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CLINICAL RESEARCH ARTICLE



Poly-victimization and post-traumatic stress symptoms in care experienced youth: the mediating role of mentalizing

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ABSTRACT

Background: Youth with care experience have often been affected by repeated victimization and exhibit high rates of post-traumatic stress symptoms (PTSS). Several studies underline the buffering role of mentalizing against the harmful effects of childhood adversity.

Objective: This study aims to assess whether lower mentalizing mediates the relationship between poly-victimization and PTSS in youth with care experience.

Method: 103 participants (75% female) with care experience, who were not currently or had not previously lived with their biological parents, aged 14–21 years ($M = 17.81$, $SD = 2.24$), completed the Juvenile Victimization Questionnaire (JVQ-R2), the Reflective Functioning Questionnaire (RFQ), and the Child Revised Impact of Events Scale (CRIES-8). Using structural equation modelling mentalizing was tested as a mediator on the relationship of poly-victimization and PTSS.

Results: Juvenile victimization experiences significantly predicted PTSS ($\beta = .37$, $p = .008$) and lower mentalizing ($\beta = .31$, $p = .006$), which in turn predicted PTSS ($\beta = .56$, $p < .001$). The relationship between poly-victimization and PTSS was partially mediated by mentalizing ($\beta = .17$, 95%-CI [.06, .38], $p = .002$).

Conclusions: Results suggest that poly-victimization is associated with lower mentalizing and higher PTSS. Lower mentalizing, in turn, is linked to higher PTSS. Findings highlight the potential of interventions fostering mentalizing in care-experienced youth.

Poli-victimización y síntomas de estrés postraumático en jóvenes con experiencia de cuidado: el papel mediador de la mentalización

Antecedentes: Los jóvenes con experiencia de cuidado a menudo han sido afectados por victimización repetida y presentan elevadas tasas de síntomas de estrés postraumático (SEPT). Varios estudios destacan el papel amortiguador de la mentalización frente a los efectos nocivos de la adversidad infantil.

Objetivo: Este estudio pretende evaluar si un menor nivel de mentalización media la relación entre la poli-victimización y los SEPT en jóvenes con experiencia de cuidado.

Método: Participaron 103 jóvenes (75% mujeres) con experiencia de cuidado, es decir, que no viven o no han vivido con sus padres biológicos, de entre 14 y 21 años ($M = 17,81$; $DE = 2,24$). Completaron el Cuestionario Juvenil de Victimización (JVQ-R2 por sus siglas en inglés), el Cuestionario de Funcionamiento Reflexivo (RFQ por sus siglas en inglés) y la Escala Revisada de Impacto de Eventos en Niños (CRIES-8 por sus siglas en inglés). Se empleó un modelado de ecuaciones estructurales para probar la mentalización como una variable mediadora en la relación entre poli-victimización y SEPT.

Resultados: Las experiencias de victimización juvenil predijeron significativamente los SEPT ($\beta = 0,37$; $p = 0,008$) y un nivel de mentalización más bajo ($\beta = 0,31$; $p = 0,006$), el cual, a su vez, predijo los SEPT ($\beta = 0,56$; $p < 0,001$). La relación entre poli-victimización y SEPT estuvo parcialmente mediada por la mentalización ($\beta = 0,17$; IC 95% [0,06, 0,38]; $p = 0,002$).

Conclusiones: Los resultados sugieren que la poli-victimización se asocia con una menor capacidad de mentalización y con mayores síntomas de estrés postraumático, y que a su vez esa menor mentalización contribuye al agravamiento de dichos síntomas. Estos hallazgos ponen de relieve el potencial de las intervenciones destinadas a fortalecer la mentalización en jóvenes con experiencia de cuidado.

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Cuidado de crianza; mentalización; experiencias adversas en la infancia; abuso infantil; protección a la infancia

HIGHLIGHTS

- Poly-victimization among youth with care experience is associated with higher rates of post-traumatic stress symptoms and lower mentalizing.
- Lower mentalizing serves as a partial mediator in the link between poly-victimization and post-traumatic stress symptoms.
- Findings underline the potential of interventions fostering mentalizing in care-experienced youth.

1. Introduction

1.1. Youth with care experience, poly-victimization, and PTSS

Millions of children worldwide for at least some period of their lives do not reside with their biological parents (Unicef, 2024). Instead, they live in various alternative care settings, either family-based, such as adoptive or foster care, or in residential care. Most children in alternative care have experienced an adverse history of violence, abuse, and neglect at an early age (Åsen et al., 2024; Bürgin et al., 2023; Lehmann et al., 2020; Oswald et al., 2010). Persistent child maltreatment (i.e. neglect, physical, sexual, and emotional abuse), inadequate care and insufficient parenting skills are the leading causes for alternative care placements, e.g. in Germany (Statistisches Bundesamt, 2024). Many affected youth face additional adversities such as prenatal substance exposure, parental substance abuse, parental delinquency or financial problems (Garcia et al., 2017; Oswald et al., 2010). Alternative care can provide crucial protection when family environments threaten children's safety and well-being. However, placement in an alternative care setting itself can be seen as a critical life event, as it is associated with separation from attachment figures and familiar surroundings (Rubin et al., 2007). Placement instability and missing attachment figures are further challenges associated with alternative care (Lionetti et al., 2015; McGuire et al., 2018).

