy was assessed using the *Maternal Antenatal Attachment Scale* (MAAS; Condon, 1993). Responses on the 19 items are rated on a variable 5-point Likert scale. Higher scores reflect greater investment and commitment towards the

fetus and pregnancy. The Maternal Antenatal Attachment Scale yields two subscales. In the present study, we focused on the Quality subscale measuring the strength of the emotional bond with the fetus. The instrument has good psychometric properties (Condon, 1993). The Cronbach's alpha for the quality of attachment subscale in this study was of  $\alpha = .75$ .

#### *Analytic strategy*

In a first step, to identify distinct profiles of mentalizing impairments in relation to trauma, LPAs were conducted using MPlus 8.4 (Muthén & Muthén, 2017). Standardized scores of the seven factors of the FMTQ were used. Distributions were truncated at the 98th percentile. Solutions yielding between 2 and 7 profiles were analyzed and compared using the Bayesian information criteria (BIC; i.e., reflecting the parsimony of the model), the entropy (i.e., evaluating the proportion of correct classification within each profile), and the Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (VLMR-LRT; i.e., indicating the loss of fit associated with the removal of profiles). In LPA, the lowest BIC, higher entropy (i.e., value closest to 1) and a significant VLMR-LRT are deemed to indicate the better fitting model, whereas all profiles should include at least 5% of the sample.

In a second step, we first used the DE3STEP command in Mplus to evaluate differences between latent profiles identified in step 1 on potential covariates to control for in further analyses. Associations between latent profiles and exogenous variables (severity of childhood trauma; anxiodepressive symptoms; PTSD symptoms; anger; intimate partner violence; personality dysfunctions; and antenatal attachment) were next evaluated using the manual Bolck, Croons, and Hagenaars method (BCH; Bolck et al., 2004). This method allows for the examination of statistically significant mean-level differences by treating exogenous variables as distal variables. It is generally preferred to the three-step method as it allows for the inclusion of control variables, is more robust, and is less perturbed by inequality of variances across latent profiles (Bakk & Vermunt, 2016). This approach also considers each participant's individual error rate instead of the sample's average classification error, allowing the capture of an imprecise profile assignment when examining exogenous variables across latent profiles (Asparouhov & Muthén, 2014; Nylund-Gibson et al., 2019). Finally, the risk (measured using odds ratios) of reaching the clinical cut-off of a probable anxiodepressive disorder, PTSD disorder or personality disorder was calculated for each profile with Profile 4 as category of reference.

#### **Results**

Intercorrelations between the subscales of the FMTQ were moderate to high (range .17–.53), showing no sign of collinearity (STable 1 in the electronic supplement). The seven tested solutions are displayed in Table 3. According to Akaike information criterion, BIC, entropy and VLMR-LRT, a 6-profile solution appeared as the best fitting model within the current sample. However, after consideration of the number of participants in each profile, model parsimony, and conceptual meaningfulness, we retained the 5-profile solution. Indeed, as shown in SFigure 1 (see electronic supplement), the 6-profile solution included two profiles with small sample sizes (44 and 64 participants respectively) and some profiles did not differ in a meaningful way. This decision was further supported by the fact that both solutions (5-profile and 6-profile) showed very similar fit indices (Table 3).

**Table 3.** Latent profile analysis for solutions 1 through 7 using the seven subscales of the failure to mentalize trauma questionnaire as latent indicators

Profiles (k)	AIC	BIC	Sample-size adjusted BIC	Entropy	<i>p</i> -value (k vs k-1)
1	16,323	16,389	16,334	–	–
2	15,149	15,253	15,183	0.874	0.0000
3	14,827	14,968	14,873	0.770	0.0019
4	14,564	14,743	14,623	0.830	0.0129
5	14,373	14,590	14,444	0.833	0.0079
6	14,180	14,435	14,263	0.857	0.0003
7	14,097	14,389	14,192	0.853	0.1375

Note. AIC = Akaike information criteria; BIC = Bayesian information criteria.

