



Associations Between Preadoption Maltreatment and Adoptees' Emotional and Behavioral Difficulties: The Buffering Role of Mindful Parenting

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Accepted: 25 April 2024
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Abstract

Objectives The main goal of this study was to explore the association between preadoption maltreatment and postadoption child emotional and behavioral difficulties (EBD), while examining the potential buffering role of adoptive parents' mindful parenting on this association. The potential moderating role of the child's current age, of the time passed since the adoptive placement, and of the parents' sex was also explored within the buffering role of mindful parenting.

Method This cross-sectional study comprised a sample of 277 parents (76.2% females) with adoptive children aged 2 to 17 years.

Results Experiencing preadoption maltreatment and more diverse types of maltreatment were associated with higher EBD among adoptees as perceived by the parents. Mindful parenting had a buffering role in the association between preadoption maltreatment and EBD for adoptees up to 8 years of age and an independent direct explanatory role on EBD for adoptees of all other ages.

Conclusions Intervening with adoptive parents through mindful parenting programs seems to be relevant to promote adoptees' mental health.

Preregistration This study is not preregistered.

Keywords Child maltreatment · Adoptees' Emotional and Behavioral Difficulties · Mindful Parenting · Adoptive Parents

Adopted children often experience numerous adverse life events, which make them more prone to developing adjustment problems than nonadopted children (Kriebel & Wentzel, 2011). Nonetheless, there is a limited amount of research exploring the association between the specific

types of preadoption adversity suffered by adopted children, such as maltreatment (Crea et al., 2018), and their emotional and behavioral adjustment (Anthony et al., 2019). There are also few studies that have analyzed the potential buffering effect of adoptive parenting on this association (Finet et al., 2020), and to our knowledge none have examined the role of mindful parenting. Exploring the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties while attending to the potential moderating role of adopters' mindful parenting would better inform the development of postadoption parenting interventions to allow a higher-quality growth of vulnerable adoptees (Ahe-maitijiang et al., 2021).

Within the current literature, we can gather several typologies concerning maltreatment. The one proposed by Barnett et al. (1993) includes different forms of maltreatment, such as physical and sexual abuse, neglect, lack of supervision, psychological or emotional abuse, and child exploitation. Despite its many forms, child maltreatment refers to the occurrence of physical, sexual, psychological,

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or emotional harm and neglect of children and youth below 18 years of age. The perpetrators are usually parents, caregivers, or other authority figures. Regardless of the form, such violence constitutes a public health issue and a violation of fundamental human rights (World Health Organization, 2022). It can be an active or passive (through omission of behavior) physical or emotional approach that can cause probable or substantial damage to the child's health, development, and self-esteem (World Health Organization, 2006). Even though it can appear as an isolated event, it usually occurs in a recurrent way, implying an overlap of traumatic experiences, which affects the child's development and well-being (Rosen et al., 2018). Cumulative child maltreatment concerns the occurrence of several adverse circumstances and events in a child's life, consistent with the incidence of diverse types of child maltreatment (Bromfield et al., 2007). This type of harm, when persistent, can have an even more detrimental impact on children's skills, such as self-regulation and interpersonal affiliation. This includes impairments in areas such as attachment, affect regulation, self-concept, and biological, behavioral, and cognitive functioning (Kiniburgh et al., 2005).

Child adjustment after adoption is influenced early by preadoption hardships, such as birth parents' maltreatment (Hornefeck et al., 2019). Neil et al. (2020) demonstrated that increased amounts of maltreatment projected worse postadoption outcomes concerning adoptees' overall development and improvement in several areas, such as physical, emotional, and behavioral development, and interpersonal relationships. However, studies regarding the likely association between preadoption maltreatment and adoptees' emotional and behavioral adjustment, considering the factors that may protect or repair this effect, are scarce. On the other hand, maltreatment literature usually focuses on the adjustment of those individuals who suffered maltreatment without considering their life conditions after the maltreatment (e.g., Kisely et al., 2018), rather than focusing on the effects of maltreatment in specific populations according to these life conditions. Adoptees, in particular, also suffer the consequences of family separation, institutionalization, and adoptive placement(s) after maltreatment, which may interfere with their risk for maladjustment.

In fact, to understand the effect of preadoption maltreatment on adoptees' adjustment, we should control other pre- and postadoption factors that could explain the emotional and behavioral maladjustment of adopted children. The effect of some risk factors is complex, as they may overlap with each other, hindering the separation of distinct adversities' effects on children's development, such as age at adoptive placement and factors pertaining to the adoptive family (e.g., parenting abilities) (Hornefeck et al., 2019; Neil et al., 2020; Pace et al., 2021). However, most of the studies in the adoption field did not take into consideration the isolated

versus cumulative or interactive presence of these factors when looking for the consequences of preadoption adversity on adoptees' adjustment (Kriebel & Wentzel, 2011). Further research that portrays the protective or reparative role that adoptive parenting may have on the association between preadoption adversity and adoptees' emotional and behavioral outcomes, while controlling for a wide range of other pre- and postadoption variables, will allow a better understanding of the type of characteristics in the parent-child relationship that help to counteract the effects of maltreatment on adoptees' behavior (Holmgren et al., 2020; Kriebel & Wentzel, 2011).