The accumulation of those risk factors not only increases the likelihood of emotional, behavioural, social, and developmental problems (Bilaver et al., 2020) but also for subsequent victimization experiences (Blom et al., 2014; Jaffe et al., 2019). Studies indicate that even after placement, many youth continue to experience victimization by peers, adult caregivers or intimate partners (Åsen et al., 2024; Katz et al., 2017). Rates of poly-victimization, the exposure to multiple forms of victimization, both contemporaneous and cumulative are especially high within youth with care experience, with studies consistently reporting higher rates than in community samples (Cyr et al., 2012; Emmerich et al., 2024; Greger et al., 2015; Segura et al., 2015). Approximately 45% to 54% of care-experienced youth report past-year poly-victimization (Cyr et al., 2012; Segura et al., 2015). However, studies on poly-victimization in youth with care experience are still rare and methodological differences in defining and measuring poly-victimization hamper comparisons of prevalence rates (Loomis et al., 2020; Segura et al., 2018).

Research on poly-victimization has underlined the damaging effects on well-being, internalizing and externalizing problems (Haahr-Pedersen et al., 2020; Hughes et al., 2017). Cross-context exposure to

violence and victimization can profoundly affect youth, fostering a life condition in which no environment is perceived as free from harm (Turner et al., 2017). This not only represents an accumulation of significant stressors but also likely undermines social and personal resources that would typically buffer against the adverse effects of victimization and influence future interactions (Turner et al., 2010). Several studies document a close association between poly-victimization and trauma symptoms or post-traumatic stress disorder (PTSD) (Cyr et al., 2017; Finkelhor et al., 2007; Ford & Delker, 2018). Post-traumatic stress symptoms (PTSS) are very frequent within care-experienced youth (Engler et al., 2020; Lehmann et al., 2020), with lifetime prevalence of PTSD roughly twice that of same-age counterparts in community samples (McMillen et al., 2005; Salazar et al., 2013). Youth in care who experienced multiple trauma are significantly more likely to meet diagnostic criteria for PTSD compare to those who had experienced a single trauma (Salazar et al., 2013). Moreover, studies indicate that PTSD rates in youth in care are higher than in trauma-exposed youth in the general population, likely due to the greater prevalence of interpersonal trauma and poly-victimization (Salazar et al., 2013). However, not all adolescents with a history of victimization experiences develop PTSS. Yet, little is known about protecting factors within care-experienced youth against the development of PTSS.

1.2. The potential mechanism of mentalizing in the context of trauma

In recent years, numerous studies have explored the role of mentalizing in both risk and resilience processes within the context of trauma (Ensink et al., 2023; Fonagy et al., 2017; Luyten et al., 2020). Mentalizing, also known as reflective functioning, is defined as the imaginative ability to understand one's own and others' behaviour in terms of intentional mental states, such as feelings, desires, wishes, attitudes, and goals (Luyten et al., 2020). Mentalizing is an umbrella concept that integrates a range of related concepts that are focused on various aspects of social cognition, including empathy, mindfulness, theory-of-mind, alexithymia and meta-cognition, with a special consideration of attachment theory and the processing of biographically relevant relationship experiences (Luyten et al., 2020). Effective mentalizing allows the adaptive integration of these processes and enables individuals to attribute meaningful interpretations to behaviour and social interactions, rendering both their own behaviour and that of others more comprehensible (Taubner & Curth, 2013). In contrast, lower mentalizing is marked by ineffective or limited use of mental-state information. Mentalizing can be disrupted along a spectrum, ranging from

excessive certainty about mental states (hypermentalizing) to significant difficulty attributing mental states (hypomentalizing) (Fonagy et al., 2016). Hypermentalizing involves overconfidence in interpreting thoughts and emotions, while hypomentalizing leads to heightened uncertainty and doubt regarding one's own and others' thoughts, motivations, and behaviours. Both tendencies inhibit to benefit from social learning.

The ability to mentalize is a developmental achievement that evolves in the context of secure attachment relationships with sensitive and responsive caregivers (Allen et al., 2011; Luyten et al., 2017). Mentalizing develops progressively and is marked by milestones that reflect a growing complexity in cognitive and emotional processing (Allen et al., 2011). From infancy, humans start attributing intentionality to others (Kovács et al., 2010). In early childhood 'theory of mind' develops, during primary school, children develop a more nuanced understanding of the behaviour and thoughts of others and their own (Ensink & Mayes, 2010). In adolescence mentalizing becomes more sophisticated and adult-like (Poznyak et al., 2019). However, demands and developmental tasks in adolescence may temporarily impede this process (Taubner & Volkert, 2016).