The five profiles were labeled *Identified with the perpetrator* (Profile 1); *Functionally grandiose* (Profile 2); *Absorbed in trauma* (Profile 3); *No impairment in mentalizing trauma* (Profile 4); and *Global mentalization impairments in relation to trauma* (Profile 5). As shown in Figure 1, Profile 1 participants (*Identified with the Perpetrator*) were indexed ( $\pm .30$ ) by high scores on the *Identification with the perpetrator* and *Justification of trauma* subscales of the FMTQ. Profile 2 participants (*Functionally grandiose*) had high scores on the *Grandiosity* subscales of the FMTQ and low scores on the *Identification with the perpetrator* and *Disorganization of thoughts* subscales. Profile 3 participants (*Absorbed in trauma*) were especially characterized by high scores on the *Identification with the victim*, *Disorganization of thoughts*, and *Absorption in trauma* subscales of the FMTQ and reported some levels of *Grandiosity* and *Avoidance*. Profile 4 participants (*No impairment in mentalizing trauma*) had low scores on the seven subscales of the FMTQ, whereas Profile 5 participants (*Global mentalization impairments in relation to trauma*) had elevated scores on all subscales.

The DE3STEP command revealed significant differences between profiles on age, annual income and education (STable 2, electronic supplement). We thus included these covariates in all further analyses. BCH analyses showed significant differences between profiles on outcome variables (Table 4). As shown in Figure 2, Profile 1 (*Identified with the Perpetrator*) participants were characterized by high levels of anger and a high likelihood of being involved in bidirectionally violent relationships. Profile 3 (*Absorbed*) participants showed the highest level of trauma and were characterized by very high levels of PTSD symptoms and some personality dysfunctions, namely in terms of persisting relational problems. They were however very unlikely to show externalized problems such as anger and violence. Profile 5 (*Global impairments*) participants were not particularly at risk of internalization (anxiodepressive of PTSD symptoms) but displayed the highest levels of anger, intimate partner violence, interpersonal problems, and self-impairments. In contrast, the participants belonging to Profile 2 (*Functionally grandiose*) and 4 (*No impairment*) showed very little symptoms and dysfunctions across domains.

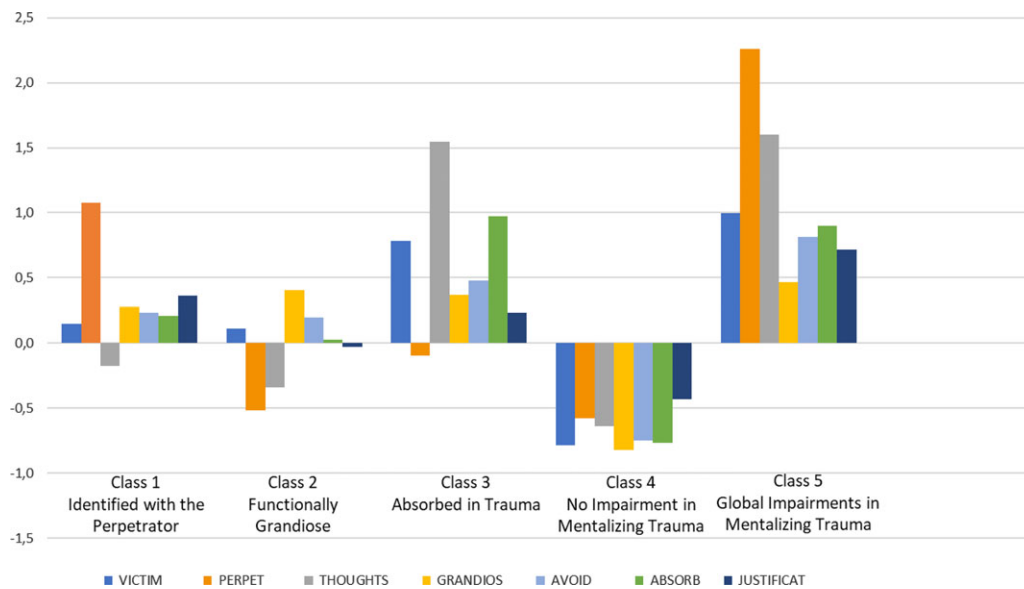
These results were further supported by categorical analyses relying on previously validated clinical cut-offs indicating probable anxiodepressive disorder, PTSD, and personality disorder. As shown in Table 5, in comparison to Profile 4 (*No impairment*) participants, Profile 3 (*Absorbed*) participants were at high risk of