Past research has shown that adoptive parenting can act as a predictor of child adaptive behavioral adjustment (Kriebel & Wentzel, 2011) and that preadoption risks, along with unsupportive adoptive parenting, could heighten the risk of poor social competence in adopted children (Soares et al., 2019). The existing research also states that a nurturing and stimulating environment allows adoptees to enhance their cognitive development (Waterman et al., 2013), and adoptive parents' displays of warmth toward the child have been associated with lower levels of internalizing problems (Anthony et al., 2019). Based on the parents' report of the child's difficulties—as the other studies presented in this article—the study of Kriebel and Wentzel (2011) found a significant buffer effect of adoptive child-centered parenting on the effects of preadoption cumulative risks on adoptees' behavior. Using a sample of 70 adoptive parents of children aged 7 to 11 years, their findings suggest that a responsive, involved, and caring environment in the adoptive family could counteract the detrimental risk effects that adopted children face due to preadoption adversity. According to this body of research, despite the risk factors that undermine adoptees' development, a more involved and responsive environment within the parent-child relationship seems to imply greater postadoption adaptive child behavior. This is congruent with the urge to support adoptive parents in the establishment of gratifying relationships with children, both preceding and following placements (Anthony et al., 2019). These interventions should emphasize the development of a positive parent-child relationship, particularly promoting a more child-centered approach among adoptive parents (Kriebel & Wentzel, 2011).

Growing evidence shows that the integration of mindful practices in parents' interactions enables a shift in the perception of their parenting in the present moment (Duncan et al., 2009). Mindful parenting is the practice of a more aware and attentive approach to parenthood since parents ought to consider their children's needs while adjusting their own attitudes. Likewise, parents' insightful acceptance without judging the present moment might enable a deeper understanding and involvement in the parent-child relationship (Kabat-Zinn & Kabat-Zinn, 2021). The mindful

parenting model proposed by Duncan et al. (2009) implies that mindful awareness in parents increases the probability of building better relationships with their children and preventing maladaptive parenting conduct.

Mindful parenting interventions are oriented toward the parent-child relationship and emphasize thoughtful communication that is malleable to different circumstances while shattering automatic and recurring interaction patterns (Sawyer Cohen & Semple, 2009). Therefore, mindful parenting can be valuable for both parents and children (Meppelink et al., 2016). Through mindfulness, parents can grow more aware of their children's characteristics and accept their way of being as they become more conscious of their own emotional responses toward their children. Hence, when facing challenging situations, a parent's ability to be mindful could improve his or her mental competencies toward intransigent circumstances and may even allow healthier psychological well-being (Chan & Lam, 2017). However, despite the prevalent interest concerning the application of mindfulness principles to challenging parenting circumstances, most of what is described in the literature is not directed toward adoptive parents (Ahemaitijiang et al., 2021; Gurney-Smith et al., 2017). Additional knowledge about the potential buffer effect of this parenting approach on the association between a child's preadoption adversity and postadoption adjustment would be pertinent to ascertaining the relevance of investing in future interventions based on mindful parenting with adoptive families, namely, in the presence of a preadoption (severe) history of child maltreatment.

Deriving from Bronfenbrenner's (Bronfenbrenner, 1979; Bronfenbrenner, 1986; Bronfenbrenner & Morris, 1998), Belsky's (1984), and Luster and Okagaki's (1993) work, the adoption of an ecological perspective of parenting has been increasingly valued in order to fully understand the processes and outcomes of parenting, namely in the adoption field (Schweiger & O'Brien, 2005). Implied in this developmental perspective of parenting is the need to find out not only how parenting processes operate, but also in which circumstances these effects may vary (Rutter & Sroufe, 2000). As such, beyond exploring adopters' mindful parenting as a potential buffer to preadoption maltreatment, from an ecological perspective of parenting, it is also important to reflect on the circumstances that can somehow influence the mindful parenting effect (Duncan et al., 2009). There are developmental and familial circumstances under which adoptive parenting might act differently against the preadoption adversity effect. The child's developmental stage, the time passed since the adoptive placement, and the adopters' sex deserve special attention in this context. These three conditions are important due, in part, to some characteristics of the postadoption services that distinguish them from general or diagnostic-driven parenting support services. In postadoption services, the group format and transdiagnostic

(not diagnostic-driven) nature of parenting support usually led to a great developmental diversity of the therapeutic group in terms of the child's age and family cycle phase (Selwyn, 2017). Additionally, the more usual inclusion of both mothers and fathers in these groups than in community or clinical groups determines the need to investigate both females' and males' parenting practices and its effects (Medeiros et al., 2016).