Since mentalizing initially develops within early attachment relationships, especially early adversity, occurring during sensitive developmental windows, can disrupt these milestones, potentially leading to severe impairments in mentalizing (Fonagy et al., 2023). Studies underline that early onset of maltreatment during these critical periods of cognitive and social development is associated with greater impairments in emotional and cognitive functioning (Teicher et al., 2016; Vonderlin et al., 2018). Children who experience early abuse and neglect often develop insecure and disorganized attachment (Cyr et al., 2010). The development of attachment and mentalizing being interconnected, individuals with insecure attachment often exhibit delayed or impaired mentalizing abilities (Fonagy et al., 2023; Sharp et al., 2012). Growing up in hostile environments, facing violence, neglect, and abuse from close caregivers, inhibits experiences of sensitive and reliable co-regulation (Luyten et al., 2020). This can lead to a bias against internal cues to mental states and a potential hypersensitivity to external indicators of mental states (Rüfenacht et al., 2023). The contemporary understanding of mentalizing emphasizes that other social contextual factors also play a crucial role in its development (Fonagy et al., 2023; Luyten et al., 2020). Interactions with peers or members of the community can further foster or inhibit the development of mentalizing capacities and epistemic trust, the ability to trust others as sources of social information.

A meta-analysis including 23 studies and 3910 participants underlined a negative association between childhood maltreatment and mentalizing capacity (Yang & Huang, 2024). Another meta-analysis found consistently lower mentalizing in patients with PTSD compared to trauma-exposed and healthy controls (Stevens & Jovanovic, 2019). The authors concluded that social cognitive deficits, such as impaired mentalizing, are a preexisting risk factor for PTSD (Stevens & Jovanovic, 2019). In line, recent research argues that mentalizing difficulties represent less a characteristic of mental disorders, but rather an intermediary mechanism of change involved in the processing of aversive experiences (Fonagy et al., 2017).

Several studies found empirical evidence for the mediating role of mentalizing in the context of trauma: in a sample of adults who experienced childhood trauma and neglect, lower mentalizing, measured by severity of hypo- and hypermentalizing, mediated the link between childhood trauma and PTSD symptoms (Huang et al., 2020). Also, the relationship between adverse childhood experiences and dissociation in adult patients has been shown to be mediated by impaired mentalizing (Wagner-Skacel et al., 2022). A study using observer-based measures in adults with experience of childhood maltreatment confirmed that increased mentalizing is associated with lower PTSS (Ensink et al., 2023). Research on the buffering role of mentalizing in adolescents is still sparse (Cropp et al., 2019; Taubner & Volkert, 2016). A study on adolescent inpatients found reflective functioning partially mediated the association between maltreatment and identity diffusion (Penner et al., 2019). Similar results were found within a general population sample, where the link between multiple types of childhood trauma exposure and PTSS in adolescents was partially mediated by hypomentalizing (Doba et al., 2022).

These and additional studies (Berthelot et al., 2019; Borelli et al., 2019; Chiesa & Fonagy, 2013; Venta et al., 2016) support the idea that the ability to mentalize can be considered a buffering factor when processing traumatic experiences. Mentalizing capacity is believed to shield individuals from stress-induced states and related psychological symptoms by contributing to the integration and reappraisal of aversive experiences, thus promoting a coherent sense of self despite such experiences (Fonagy et al., 2017; Luyten et al., 2020). Impaired mentalizing, in turn, may hinder the individual from effectively making use of current attachment relationships or social support structures to undermine the negative impact of trauma (Sharp et al., 2012). Deficits in social cognition may further place individuals at increased risk for further revictimization (Deprince et al., 2005).

Based on the high prevalence of victimization experiences, and high rates of insecure or

disorganized attachment within care-experienced youth, it can be assumed that affected children are faced with difficulties in developing mentalizing capacities. A meta-analysis involving 399 children in institutional settings found rates of 28% insecure and 54% disorganized attachment patterns (Lionetti et al., 2015). Not only might biological parents not be capable of providing a mentalizing-promoting environment, but continuous disruptions in care-giving relationships and further victimization experiences in different settings might aggravate the development of mentalizing abilities. In alternative care settings, such as residential care, the development of compensatory relationships with peers and adults can be influenced by various factors. These settings may provide significant opportunities, as professional staff often strive to facilitate positive interactions and foster supportive relationships among peers, caregivers, and staff members (Costa et al., 2022). However, challenges such as high staff turnover, limited opportunities for individualized attention, and frequently changing peer groups can impede the formation of trusting relationships (Euser et al., 2014). In line, reduced mentalizing has been reported within youth in care (Muzi & Pace, 2022; Zaccagnino et al., 2015). However, studies on the mediating role of mentalizing within adolescents with care experiences are rare. One study of children aged 5–14 years in foster care, who were exposed to parental drug abuse, indicated that children with higher mentalizing had significantly fewer post-traumatic stress and dissociative symptoms (Ostler et al., 2010).

To our knowledge, no prior studies have explored the interrelation of poly-victimization, PTSS, and mentalizing in an adolescent sample with care experience. Given that mentalizing is an ability that can be enhanced through psychotherapeutic treatment (Fonagy & Adshead, 2012; Taubner & Volkert, 2016) and preventive interventions (Adkins et al., 2022; Twemlow et al., 2001; Valle et al., 2016), and considering the challenges in improving mental health problems among care-experienced youth (Dubois-Comtois et al., 2021), it is crucial to grasp its significance within this context.