probably suffering from any of the three disorders, and 44.6% (OR = 13.44) reached the cut-off for a PTSD. Profile 5 (*Global impairments*) participants were similarly at risk for the three disorders and more than half (52.5%, OR = 40.55) were classified as possibly presenting a personality disorder. Odds ratios were inferior for Profile 1 and 2 participants, while remaining significant (between 2.12 and 5.53) for PTSD and personality disorders, especially for Profile 2 (*Identified with the perpetrator*) participants.

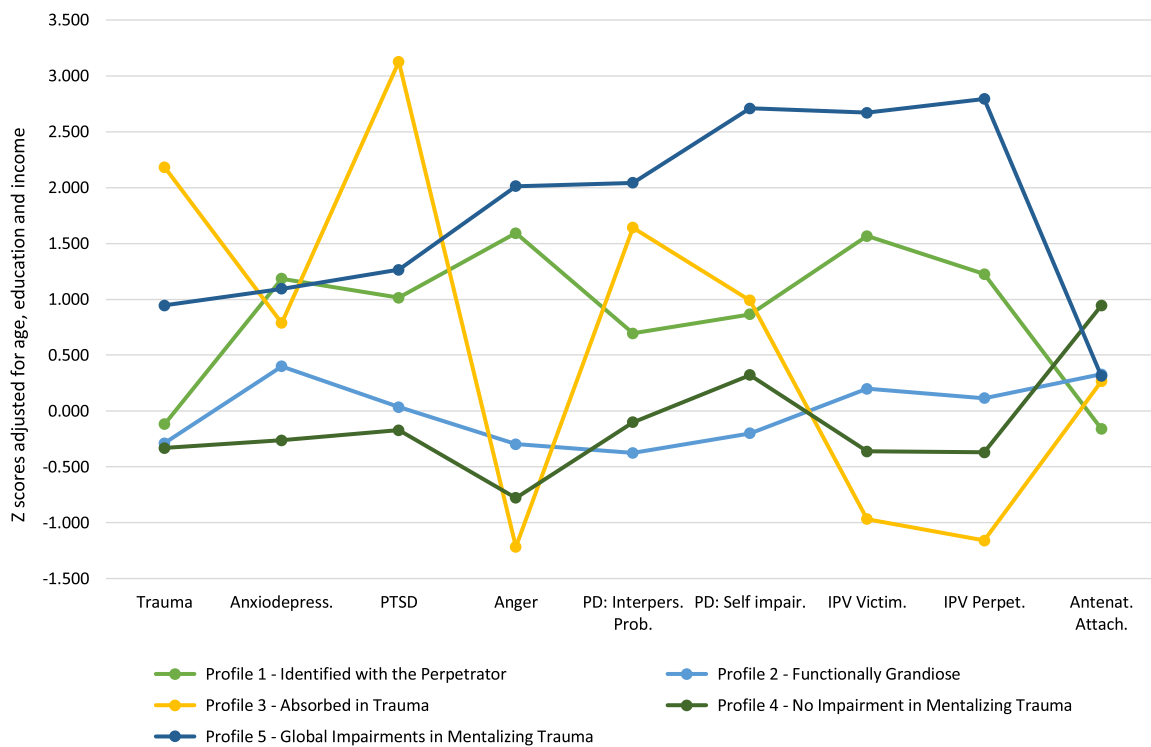
## Discussion

The study unraveled interindividual variability in trauma-resolution processes among adults who experienced childhood maltreatment. Yet, we were able to identify five types of psychological response to trauma, each manifesting throughout a specific set of symptoms and dysfunctions. Specifically, we identified five distinct profiles of disruptions in the mentalization of trauma: *Identified with the perpetrator* (Profile 1), *Functionally grandiose* (Profile 2), *Absorbed in trauma* (Profile 3); *No impairment in mentalizing trauma* (Profile 4), and *Global mentalization impairments in relation to trauma* (Profile 5). Whereas profiles 1, 3 and 5 participants presented specific patterns of symptoms and dysfunctions (see Table 4 and Fig. 2), profiles 2 and 4 participants displayed very few negative outcomes. Interestingly, the vast majority of adults exposed to childhood trauma in our community sample were classified in one of the latter profiles ( $n = 538$ ; 65%). This encouraging proportion suggests that the most common pattern of response in the face of trauma might be one of resilience, a finding that is consistent with previous observations in youths (Cahill et al., 2023; Martinez-Torteya et al., 2009; Yoon et al., 2023) and adults (Itzhaky et al., 2017). However, Profile 2 participants, who are characterized by a perception of themselves as being somewhat invulnerable to trauma, are intriguing and call for further research, namely in terms of parenting. Indeed, in the same way as adults who have dismissing attachment representations, these participants may have developed ways to regulate trauma-related mental states that preserve them from experiencing significant distress and symptoms (Barazzone et al., 2019; Martin et al., 2017; Murphy & Bates, 1997), but that may lead to unsupportive or insensitive caregiving when their child expresses vulnerability or evokes such feelings in themselves. Future research will be needed to evaluate how caregivers in each profile may differ in terms of caregiving behaviors.