According to Duncan et al. (2009), mindful parenting can vary in its effect according to the child's developmental stage. To date, studies have focused on exploring the effect of mindful parenting on the adjustment of children of specific age groups (Medeiros et al., 2016), such as adolescents (Geurtzen et al., 2014) or school-age children (Moreira et al., 2015). Consequently, the shielding element of parenting in children's adversity according to the child's developmental stage is overlooked in mindful parenting studies. Furthermore, the data provided in the few existing studies are not consistent. Verhoeven et al. (2012), for example, indicated that children's age influenced the associations between parenting and child anxiety. Specifically, in their study, elementary school-aged children's anxiety was more strongly related to parenting in relation to adolescents' anxiety. In contrast, the study by Parent et al. (2016) showed that greater levels of mindful parenting were associated with reduced amounts of internalizing and externalizing problems across different developmental stages, from ages 3 to 17 years. Medeiros et al. (2016) also suggested that mindful parenting practices are not necessarily associated with the child's developmental stage.

Since adoption may establish positive effects regarding the developmental catch-up of adoptees over time (van Ijzendoorn & Juffer, 2006), this implies a connection between longer-term permanence with the adoptive family and the child's positive outcomes (Jiménez-Etcheverría & Palacios, 2020). According to Soares et al. (2019), for example, time since adoption was a relevant predictor of adoptees' social competence when considered in conjunction with the child's preadoption neglect experience, demonstrating the complex interplay between adopted children's past and present influences. It is likely that later adoptive placements mostly challenge the quality of parent-child relationships in the adoptive family, as well as its protective and reparative role, thus exacerbating adoptees' susceptibility to developing emotional and behavioral problems (van Ijzendoorn & Juffer, 2006). By enduring longer exposure to preadoption adversities, children who are later placed for adoption might face a greater threat to their healthy development (Palacios et al., 2019), which may worsen the establishment of effective and reparative bonds in the adoptive family. Even those children placed earlier in the adoptive family may need a more or less prolonged stay with the adoptive family to achieve a reparative effect on previous adversity.

Finally, although it could be expected that mindful parenting practices would be beneficial for the adoptees regardless of the parents' sex, the absence of literature supporting this has been pointed as a major gap in mindful parenting literature (Coatsworth et al., 2018; Medeiros et al., 2016). In fact, parenting research has been primarily focused on mothers, with most of the studies not fully considering the role of fathers (Coatsworth et al., 2015). The few mindful parenting studies considering both mothers and fathers show that in community samples, mothers tend to present higher levels of mindful parenting in relation to fathers, which could be a consequence of socialization and biological processes (Moreira & Canavarro, 2015). More important for the scope of the present study, recent research found that changes in mindful parenting showed a significant negative association with changes in youth aggression for fathers, but not mothers (Coatsworth et al., 2018). Kil et al. (2023) also found that higher levels of mindful parenting were correlated with greater child mindfulness for mothers but not for fathers. Including both adoptive mothers and fathers in the present study allows for investigating if and how the parents' sex could influence the potential buffering effect of adopters' mindful parenting on the relationship between preadoption child maltreatment and child outcomes.

Since adopted children have a prominent risk for maladjustment due to preadoption adversity (Bencuya, 2013), the role of adoptive parenting seems to be of extreme relevance for adoptees' behavioral and emotional adjustment (Holmgren et al., 2020), and cumulative and interactive effects of parent, child, and adoption-related factors should be considered when looking for the consequences of preadoption adversity on adoptees' adjustment (Kriebel & Wentzel, 2011; Liao, 2016). The goal of the present study was to explore the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties, as perceived by the parents, while exploring whether and under which circumstances adopters' mindful parenting may buffer this association. The child's current age, time passed since the adoptive placement, and parent's sex were hypothesized as potential moderators of the buffer effect of mindful parenting on the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties. A wide range of other parent, child, and adoption-related variables were controlled when looking for these associations. Although the literature is limited regarding these potential effects, it seems plausible to expect that preadoption maltreatment (independent variable) may explain adoptees' emotional and behavioral difficulties (dependent variable) and that adopters' mindful parenting (first-order moderator) may weaken the expected association between preadoption maltreatment and adoptees' emotional and behavioral difficulties, at least under specific

circumstances related with the child's current age, the time passed since the adoptive placement, and the parent's sex (second order moderators), and even after controlling for a wide range of other parent, child and adoption-related issues (covariates; Fig. 1). No other a priori-specific hypotheses were established.

Method

Participants

This study included 277 Portuguese adoptive parents (independent observations, where one parent was sampled from each of the 277 families), 76.2% of whom were female, aged 35 to 66 years. Detailed information about the sociodemographic and health characteristics of the participants, their adopted children, and data related to the adoption process are presented in Table 1.