This study investigates the relationship between poly-victimization, mentalizing, and PTSS, and examines whether lower mentalizing mediates the association between poly-victimization and PTSS in youth with care experience. We hypothesize that participants with more lifetime victimization experiences report higher rates of current PTSS and lower mentalizing. A positive association between lifetime poly-victimization and impairments in mentalizing is expected. Further, we assume that lower mentalizing may be a mediator of the relationship between lifetime poly-victimization and current PTSS.

2. Method

2.1. Procedure and participants

Data from the present study was collected as part of a randomized controlled trial (for a detailed description of the study, see Wagner et al. (2022)), approved by the ethics committee of the Medical School Berlin. Care-experienced youth were defined as adolescents between 14 and 21 years, who spend some time of their lives in foster or adoptive families or residential care. This age range aligns with the definition of ‘adolescents’ provided in the German Guidelines for Psychotherapy (G-BA, 2017). Additionally, in Germany, youth welfare services are typically provided until the age of 21. In 2023, around 128,000 young people in Germany were living in residential care and around 87,000 in a foster family (Statistisches Bundesamt, 2024). The term residential care refers to various forms of institutional placements, ranging from multi-group facilities to supervised individual living arrangements. In this study, residential care excludes placements made primarily for juvenile justice reasons and refers only to settings serving youth placed due to care and protection needs. While younger children are more frequently in foster care, the larger proportion of adolescents is placed in residential care. The distribution of boys and girls in alternative care is roughly equal. Recruitment took place from September 2021 to October 2023. To recruit a representative sample, we contacted all 600 available youth welfare offices, over 800 residential groups, more than 50 associations for foster and adoptive families, and care-leavers in Germany. Further, information about the study was disseminated via social media and newspapers. Participants registered via the project’s website, provided informed consent via a digital double opt-in method in line with ethical and data safety regulations. Data was collected via an online survey.

A total number of 103 participants filled out the online questionnaires. 75% of the participants were female ($n = 77$), 20% male ($n = 21$) and 5% gender diverse ($n = 5$), mean age of the sample was 17.82 years ($SD = 2.24$; range: 14–21 years; 2 missing data). The average time spent in care was 6.74 years ($SD = 5.26$; 5 missing data), ranging from just getting into care (2 weeks) to the entire life (20.6 years). Most participants were currently living in residential care ($n = 59$; 57%), 19 (19%) in foster, three (3%) in kinship, and six (6%) in adoptive care. Ten (10%) participants were living on their own, six (6%) were living with a biological parent again. The majority (85%; $n = 88$) of the participants were born in Germany, nine participants were born in Austria (9%) and the rest elsewhere (such as Iran, England). Further, 62% ($n = 64$) of the participants were currently going to school, 6% ($n =$

6) to university, 14% ($n = 14$) completing an apprenticeship. Participants reported on average 12.53 different victimization experiences in their life-time, with only one participant reporting no victimization experience at all. 62% reported PTSS above the clinical cut-off (CRIES ≥ 17). Descriptive data is represented in Table 1.

2.2. Measures

2.2.1. Sociodemographics

The following sociodemographic information was assessed: age, self-assigned gender (female, male, diverse), country of birth, current living situation (e.g. foster family, adoptive family, institutional care, own apartment), length of alternative care, highest obtained educational degree.

2.2.2. Poly-Victimization

Lifetime poly-victimization was measured by the German Juvenile Victimization Questionnaire (JVQ-R2) (Finkelhor et al., 2011). The questionnaire was translated into German, back-translated, and showed high concordance with the original. The items were translated into German by members of the research team and subsequently back-translated into English by a professional translation service. The back-translation was compared with the original English version and demonstrated a high degree of concordance. This German version has not yet undergone formal validation. The screening questionnaire comprises 34 offenses against youth, addressing five distinct areas of concern: (1) conventional crime (8 items); (2) child maltreatment (4 items); (3) peer and sibling victimization (6 items); (4) sexual victimization (7 items) and (5) witnessing and indirect (9 items) victimization. Each item is scored based on whether the victimization occurred at any point in the individual's lifetime with yes (1) or no (0), leading up to a total score with higher scores indicating greater victimization exposure (Finkelhor, Ormrod, et al., 2005). Item 26 (statutory rape) was excluded because it cannot be definitively categorized as sexual victimization within

the study population's age group. The JVQ-R2 has been slightly adapted to the German Law and age group. A sumscore over all 33 victimization experiences and five module scores were calculated. The JVQ has been shown to have adequate test-retest reliability ($\kappa = .63$) and high internal consistency ($\alpha = .80$; Finkelhor, Hamby, et al. [2005]). In the present study, Cronbach's alpha of the sumscore was good ($\alpha = .90$). The internal consistency of the five modules can be considered satisfactory given the low number of questions ($\alpha = .61$ to $\alpha = .77$; Tavakol and Dennick [2011]). A systematic review on measurement of child maltreatment, recommended the JVQ-R2 for a detailed inquiry of abuse and neglect (Mathews et al., 2020).