Profile 1 participants (*Identified with the Perpetrator*) consisted of adults who emerged out of maltreating relationships by defensively identifying with hostile attachment figures in an attempt to cope with the fear evoked by trauma (Howell, 2014). As we may have expected based on theoretical grounds, these participants reported high levels of anger and were particularly at risk of committing and suffering physical and emotional violence in their partner relationship. Profile 3 participants (*Absorbed*) were particularly characterized by three types of mentalization impairments in relation to trauma: (1) a tendency to take responsibility for trauma or to consider that abusive behaviors were deserved (measured through the *Identification with the victim* subscale of the FMTQ), (2) severe problems in the monitoring of reasoning under the forms of depersonalization and destructive behaviors when experiencing trauma-related emotions (measured through the *Disorganization of thoughts* subscale of the FMTQ), and (3) interference of memories of trauma with the monitoring of



**Figure 1.** Latent profile description using the seven latent indicators from the failure to mentalize trauma questionnaire. Victim = identification with the victim; perpet = identification with the perpetrator; thoughts = disorganization of thoughts; grandios = grandiosity; avoid = avoidance of thoughts; absorb = absorption in trauma; justificat = justification of trauma.



**Figure 2.** Standardized outcome variables across latent profiles.

thoughts and behaviors (measured through the *Absorption* subscale of the FMTQ). This specific cluster of disruptions in the mentalization of trauma evokes the PTSD symptoms of *Intrusion* (Cluster B) and *Negative alterations in cognitions and mood* (Cluster D). Correspondingly, these participants were indexed by very high levels of PTSD symptoms and some personality dysfunctions, namely in terms of persisting interpersonal problems. They were also the most severely exposed to trauma. However, in contrast to Profile 1 and 5 participants, they displayed very little externalized problems. Finally, Profile 5 participants showed high scores across all subscales of the FMTQ, reflecting widespread impairments in the mentalization of trauma.

They were correspondingly the most likely to present high levels of symptoms and dysfunctions.

Analyses using categorical outcomes further illustrated the strong association between psychological processing of trauma and outcomes. Indeed, in comparison to participants for whom trauma-specific mentalization was not compromised (Profile 4), the specific combination of mentalizing impairments that characterized participants of Profile 3 (Absorbed) was associated with a 12.98-fold increased risk of possibly suffering from a psychiatric disorder during pregnancy, whereas the risk was increased 23.61-fold in participants presenting global and extensive mentalization impairments (Profile 5).