Procedure

The present cross-sectional study is part of a larger project entitled "A mindfulness approach to adoptive parents' psychological and parenting functioning: Comprehensive analysis and evaluation of a postadoption psychological intervention." Participation was voluntary, with recruitment facilitated by Portuguese adoption agencies. Potential participants were asked to take part in the study through an email sent by the adoption agencies, which comprised brief information about the study's objectives and the researchers' contacts, along with a link to the online survey. The confidentiality and anonymity of potential participants and their data were guaranteed. After reading the complete information about the research project, the inclusion criteria, the investigator's duties, the participant's rights, and the data protection policy used for data storage, participants provided their informed consent making it clear that they agreed to participate in this study by selecting the option "yes, I authorize." No compensation was given to the participants.

To be eligible for the present study, parents had to have at least one adoptive child currently under the age of 18 years. If they had more than one adopted child currently under 18 years of age, they received instructions to provide information about the child with whom they experienced more difficulties. The data used in the present study correspond to a partial sample of the main project, gathered between September 2020 and June 2021; the online assessment protocol consisted of self-response questionnaires, available through the LimeSurvey platform (a secure online tool provided by the host institution).

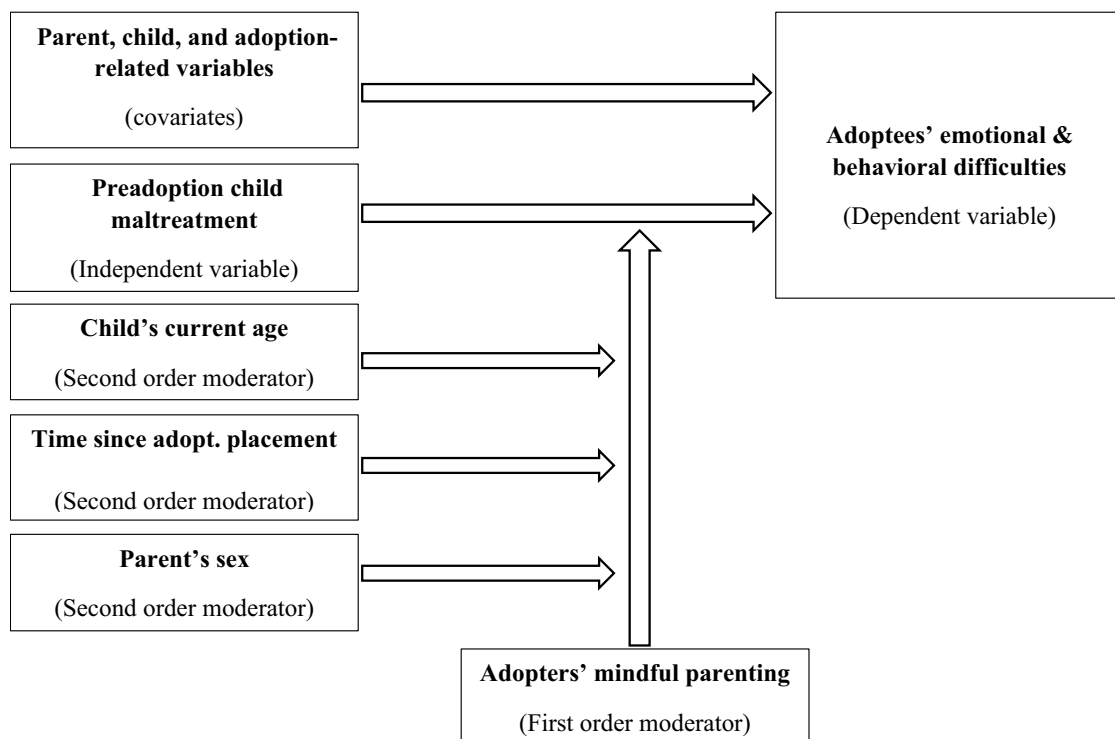


Fig. 1 Proposed conceptual model for the association between preadoption maltreatment and adoptee's emotional and behavioral difficulties

Measures

Sociodemographic, Health, and Adoption-Related Data

Sociodemographic, health, and adoption-related data included the participants' answers to questions regarding sociodemographics (e.g., age, sex, marital status, education, professional status, and family household) and health-related information (e.g., physical or mental health conditions).

Questions related to the children were also included (e.g., age, sex). Finally, this form also included adoption-related questions (e.g., number of children adopted at the same time, application type, children's age at adoptive placement, and years since the adoptive placement occurred).

Preadoption Child Maltreatment

Adoptive parents were asked to identify all the reasons for their children's previous foster care placement. According to the Portuguese governmental strategy for collecting and treating this kind of information, parents were given the following options: physical abuse, sexual abuse, psychological/emotional abuse, physical neglect, psychological/emotional neglect, child labor, commitment of crime by underage children, severe deviant behavior, abandonment, orphanhood, temporary absence of family support, unaccompanied underage foreigners, Países Africanos de Língua Oficial

Portuguesa (PALOP) health deal, and previous consent for adoption. For the present study, participants' answers were coded into two different variables. First, history of preadoption maltreatment was coded through a "yes" or "no" type of answer, meaning if the child had at least one type of preadoption maltreatment (among the ensuing physical abuse, sexual abuse, psychological/emotional abuse, physical neglect, psychological/emotional neglect, and child labor [Barnett et al., 1993]), it was coded as "yes"; if the reasons for previous foster care measures were other adverse life experiences and the child did not suffer from any type of maltreatment, it was coded as "no." Second, the cumulative nature of the maltreatment was considered through the computation of the answers in terms of the number of different types of maltreatment suffered (from 1 to 5).