2.2.3. Post-traumatic stress symptoms

To assess PTSS, the 8-item Child Revised Impact of Events Scale (CRIES-8) was used (Perrin et al., 2005). This scale measures intrusion and avoidance over the past week. Items are rated from 0 (none) to 5 (a lot), with total scores ranging from 0 to 40. A score of 17 or above indicates a likely PTSD diagnosis (Perrin et al., 2005). An internal consistency of $\alpha = .86$, and a test-retest reliability of .78 was reported (Verlinden et al., 2014). Cronbach's alpha in the present study were good for the total score (.86), intrusion (.81), and avoidance (.76).

2.2.4. Mentalizing

The Reflective Functioning Questionnaire (RFQ) (Fonagy et al., 2016) was used to measure mentalizing. The RFQ is an eight-item questionnaire with a 7-point Likert scale, ranging from 'completely disagree' to 'completely agree'. The authors postulate a two-dimensional structure of the questionnaire with the subscales certainty (RFQc) and uncertainty (RFQu) about mental states. RFQu indicates the extent the participant agreed with statements such as 'Strong feelings often cloud my thinking', high scores indicating a high degree of hypomentalizing, a lack of use of mental states to explain behaviours. RFQc indicates the extent to which participants disagree with items such as 'People's thoughts are a mystery to me'. RFQc items are recoded so that low scores reflect better usage of mental state information and adaptive levels of certainty about mental states, high scores are assumed to be indicative of a high degree of hypermentalizing. The RFQ has been validated and used in adolescent samples (Badoud et al., 2015; Bizzi et al., 2022; Gambin et al., 2020) and showed acceptable internal consistency (Cronbach's alpha of .73 for the RFQc subscale and of 0.67 for the RFQu subscale) and retest-reliability ($r = .54 - .70$) (Badoud et al., 2015). Cronbach's alphas in the present study for RFQu (.69), for RFQc (.73) were acceptable. Recent studies raised concerns about the scoring procedure

Table 1. Descriptive data of reported victimization experiences, PTSS and mentalizing.

	<i>M ± SD, range/</i>
Number of lifetime victimization	12.53 ± 6.66, 0–30
Types of victimization experiences	
Witnessing	1.73 ± 1.45, 0–7
Maltreatment	2.30 ± 1.24, 0–4
Peer and sibling victimization	2.25 ± 1.52, 0–6
Sexual victimization	1.73 ± 1.82, 0–6
Conventional crime	4.56 ± 2.43, 0–9
PTSS	18.65 ± 10.80, 0–40
Avoidance	9.73 ± 5.96, 0–20
Intrusion	8.91 ± 5.81, 0–20
Uncertainty about mental states	0.99 ± 0.71, 0–2.67
Certainty about mental states	0.73 ± 0.69, 0–2.83

N = 103

and structural validity of the questionnaire (Horváth et al., 2023; Spitzer et al., 2021). A German validation study (Spitzer et al., 2021) recommended a scale consisting of six items that exclusively depicts the subjects' uncertainty regarding mental states. In the present study, both scorings, the RFQ6 recommended by Spitzer et al. (2021) as well as the original one (Fonagy et al., 2016) were tested. Cronbach's alphas in the present study for RFQ6 was .74.

2.3. Statistical analysis

Associations among poly-victimization, mentalizing, PTSS, age, and female gender were assessed by calculation of Spearman correlation coefficients. The only missing data pertained to 2 participants for age and 5 participants for time spent in care. These participants were excluded from the descriptive analysis. Due to the small sample size diverse gender participants were excluded from the correlation analysis. A p -value threshold of $<.05$ was considered to determine statistical significance. The sample was scanned for outliers using the Mahalanobis distance. Hypotheses were tested using a structural equation model (SEM). The bootstrapping maximum likelihood estimator in SEM was applied, to address non-normality and achieve robust results. The measurement model consisted of the latent variables of poly-victimization, mentalizing and PTSS. The latent variable of poly-victimization was estimated through the five JVQ modules: conventional crime; child maltreatment; peer and sibling victimization; sexual victimization and witnessing and indirect victimization. The latent variable mentalizing was assessed by the RFQ subscales (RFQc and RFQu), with higher scores indicating lower mentalizing. An alternative model, assessing mentalizing by the RFQ6 score recommended by Spitzer et al. (2021) was tested. The latent variable PTSS was derived from the subscales of the CRIES-8 (avoidance and intrusion), with higher scores indicating greater severity of symptoms. Before a structural model was performed, confirmatory factor analysis was used to examine whether a measurement model provided an acceptable fit to the data (Anderson,

1988). The structural model was employed to examine the relationships between latent constructs as per the hypotheses formulated. Model fit was evaluated using fit indices recommended by Hu and Bentler (1999): (1) the value of the root mean square error of approximation (RMSEA) along with the 90% confidence intervals, and (2) the comparative fit index (CFI) and (3) the standardized root mean square residual (SRMR) (good model fit: $RMSEA \leq .06$, $CFI \geq .95$, $SRMR \leq .08$; acceptable model fit: $RMSEA \leq .08$; $CFI \geq .90$ $SRMR \leq .08$). The RMSEA is known to be sensitive to sample sizes and small degrees of freedom (Kenny et al., 2014), we therefore expected only acceptable fit for this index. Since χ^2 tests for exact model fit and is dependent on the sample size, it is not used for interpretation in this study. Bootstrapping based on 10,000 resamples and 95% confidence interval was applied to ensure robust results. The data analysis was conducted using the programmes SPSS 25 (IBM, 2017b) and AMOS 25 (IBM, 2017a).