**Table 4.** Summary of participants belonging to each profile, including typical excerpts of narratives about their experience of childhood trauma

Latent profiles	Types of impairments in the mentalization of trauma <sup>a</sup>	Correlates	Excerpts of narrative illustrating the distinctive disruptions in mentalizing trauma expressed by participants of each profile <sup>b</sup>
Profile 1 Identified with the perpetrator	<ul style="list-style-type: none"> <li>↗ Identification with the perpetrator</li> <li>↗ Justification of trauma</li> </ul>	<ul style="list-style-type: none"> <li>↗ Anger</li> <li>↗ IPV perpetration</li> <li>↗ IPV Victimization</li> </ul>	<p>These participants keep at a distance feelings of vulnerability by defensively identifying with threatening attachment figures, and justifying their behavior. Their narratives seem to be characterized by feelings of excitement when discussing traumatic experiences, justification of maltreating behaviors and indices that they are unconsciously caught up in the perpetration of maltreatment.</p> <ul style="list-style-type: none"> <li>• “Does that experience affect you now that you are older?” “No” “No?” “No, but if I see him on the street I won’t hesitate to spit on him. When I was younger, I used to hide from him. Now I’m old enough, if I see him on the street, I will spit on him or run him over with my car.”</li> <li>• “I tell my kids “mommy is going to get mad, and she can give big slaps, big slaps on the butt”. But if it’s on the butt or the fingers it doesn’t hurt. It’s not that strong, so you know, she cries just because she feels something else, not because . . . you know, she’s really not used to it . . .”</li> <li>• I gave my father a punch! TA-TAK! I gave him a black eye (laughs). That was one hell of a show!!</li> <li>• “I pity the next guy who tells me “my lunch is not ready!” Sit down, I will give you your lunch. I’ll fill his lunch box directly in his mouth you know (laughs). I am not your slave. No, it doesn’t work that way. I like talking about that; I find it fun. It lets off the steam.”</li> <li>• “Well, she didn’t hit us for nothing you know. When she would hit us, she would do it because we had done something wrong.”</li> </ul>
Profile 2 Functionally grandiose	<ul style="list-style-type: none"> <li>↗ Grandiosity</li> <li>↘ Identification with the perpetrator</li> <li>↘ Disorganization of thoughts</li> </ul>	<p>Few symptoms and dysfunctions</p>	<p>These participants have developed a representation of themselves as invulnerable to the effects of trauma or as having the strength to move. Their narratives are generally coherent but avoid discussing painful emotions. They confer a sense that trauma belongs to the past and that it doesn’t affect them anymore.</p> <ul style="list-style-type: none"> <li>• “I remember talking about it with my sister. I used to tell her: “I know that if it were you, you would have never been able to make it through.” Me, I’m capable of confronting every situation, even the most painful ones. And in a positive way, not a negative way.”</li> <li>• “I put a cross on that. There are other things in my life and I think you have to go on, not live in the past. When you go through such experiences you have to be able to say: “Ok, that’s enough and put a cross on that.”</li> </ul>
Profile 3 Absorbed in trauma	<ul style="list-style-type: none"> <li>↗ Identification with the victim</li> <li>↗ Disorganization of thoughts</li> <li>↗ Absorption in trauma</li> <li>↗ Avoidance</li> <li>↗ Grandiosity</li> </ul>	<ul style="list-style-type: none"> <li>↗ Trauma</li> <li>↗ PTSD</li> <li>↗ Interpersonal problems</li> </ul>	<p>These participants are overwhelmed by traumatic memories, making it difficult for them to organize their thoughts and discourse. They seem to have developed a representation of themselves as being to blame for the trauma.</p> <ul style="list-style-type: none"> <li>• “You know, when he took his belt . . . (10 seconds pause) and folded it in two and made noise with . . . (6 seconds pause) scared . . . (4 seconds pause) it scared us. But he never hit us with it, but it was scary as hell ! And then “YOU WANT A REASON TO CRY?” and he takes his belt of and he comes to me and . . . Oh! We cried even more. It scared us. He was really strict.” (4)</li> <li>• [Talking about verbally abusive step-father] “I started my period when I was like 10 and I had quite important mood swings. I was like around 4<sup>th</sup> grade and then he really didn’t know how to deal with me. He really did his best, but I was so difficult.”</li> </ul>