Emotional and Behavioral Difficulties

According to the adoptees' age, their emotional and behavioral difficulties were assessed through the parent's response to one of the forms of the Pediatric Symptom Checklist: the Pediatric Symptom Checklist (PSC17) or the Preschool Pediatric Symptom Checklist (PPSC). The latter derives from the PSC17, and as a way of inclusion in the same statistical models, both instruments' results were standardized (scale of 0–100). The PSC17 (Jellinek et al., 1988; Pereira et al., 2020a, 2020b) is a self-response screening

Table 1 Sample characteristics: descriptive statistics

Study variables	Total sample (<i>N</i> = 277)
Adoptive parent-related	
Age (years); <i>mean</i> (<i>SD</i>); range)	46.70 (5.20; 35–66)
Sex; <i>n</i> (%)	
Male	66 (23.8)
Female	211 (76.2)
Education; <i>n</i> (%)	
Elementary/high school	77 (27.8)
University/postgraduate degree/doctorate	200 (72.2)
Professional status; <i>n</i> (%)	
Employed	260 (93.9)
Unemployed or other	17 (6.1)
Marital status; <i>n</i> (%)	
Single/widower/separated/divorced	84 (30.3)
Married/cohabitating	193 (69.7)
Household members; <i>mean</i> (<i>SD</i>); range)	3.23 (1.0; 2–8)
Children in the adoptive family; <i>n</i> (%)	
Only adopted children	235 (84.8)
Both adopted and biological children	42 (15.2)
Mental health conditions; <i>n</i> (%)	57 (20.6)
Physical health conditions; <i>n</i> (%)	69 (24.9)
Child-related	
Age; <i>mean</i> (<i>SD</i>); range)	9.93 (3.8; 2–17)
Sex; <i>n</i> (%)	
Male	157 (56.7)
Female	120 (43.4)
Intellectual or physical disability; <i>n</i> (%)	9 (3.2)
Physical health condition; <i>n</i> (%)	21 (7.6)
Adoption-related	
Reasons for foster care measure; <i>n</i> (%)	
Physical abuse	22 (7.9)
Sexual abuse	4 (1.4)
Psychological/emotional abuse	27 (9.7)
Physical neglect	131 (47.3)
Psychological/emotional neglect	128 (46.2)
Deviant behavior	50 (18.1)
Abandonment	91 (32.9)
Orphanhood	2 (0.7)
Temporary absence of family support	42 (15.2)
Previous consent for adoption	45 (16.2)
Other	9 (3.6)
Domestic adoption, <i>n</i> (%)	
No	1 (0.4)
Yes	276 (99.6)
Application type; <i>n</i> (%)	
Single	62 (22.4)
Couple	215 (77.6)
Number of children adopted at the same time; <i>mean</i> (<i>SD</i>); range)	1.20 (0.48; 0–4)
Number of years spent in foster care; <i>mean</i> (<i>SD</i>); range)	2.45 (1.78; 0–11)
Type of foster care; <i>n</i> (%)	
Residential	266 (96%)
Familial	8 (2.9%)

Table 1 (continued)

Study variables	Total sample ($N = 277$)
Child's age at placement (years); <i>mean</i> (<i>SD</i>); range)	4.37 (3.06; 0–15)
Years passed since integration; <i>mean</i> (<i>SD</i>); range)	6.03 (3.41; 0–16)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

questionnaire that is used to assess the psychosocial functioning of a child (more than 5 years old) according to the parent's perception (Murphy et al., 2016). It uses a 3-point Likert scale and comprises 17 items within three subscales: Internalizing Problems, Externalizing Problems, and Attention Problems. For the purposes of this study, only the total score (range 0 to 34) was considered. Higher scores indicated a greater risk of problems in psychosocial functioning. The PSC17 displays high reliability, with an internal consistency of 0.89 and test-retest values of 0.85 (Murphy et al., 2016). In the current sample, the instrument presented good internal consistency, with a Cronbach's alpha of 0.83. The PPSC (Pereira et al., 2020a, 2020b; Sheldrick et al., 2012) is a screening instrument that monitors the social/emotional problems of a child (up to 5 years old), corresponding to parents' perceptions. Similar to the PSC17, the PPSC employs a 3-point Likert scale and consists of 18 items within three subscales: Internalizing Problems, Externalizing Problems, Attention Problems. Additionally, it includes a separate set of Parenting Challenges items, which do not belong to a particular subscale, but to an overall/general factor representing the PPSC. In the present study, only the total score (range 0 to 36) was used. Higher scores imply a greater risk for social/emotional problems. This questionnaire displays high reliability in the Primary Care sample (0.88), the Referral Clinic sample (0.92), and the Replication sample (0.86). Additionally, it showed acceptable test-retest values of 0.75 (Sheldrick et al., 2012). In the present sample, the instrument displayed good internal consistency, with a Cronbach's alpha of 0.85.