3. Results

3.1. Descriptive statistics

Table 2 represents intercorrelations between the included variables. Most variables were correlated as expected. A significant correlation between female gender and intrusion ($\rho = .33$, $p = .001$) and sexual victimization ($\rho = .39$, $p < .001$), peer victimization ($\rho = .22$, $p = .031$), maltreatment ($\rho = .31$, $p = .002$), indicated higher symptoms of PTSS and victimization scores in females. A significant correlation between age and RFQu ($\rho = -.28$, $p = .006$) indicated less uncertainty about mental states in older participants. Based on those significant results, age, and gender were controlled for in SEM analyses.

3.2. Structural equation model

The measurement model provided an acceptable fit to the data in the confirmatory factor analysis ($\chi^2 (24) = 37.600$, $p = .038$; $CFI = .963$, $RMSEA = .075$ (.018–0.118), $SRMR = .062$). All loadings of the observed

Table 2. Intercorrelations of study variables.

	1. ^a	2.	3.	4.	5.	6.	7.	8	9.	10.
1. Age ^a	–	–	–	–						
2. Female	–.002	–	–	–						
3. Witnessing	.037	.161	–	–						
4. Sexual	.092	.389**	.375**	–						
5. Peer	–.114	.219*	.589**	.516**						
6. Maltreatment	.104	.314**	.470**	.350**	.373**					
7. Crime	–.042	.187	.691**	.442**	.721**	.524**				
8. Uncertainty	–.280**	.281**	.061	.277**	.344**	.074	.260**			
9. Certainty	–.014	–.035	–.010	–.121	–.130	.070	–.122	–.564**		
10. Avoidance	–.072	.184	.123	.364**	.358**	.218*	.398**	.557**	–.353**	
11. Intrusion	–.100	.332**	.218*	.440**	.426**	.259**	.449**	.548**	–.217*	.679**

Notes: ** $p < .01$; * $p < .05$. $N = 98$; ^a $N = 96$, due to missing data; Uncertainty = Uncertainty about mental states; Certainty = Certainty about mental states.

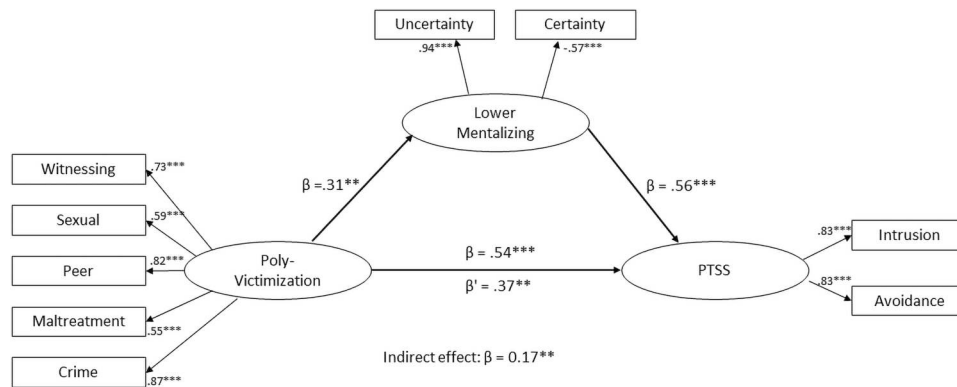


Figure 1. Results of the mediation model.

Notes. $N = 103$, β' = direct effect *** $p < .001$ ** $p < .01$.

variables on the latent variables and the correlations among all latent variables were statistically significant ($p < .001$). The model fit of the structural equation model with the latent construct poly-victimization as the independent variable, mentalizing as the mediating variable, and current PTSS as the dependent variable can be considered adequate ($\chi^2(24) = 37.600$, $p = .038$; CFI = .963, RMSEA = .075 (.018–0.118), SRMR = .062). To address potential confounding factors, age and gender were incorporated into the model. However, gender did not exhibit a significant association with the latent variables and instead resulted in a decrease in the model fit. Similarly, while age showed a significant correlation with mentalizing, it did not demonstrate significant correlations with the independent or dependent variables and led to a decrease in the model fit. Consequently, neither gender nor age were retained in the final structural equation model (Figure 1). The model using the RFQ6 scoring recommended by Spitzer et al. (2021) showed similar, but a slightly decreased fit, therefore results based on the latent variable of mentalizing assessed by RFQu and RFQc are reported.