Profile 4 No failure in mentalizing trauma	<ul style="list-style-type: none"> <li>↘ Identification with the victim</li> <li>↘ Identification with the perpetrator</li> <li>↘ Disorganization of thoughts</li> <li>↘ Grandiosity</li> <li>↘ Avoidance</li> <li>↘ Absorption in trauma</li> <li>↘ Justification of trauma</li> </ul>	Few symptoms and dysfunctions	<p>These participants value their experience. They demonstrate an attitude of openness and curiosity about their internal world and that of others, and some participants display a complex articulation of how trauma has influenced them. Their narrative is clear and the interviewer can easily understand their perspective.</p> <ul style="list-style-type: none"> <li>• “Well, I thought it was . . . just by seeing how I react to those memories . . . I thought I had forgotten about it, not forgotten because some things leave a mark forever, but I don’t define my life by that experience you know? I always try to do better. I know I had a troubled childhood, and I don’t want to replicate it over again, nor with my children nor with my husband. But still, when I talk about it, I can see I am still sensitive about it. Like it’s still there you know. Because I never really had the chance to sit down and talk about it with someone.”</li> <li>• “I worry too much about what people, particularly my parents, think. And I think its related to the abuse. I just, I’m not as free as I would like to be. I mean, I’m going to be 39 next week and I still sort of, like in the back of my mind, I’m still thinking “Oh, would Dad be ok with this ?”</li> </ul> <p>There are little instances of denial, minimization, or self-blame and when this happens these speakers are able to identify that it represents an attempt to keep at distance difficult emotions.</p> <ul style="list-style-type: none"> <li>• “[ . . . ] I laugh, but it’s not funny”</li> <li>• “I said at the beginning that my dad was not violent, but I realize that he was in fact quite violent. I think that it’s difficult for me to acknowledge that. No one likes to say or admit that one of your parents is violent, you know. My father was really violent, verbally.”</li> <li>• “Oh, sometimes I would just be studying and she would have a tantrum for no reason. But now I can understand. She was in a frustrating situation with her husband because he was never there. He wasn’t taking care of his children, so I was the one who paid the price for it. That’s how I see it today. It’s like she took her frustrations out on me.”</li> </ul>
Profile 5 Global failures in the mentalization of trauma	<ul style="list-style-type: none"> <li>↗ Identification with the victim</li> <li>↗ Identification with the perpetrator</li> <li>↗ Disorganization of thoughts</li> <li>↗ Grandiosity</li> <li>↗ Avoidance</li> <li>↗ Absorption in trauma</li> <li>↗ Justification of trauma</li> </ul>	<ul style="list-style-type: none"> <li>↗ Anger</li> <li>↗ IPV perpetration</li> <li>↗ IPV Victimization</li> <li>↗ Interpersonal problems</li> <li>↗ Self-impairments</li> </ul>	<p>These speakers do not seem to have a consistent set of strategies to maintain at distance trauma-related mental states and oscillate between all types of failures in the mentalization of trauma. This results in multiple contradictions when talking about traumatic experiences, making it impossible for the interviewer to get a grasp of the speaker’s experience and perspective. For instance, these participants may report being to blame for the trauma, and later report that they were young children and that there was nothing they could have done to avoid such mistreatments. Similarly, they can report being permanently damaged and later report that trauma doesn’t have much impact on them today.</p> <ul style="list-style-type: none"> <li>• “He did not hit. It never went physical. [5 minutes later in the interview] It happened once that he hit me, it was with a belt and it was quite bad, I had to go to the doctor. [Later] Other moments were when he came home drunk. [later] Really, my dad was not a violent person.</li> </ul> <p>These participants also express unintegrated, bizarre or inappropriate representations of self and others and a clear misunderstanding of psychological functioning.</p> <ul style="list-style-type: none"> <li>• “Maybe if she would have loved me, I wouldn’t have been good to my children.”</li> <li>• [Talking about sexual abuse during childhood] “He was a man who really really loved women so whenever he was in my company well [ . . . ]”</li> </ul>

<sup>a</sup> z-score values that extend beyond  $\pm 3.0$  are considered as characteristics features of the profile; <sup>b</sup> Excerpts of narratives that illustrate the distinctive impairments in mentalizing trauma presented by participants of each profile were extracted from Trauma Meaning-Making Interviews and Adult Attachment Interviews narratives collected by the authors. Excerpts were expressly chosen to provide illustrations of the specific types of mentalizing impairments in relation to trauma observed in each latent profile.