Mindful Parenting

To measure the extent of adopters' mindful parenting practices, the Interpersonal Mindfulness in Parenting Scale (IM-P; Duncan, 2007; Moreira & Canavarro, 2017) was applied. This instrument is a 31-item self-response questionnaire that uses a 5-point Likert scale and evaluates five dimensions of mindful parenting: Listening with Full Attention; Emotional Awareness of the Self and Child; Self-Regulation in the Parenting Relationship; Non-Judgmental Acceptance of the Self and Child; and Compassion for the Self and Child. This questionnaire was meant for parents of children aged 24 months to 17 years, and the total score (range 31 to 155) was used as an indicator of mindful parenting; higher scores indicated greater levels of mindful parenting. The

Portuguese version of the IM-P also demonstrated adequate internal consistency of the scale scores and adequate convergent validity, which was supported by correlation with self-compassion, parenting stress, and perceived stress measures (Moreira & Canavarro, 2017). In the present sample, the instrument displayed good internal consistency, with a Cronbach's alpha of 0.88.

Data Analyses

The statistical analyses were conducted through the Statistical Package for the Social Sciences (SPSS, version 25) and the PROCESS computation tool (Hayes, 2022). To carry out the sample characterization and to describe the study variables, descriptive statistics were performed. To explore the associations between sociodemographic, health, and adoption-related data, the study's variables, and the study outcome, Pearson correlations were performed. We assumed a significance level of $p < 0.05$. The variables that presented a significant correlation with the outcome (adoptees' emotional and behavioral difficulties) were further included in hierarchical linear regression models. Regression models aimed to test the independent contribution of the study variables to the adoptees' emotional and behavioral difficulties, while identifying the parent, child, and adoption-related variables that should be included as covariates in the final PROCESS models. The hypothesized moderators (adopter's sex, child's age, and time passed since the adoptive placement) were only introduced as covariates in the final step of the Regression model for control purposes when searching for other covariates that need to be considered in PROCESS models. Two regression models were built: one including the assessment of the independent contribution of the history of preadoption maltreatment to the adoptees' emotional and behavioral difficulties (hierarchical regression model for the total sample) and the other including the assessment of the independent contribution of the number of different types of maltreatment to the same outcome (hierarchical regression model for participants who reported their adopted children experienced at least one type of maltreatment). Multicollinearity was assessed by the Variance Inflation Factor (VIF; Akinwande et al., 2015). The models were adjusted until no multicollinearity diagnosis was present: although we first included both the time (years) passed since the adoptive placement and the time passed between birth and placement (the child's age when the placement occurred) in the

regression models, these variables presented a high level of multicollinearity ($VIF > 5$; Akinwande et al., 2015); the latter was then excluded, as it was considered less valuable for the conceptual interpretation of the model in comparison with the first. Parent, child, and adoption-related variables with significant associations to the outcome were included in the subsequent analyses. Considering the wide range of covariates in the model, the sample used in each of the regression models, and following the consensus recommendations for an adjustable alpha that varies based on the context of the investigation and the quantity of sample information, we assumed a significance level of $p < 0.10$ (Haas et al., 2004; Kim & Choi, 2021; Pérez & Pericchi, 2014).

After the described preliminary analyses and using SPSS's PROCESS tool (Hayes, 2022), two simple moderation models (Model 1; Hayes, 2022) were performed to understand whether mindful parenting practices moderated the relation between (1) history of preadoption maltreatment and adoptees' behavioral and emotional difficulties (simple moderation model for the total sample) and (2) between the number of types of maltreatment and the same outcome (simple moderation model for participants who reported that their adopted children experienced at least one type of maltreatment). These analyses were conducted with mindful parenting as the moderator while controlling for other study variables (adopters' sex, child's current age, and time passed since the adoptive placement) and significant child, parent, and adoption-related covariates identified through previous regression models. Then, six moderated moderation analyses (Model 3; Hayes, 2022) were conducted to explore each of the three-way interactions proposed for the association between (1) history of preadoption maltreatment and adoptees' behavioral and emotional difficulties and between (2) the number of different types of maltreatment experienced and the same outcome. With these models, we intended to assess whether the magnitude of the moderation of mindful parenting on these associations depended on the adopters' sex, the child's current age, and/or the time passed since the adoptive placement. Interactions that were significant at $p < 0.10$ (90% CI) were then probed. The values for significant interactions were calculated for different values of the moderators (i.e., conditional values for $-1SD$, M , $+1SD$ of the moderator), and interaction plots were built. The Johnson-Neyman technique was used to present detailed information regarding the values of each 2nd order moderator in which the interaction between mindful parenting and preadoption maltreatment was significant in predicting the child outcome (Hayes, 2022; Rast et al., 2014). All the data on these multiple models were treated and depicted according to Hayes' (2022) recommendations to analyze and report data on moderation and moderated moderation models.