A significant direct effect of poly-victimization on PTSS was observed ($\beta = .37$ with 95%-CI [0.11, 0.58], $p = .008$), indicating that poly-victimization predict current PTSS. Mentalizing was predicted by poly-victimization ($\beta = .31$ with 95%-CI [0.09, 0.52], $p = .006$) and in turn predicted PTSS ($\beta = .56$ with 95%-CI [0.24, 0.78], $p < .001$). The relationship between poly-victimization and PTSS is partially mediated by lower mentalizing (indirect effect: $\beta = .17$, 95%-CI [.06, .38], $p = .002$). In summary, the direct and indirect effects exerted a total effect of $\beta = .54$, 95%-CI [.33, .72], $p = .006$ on the measured PTSS and explained 57% of the variance in the dependent variable.

4. Discussion

The current study examines the interrelationship between poly-victimization, mentalizing, and PTSS in adolescents with care experience. We observed

high rates of PTSS in the sample, over 62% of participants scored at levels indicative of a probable PTSD diagnosis. These rates are similar to a Norwegian study, where over half of foster care youth scored at or above the clinical cut-off for PTSS (Lehmann et al., 2020). On average, participants reported experiencing 12 different victimization experiences in their lifetime, aligning with prior research showing high rates of lifetime victimization in care-experienced youth (Cyr et al., 2012; Segura et al., 2015). Similarly, a study conducted in Spain using the same measurement tool, involving youth in a comparable age range found an average of 12 lifetime victimization experiences (Fernández-Artamendi et al., 2020). For the RFQ no cut-off scores exist (Anis et al., 2020). However, studies within community samples in comparable age ranges in Italy (Bizzi et al., 2022) and Iran (Moussavi et al., 2021) found lower scores for RFQ uncertainty and higher scores for RFQ certainty, indicating lower mentalizing in our sample.

As anticipated, we found a substantial correlation between poly-victimization and PTSS. These findings align with prior research (Cyr et al., 2017; Finkelhor et al., 2007) and suggest that an accumulation of victimization experiences raises the likelihood of PTSS within youth with care experience.

Moreover, our study showed that poly-victimization predicts lower mentalizing. This finding resonates with recent research, including a meta-analysis, which identified a moderate negative correlation between childhood maltreatment and mentalizing capacity (Yang & Huang, 2024). This might be explained by the challenges maltreating parents face in understanding their children's affective expressions and engaging in emotion-focused discussions (Edwards et al., 2005). From a child's perspective, experiencing abuse and encountering malevolent intentions from others may contribute to a defensive inhibition of mentalizing abilities to reduce anxiety, particularly when the abuser is an attachment figure (Ensink et al., 2016; Fonagy et al., 2023). Consistent with the contemporary understanding of mentalizing, which emphasizes the

influence of various social contexts on its development (Fonagy et al., 2023; Luyten et al., 2020), our study expanded beyond the effects of child maltreatment and abuse within the immediate family. We investigated additional victimization experiences in diverse social settings, such as community violence or peer victimization. Our findings indicate that poly-victimization, characterized by exposure to multiple forms of victimization across different contexts, significantly influences the development of mentalizing.

The study focused on whether the capacity to understand one's own and others' behaviour based on inner psychological motives acted as a mediator in the relationship between poly-victimization and PTSS. It was found that mentalizing partially mediated this relationship, indicating that lower mentalizing abilities increase the risk of developing PTSS after exposure to victimization among youth with care experience. This finding is consistent with previous studies, supporting the hypothesis that mentalizing represents an intermediate mechanism of change involved in the intrapsychic processing of aversive experiences (Berthelot et al., 2019; Fonagy et al., 2017; Huang et al., 2020; Penner et al., 2019). Mentalizing may contribute to PTSS through various complex pathways and mechanisms (Doba et al., 2022; Ensink et al., 2023). It has been argued that mentalizing might function as an 'intrapsychic filter system', enabling individuals to reflect on their mental states, accurately assess the mental states of others, and avoid impulsive decisions (Allen et al., 2011). Mentalizing enables the perception of emotions, which in turn fosters a reactive engagement with the experience (Borelli et al., 2015). The interpretative role of mentalizing allows reappraisal of experience (Fonagy et al., 2017). In contrast, mentalizing difficulties play an important role in the development of maladaptive emotion regulation strategies by making it challenging to understand own mental state as well as the mental states of others (Doba et al., 2022; Schwarzer et al., 2021). Doba et al. (2022) found a moderate association between impaired mentalizing and maladaptive cognitive and interpersonal emotion regulation strategies in an adolescent sample. In their path model, these strategies, in turn, were associated with PTSS, such as re-experiencing the initial trauma, excessive arousal, and avoidance of stimuli associated with the trauma (Doba et al., 2022).

The findings also align with the social-cognitive model of PTSD (Sharp et al., 2012), which integrates the theory of mentalizing concept with cognitive-behavioural, schema-based models of PTSD. According to this model, early trauma with caregivers contribute to the formation of maladaptive attachment-based schemas of self and others. Maltreated infants perceive their attachment figures as unavailable, frightening, unresponsive, and insensitive to their needs for

contact and autonomous exploration, thus acquiring event-based information that shapes their attachment schemas. Over time, these schemas filter the ways the person obtains, organizes, and operates on attachment-relevant social information. In novel potentially traumatic experiences, such as sexual abuse, rejection or bullying, the attachment-related schema is activated, leading to maladaptive social-cognitive processing at the procedural level of automatic thoughts. Consequently, impaired social cognition and mentalizing hinder individuals from effectively utilizing current attachment relationships or social support structures to mitigate the negative impact of trauma. The reduction of the potentially protective social support and connection, increases the individual's risk of developing the behavioural, cognitive, and emotional PTSS (Sharp et al., 2012).