**Table 5.** odds ratio of reaching the clinical cut-offs of a probable anxiodepressive disorder, PTSD disorder or a personality disorder of each profile of the latent profile analysis in comparison to participants without impairments in the mentalization of trauma (Profile 4)

	% above clinical cut-offs	Odds ratio (OR)	95% CI	p-value
<b>Any disorder</b>				
Profile 1 (Identified with the perpetrator)	39.3%	4.04	2.32, 7.01	<.001
Profile 2 (Functionally Grandiose)	26.0%	2.12	1.32, 3.42	.002
Profile 3 (Absorbed in trauma)	69.9%	12.98	7.16, 23.55	<.001
Profile 5 (Global impairments)	79.7%	23.61	12.08, 46.29	<.001
<b>Anxiodepressive disorder</b>				
Profile 1 (Identified with the perpetrator)	12.7%	1.90	0.90, 3.99	.09
Profile 2 (Functionally Grandiose)	8.0%	1.10	0.57, 2.11	.78
Profile 3 (Absorbed in trauma)	30.4%	5.12	2.59, 10.11	<.001
Profile 5 (Global impairments)	24.1%	3.93	1.92, 8.03	<.001
<b>Post-traumatic stress disorder</b>				
Profile 1 (Identified with the perpetrator)	16.7%	3.69	1.65, 8.26	.001
Profile 2 (Functionally Grandiose)	10.4%	2.12	1.02, 4.40	.044
Profile 3 (Absorbed in trauma)	44.6%	13.44	6.38, 28.34	<.001
Profile 5 (Global impairments)	44.7%	15.17	7.06, 32.62	<.001
<b>Personality disorder</b>				
Profile 1 (Identified with the perpetrator)	12.8%	6.91	3.31, 14.25	<.001
Profile 2 (Functionally grandiose)	8.4%	3.19	1.63, 6.26	.001
Profile 3 (Absorbed in trauma)	30.9%	15.19	7.39, 31.23	<.001
Profile 5 (Global impairments)	52.5%	32.66	15.42, 69.14	<.001

Note. Odds ratios were computed using Profile 4 participants (No impairment in the mentalization of trauma) as reference. Age, annual income, and education were entered as covariates. The cut-off for a probable anxiodepressive disorder (K10) was of 30 (Andrews & Slade, 2001). The cut-off for a probable PTSD (PCL-5) was of 33 (Weathers et al., 2013). The cut-off for a probable mild severity personality disorder (SIFS) was of 1.30 (Gamache et al., 2021). Among Profile 4 participants, 12.8% possibly had psychiatric disorder, 7% met the cut-off for a probable anxiodepressive disorder, 11% for a probable PTSD disorder and 4.8% for a possible personality disorder.

Interestingly, the distinct profiles were not associated with a self-reported assessment of the quality of antenatal attachment. This finding is at odds with previous studies using observational measures of parenting during the first two years following childbirth showing that compromised mentalization in relation to trauma was associated with more hostility toward the child, lower sensitivity to the child's emotional communication, and prospectively predicted disorganized mother-infant attachment relationships, even when considering the effect of important covariates such as the severity of abuse, unresolved/disorganized attachment representations and parental reflective functioning (Berthelot et al., 2015; Berthelot et al., *In Press*; Ensink et al., 2014). Our finding of an absence of association between mentalizing impairments in relation to trauma and the quality of maternal-fetal attachment is however in line with the previously documented absence of a direct association between a history of childhood trauma in pregnant women and expecting men and the quality of their thoughts and feelings regarding the child-to-be (Berthelot et al., 2019; Hinesley et al., 2020; Sancho-Rossignol et al., 2018). One possibility is that caregivers who show distortions in the way they reflect about their past traumas may have an idealized picture of their future relationship with their child and not fully recognize that they may encounter challenges as future parents when reporting about this relationship during the prenatal period. These challenges may become more apparent when children are born and especially when they are at the age of expressing hostile aggression triggering maternal trauma (Moser et al., 2023; Suardi et al., 2017).