Results

Descriptive Statistics and Associations with the Outcome Variable

Descriptive statistics for the study variables other than those used for sample characterization are presented in Table 2.

Significant and positive associations were found between adoptees' emotional and behavioral difficulties and parents' mental health conditions ($r = 0.18$, $p < 0.01$), child's intellectual or physical disability ($r = 0.14$, $p < 0.05$), number of children adopted at the same time ($r = 0.17$, $p < 0.01$), child's age at adoptive placement ($r = 0.27$, $p < 0.01$), child's current age ($r = 0.38$, $p < 0.01$), years passed since adoptive placement ($r = 0.18$, $p < 0.01$), and history of preadoption maltreatment ($r = 0.23$, $p < 0.01$).

Preliminary Regression Models

In the final hierarchical regression model explaining adoptees' emotional and behavioral difficulties for the total sample (Table 3), greater adoptees' emotional and behavioral difficulties were explained by the presence of children's intellectual or physical disability, a higher number of children adopted at the same time, the existence of a preadoption history of maltreatment, lower levels of mindful parenting, and older children.

In the final hierarchical regression model explaining adoptees' emotional and behavioral difficulties, for parents who reported their adopted children experienced at least one type of maltreatment (Table 4), adoptees' greater emotional and behavioral difficulties were explained by the presence of an intellectual or physical disability, the number of types of maltreatment, lower levels of mindful parenting, the older children, and more recent placements.

Table 2 Study variables: descriptive statistics

Study variables	Total sample ($N = 277$)
History of preadoption maltreatment, n (%)	
No	112 (40.4)
Yes	165 (59.6)
Number of maltreatment types; <i>mean</i> (<i>SD</i>); <i>range</i>	1.13 (1.2; 1–5)
Behavioral and emotional difficulties (PSC17, PPSC scores); <i>mean</i> (<i>SD</i>) (Observed range-possible range)	29.17 (16.9) (0–85; 0–100)
Primary moderator	
Mindful parenting (IMP score); <i>mean</i> (<i>SD</i>) (Observed range-possible range)	108.56 (12.23) (66–140; 31–155)

Table 3 Hierarchical linear regression models explaining child emotional and behavioral difficulties: total sample ($n = 277$)

	Step 1: $\Delta R^2 = 0.09$ $F(2,272) = 14.14^{***}$ $R^2 = 0.09$		Step 2: $\Delta R^2 = 0.06$ $F(2, 270) = 9.06^{***}$ $R^2 = 0.15$		Step 3: $\Delta R^2 = 0.04$ $F(1, 269) = 11.95^{**}$ $R^2 = 0.19$		Step 4: $\Delta R^2 = 0.03$ $F(1,268) = 9.47^{**}$ $R^2 = 0.22$		Step 5: $\Delta R^2 = 0.18$ $F(1, 267) = 79.55^{***}$ $R^2 = 0.40$		Step 6: $\Delta R^2 = 0.07$ $F(3,264) = 11.19$ $F(10, 264) = 22.80^{***}$ $R^2 = 0.46$		Final model ^a $F(9, 265) = 25.25^{***}$ $R^2 = 0.46$	
	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>	<i>b</i> (b)	<i>t</i>
Constant	56.45	8.55***	65.47	9.48***	57.52	8.05***	54.00	7.57***	113.56	12.40***	99.91	10.82***	101.60	11.22***
Parent-related covariates														
Psychological/psychiatric diagnostic covariates	4.98 (0.17)	2.96**	5.01 (0.17)	3.06**	5.52 (0.19)	3.43**	5.13 (0.18)	3.23**	1.69 (0.06)	1.17	1.32 (0.05)	0.94		
Child-related covariates														
Intellectual or physical disability			15.26 (0.16)	2.85**	15.09 (0.16)	2.88**	15.92 (0.17)	3.08**	9.49 (0.10)	2.06*	8.01(0.08)	1.83†	7.93 (0.08)	1.81 †
Adoption-related covariates														
No. of children adopted at the same time					6.69 (0.19)	3.46**	5.58 (0.16)	2.88**	4.42 (0.13)	2.59*	2.94 (0.08)	1.78†	2.73 (0.08)	1.67 †
Study variables: independent variable														
History of preadoption mal-treatment					5.88(0.17)	3.08**			6.09 (0.18)	3.63***	2.97 (0.09)	1.68†	3.04(0.09)	1.73 †
Study variables: primary moderator														
Mindful parenting									-0.63 (-0.46)	-8.92***	-0.63 (-0.45)	-9.22***	-0.64 (-0.46)	-9.83***

Table 3 (continued)