Considering the perspective of epistemic trust (Fonagy et al., 2023), individuals with insecure attachments, resulting from maladaptive interactions with insensitive or abusive attachment figures during childhood, may develop a fundamental mistrust in the information provided by others, viewing it as potentially unreliable. Placing a child in an alternative care setting, ideally, facilitates the creation of a secure environment where trusting relationships can be forged. These relationships might help restoring mentalizing abilities and epistemic trust (Fonagy et al., 2023). Indeed, if this process is hindered, and the child continues to face adversity and victimization from different sources and in various social contexts, this can exacerbate existing mentalizing deficits and further impede the development of epistemic trust. McCrory et al. (2022) argue that maltreatment-related neurocognitive changes, such as altered threat perception and diminished trust, indirectly elevate the risk of psychiatric disorders by disrupting social functioning. This disruption, referred to as 'social thinning', reduces the quality and quantity of relationships, limiting opportunities for positive social interactions and trust-building. Such a reduction in social connections may exacerbate impaired mentalizing, as diminished interpersonal engagement impairs the ability to interpret and respond to others' mental states.

The study's findings underscore the potential importance of fostering stable and trustful social environments for youth with care experience. While the cross-sectional design of the present study does not allow any causal interpretations, prior research highlights the value of interventions that enhance mentalizing for improving social and emotional functioning (Luyten et al., 2020). Different forms of psychotherapy, such as cognitive behavioural therapy (Babl et al., 2021), interpersonal psychotherapy or psychodynamic treatment, have been shown to enhance mentalizing (Taubner & Volkert, 2016). Specific mentalization-based

interventions for foster, adoptive, and residential care settings have reported positive outcomes (Adkins et al., 2022; Domon-Archambault et al., 2020; Downes et al., 2022; Hagelquist et al., 2023; Ingley-Cook & Dobel-Ober, 2013; Midgley et al., 2021).

The study has several notable limitations. First, the present sample is not representative of the population due to a lower percentage of male participants. Potential bias may arise from the study's recruitment within an RCT focused on a prevention programme, which likely attracted more female participants. The relatively small sample size also limits the study's statistical power. The highly heterogeneous sample of youth with care experience prevented an examination of the impact of different care settings (e.g. foster care vs. residential care) on the examined interrelationships. Including both youth currently in care and those no longer in alternative care may limit comparability with other studies. Despite these limitations, the study's focus on this under-researched, high-risk population facing unique challenges that require specific attention represents a significant strength. Future studies with care-experienced youth should control for the caregiving setting and number of placement changes as an indicator for placement stability. It is possible that family-based care, compared to residential care, might provide more stable and intimate caregiver relationships (Li et al., 2019), thereby fostering mentalizing capacities more effectively.

Moreover, data collection relied on self-reported measures, which may have been prone to recall or social desirability biases. Furthermore, the utilized questionnaires had certain limitations. The CRIES-8 only assesses intrusion and avoidance, potentially overlooking symptoms associated with complex post-traumatic stress disorder (cPTSD). Although the RFQ is a widely used and validated instrument, some studies have raised concerns about its structural validity (Spitzer et al., 2021). Subsequent studies should integrate various assessment approaches, such as interviews or observations, alongside self-reported measures, to enhance data reliability (e.g. Reflective Functioning Scale from Adult Attachment Interviews, Fonagy et al. [1998]).

Additionally, attachment was not assessed in the study, despite its close association between child maltreatment, and mentalizing. To develop a more comprehensive framework of the various factors at play, future studies within youth with care experience should consider exploring mentalizing concurrently with attachment (Huang et al., 2020) as well as emotion regulation (Doba et al., 2022). While this study focuses on poly-victimization, it does account for the age and developmental timing of the victimization experienced. Early adversity, particularly during sensitive developmental windows, is likely closely linked to disruptions in attachment and significant

impairments in mentalizing capacities (Fonagy et al., 2023). Therefore, future studies should consider the developmental timing of victimization to provide a deeper understanding of its impact. While the current study strengthens the evidence of the mediating role of mentalizing in the context of poly-victimization, future research must contribute to the understanding of the underlying complex pathway.

Most importantly, the cross-sectional design of the study is unable to verify the assumed causal relationships among study variables. Further research within a longitudinal design is needed to establish whether mentalizing plays a buffering role between poly-victimization and PTSS in adolescents. Additionally, the interaction of mentalizing and re-victimization experiences should be further examined, as a vicious circle is expected.

5. Conclusion

Poly-victimization and PTSS are highly prevalent within care-experienced youth. The study provides evidence that poly-victimization is associated with impairments in mentalizing. The mediating role of mentalizing on the effect of poly-victimization on PTSS underline the potential importance of fostering mentalizing abilities in this vulnerable population.

Disclosure statement

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Data availability statement

Due to the nature of the research and ethical restrictions, supporting data is not available.

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