This would further justify the need to intervene with this specific subgroup of parents with histories of trauma before childbirth. We cannot exclude however the possibility that different findings would have been observed using other measures of antenatal bonding or maternal representations, as suggested by previous evidence linking maternal trauma to lower time spent in attachment mode (Sancho-Rossignol et al., 2018) and disrupted prenatal representations of the child (Ahlfs-Dunn et al., 2022). Further research will be needed to understand the determinants and correlates of antenatal attachment and maternal representations in pregnant women who experienced childhood trauma.

Whereas the cross-sectional correlational design does not permit us to conclude about the direction of the association between profiles of trauma processing and external variables, the idea that intrapsychic conflicts, cognitive processing of experiences and representations of self and others underly symptoms and dysfunctions is central to developmental and psychological models of psychopathology (Cicchetti, 1991; Luyten et al., 2020) as well as to most psychotherapeutic approaches (Brent & Kolko, 1998) and would suggest that compromised mentalizing in relation to trauma contributes to poor adaptation, rather than being a mere correlate of psychopathology. Accordingly, the findings may provide leads for psychotherapeutic interventions. First, identifying specific areas where individuals struggle to mentalize trauma may help clinicians tailor personalized treatment plans. Second, recognizing and discussing these disruptions with patients contribute to seeing beyond the symptoms and can empower them to gain insight into

their own difficulties and engage more actively in the healing process. Finally, awareness of these disruptions can help clinicians to be more attuned to their patients' needs and emotions, which can strengthen the therapeutic alliance, improve outcomes, and prevent premature termination of treatment. For instance, using the FMTQ may enable clinicians to assess efficiently, in the first stages of a consultation process, a patient's specific struggles in mentalizing trauma and adjust the intervention consequently. As a case in point, when trauma is evoked in the therapeutic relationship, clinicians should be aware that Profile 1 patients may react with hostility, Profile 2 patients may deny any sense of vulnerability, Profile 3 patients may be overwhelmed by feelings of shame and momentarily lose their capacity to monitor thoughts and regulate emotions, and Profile 5 patients may become highly dysregulated. All these reactions pose important threats to the therapeutic alliance if clinicians are not prepared to deal with such trauma responses.

This study has several strengths including the use of a large sample of over 800 women who experienced childhood maltreatment, the use of well-validated instruments, and its unique focus on interindividual variability in mentalization processes in the context of trauma, thus offering valuable insights and paving the way for further research in this critical area (Ensink et al., 2015, 2023; Lorenzini et al., 2018; Luyten & Fonagy, 2019). Despite the strengths of this study, several limitations should be acknowledged which may impact the generalizability and interpretation of the findings. First, the exclusive reliance on self-reported measures for assessing childhood maltreatment, mentalization processes and outcomes may have led to recall and social desirability biases. Further studies using clinical interviews, observational measures (for instance of parenting) and interview-based assessments of trauma-specific reflective functioning will be required to fully capture the nuances of the complex psychological phenomena at play. Second, despite the strong theoretical and clinical grounds of our a priori hypotheses, the cross-sectional nature of this study restricts our ability to make causal inferences. Longitudinal research starting in childhood/adolescence will be necessary to better understand the developmental trajectories of mentalization in individuals with a history of childhood trauma and its role in the onset of psychopathology and dysfunctions. Finally, this study was conducted on a large community sample of female participants, potentially limiting the generalizability of our findings to the broader population. It is crucial to acknowledge that males and females may differ in their experiences of childhood maltreatment and their responses to trauma (Berthelot, Garon-Bissonnette, et al., 2022; Helpman et al., 2017). Future research should aim for balanced sex and gender representations to ensure a more comprehensive understanding of the studied phenomena.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/S0954579424001019>.

**Acknowledgments.** We thank the mothers and fathers who made this research possible and gratefully acknowledge the contributions of Roxanne Lemieux, Annie Lemieux, Sylvie Moisan, Christine Drouin-Maziade, Vanessa Bergeron, Gabrielle Duguay, and Sabrina Bernier.

**Funding statement.** This work was supported by the Social Sciences and Humanities Research Council of Canada (grant #430-2017-00994, Principal Investigator, N.B.), the Canada Research Chair in Developmental Trauma (grant #950-232739, Principal Investigator, N.B.), and the Public Health Agency of Canada (grant #1617-HQ-000015, Principal Investigator, N.B.).

**Competing interests.** None.

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