	Step 1: $\Delta R^2 = 0.09$ $F(2, 272) =$ 14.14 *** $R^2 = 0.09$	Step 2: $\Delta R^2 = 0.06$ $F(2, 270) =$ 9.06 *** $R^2 = 0.15$	Step 3: $\Delta R^2 = 0.04$ $F(1, 269) =$ 11.95** $R^2 = 0.19$	Step 4: $\Delta R^2 = 0.03$ $F(1, 268) =$ 9.47** $R^2 = 0.22$	Step 5: $\Delta R^2 = 0.18$ $F(1, 267) =$ 79.55*** $R^2 = 0.40$	Step 6: $\Delta R^2 = 0.07$ $F(3, 264) =$ 11.19 $F(10, 264)$ $= 22.80***$ $R^2 = 0.46$	Final model ^a $F(9, 265) =$ 25.25*** $R^2 = 0.46$		
Study variables: secondary moderators						0.90 (0.02)	0.48	1.25 (0.03)	0.68
Parent's sex						1.51 (0.34)	4.94***	1.53 (0.34)	5.04***
Child's current age						-0.44 (-0.09)	-1.37	-0.46 (-0.09)	-1.44

Study variables and significant covariates only. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 4 Hierarchical linear regression models explaining child's emotional and behavioral difficulties: parents who reported their children experienced preadoption maltreatment ($n = 165$)

	Step 1: $\Delta R^2 = 0.10$ $F(2, 160) = 8.36^{***}$ $R^2 = 0.10$	Step 2: $\Delta R^2 = 0.09$ $F(2, 158) = 8.72^{***}$ $R^2 = 0.19$	Step 3: $\Delta R^2 = 0.03$ $F(1, 157) = 5.56^*$ $R^2 = 0.21$	Step 4: $\Delta R^2 = 0.01$ $F(1, 156) = 0.99$ $R^2 = 0.22$	Step 5: $\Delta R^2 = 0.22$ $F(1, 155) = 61.18^{***}$ $R^2 = 0.44$	Step 6: $\Delta R^2 = 0.03$ $F(3, 152) = 2.72^*$ $F(10, 152) = 13.35^{***}$ $R^2 = 0.47$	Final model ^a : $F(7, 155) = 18.71^{***}$ $R^2 = 0.46$						
	t	b (b)	t	b (b)	t	b (b)	t						
Constant	7.70***	71.33	8.57***	66.19	7.79***	63.86	7.25***	120.53	11.57***	116.24	10.41***	115.99	11.14***
Parent-related covariates													
Psychological/psychiatric diagnostic covariates	2.20 (0.08)	1.07	2.77 (0.10)	1.41	3.42 (0.13)	1.75†	3.13 (0.12)	1.58	0.71 (0.03)	0.42	0.50 (0.02)	0.29	0.29
Child-related covariates													
Intellectual or physical disability	20.28 (0.20)	2.73***	19.12 (0.19)	2.60*	18.72 (0.18)	2.55*	15.67 (0.15)	2.50*	15.83 (0.15)	2.57*	16.23 (0.16)	2.64**	2.64**
Adoption-related covariates													
No. of adopted children (at the same time)	5.00 (0.17)	2.36*	4.58 (0.16)	2.12*	3.34 (0.11)	1.81†	2.61 (0.09)	1.43					
Study variables: independent variable													
Number of types of maltreatment	1.31 (0.07)	1.00	2.46 (0.14)	2.17*	1.69 (0.09)	1.47	2.05 (0.11)	1.83 †					
Study variables: primary moderator													
Mindful parenting	-0.67 (-0.50)	-7.82***	-0.69 (-0.51)	-8.06***	-0.70 (-0.53)	-8.40***							

Table 4 (continued)

	Step 1: $\Delta R^2 = 0.10$ $F(2, 160) = 8.36^{***}$ $R^2 = 0.10$	Step 2: $\Delta R^2 = 0.09$ $F(2, 158) = 8.72^{***}$ $R^2 = 0.19$	Step 3: $\Delta R^2 = 0.03$ $F(1, 157) = 5.56^*$ $R^2 = 0.21$	Step 4: $\Delta R^2 = 0.01$ $F(1, 156) = 0.99$ $R^2 = 0.22$	Step 5: $\Delta R^2 = 0.22$ $F(1, 155) = 61.18^{***}$ $R^2 = 0.44$	Step 6: $\Delta R^2 = 0.03$ $F(3, 152) = 2.72^*$ $F(10, 152) = 13.35^{***}$ $R^2 = 0.47$	Final model ^a : $F(7, 155) = 18.71^{***}$ $R^2 = 0.46$
Study variables:							
secondary moderators							
Parent's sex						1.23 (0.03)	1.41 (0.04)
Child's current age						1.07 (0.22)	1.14 (0.24)
Years passed since adoptive placement						-0.85 (-0.17)	-2.17* (-0.18)
							0.64
							3.02**
							-2.35*

Study variables and significant covariates only. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Moderation and Moderated Moderation Models

In the simple moderation analyses for the total sample and for participants who reported that their adopted children experienced at least one type of maltreatment, the interactions between history of preadoption maltreatment or number of types of maltreatment and mindful parenting when explaining adoptees' emotional and behavioral difficulties were not significant ($b = -0.10$, $SE = 0.13$, $90\% CI = [-0.31, 0.11]$) and ($b = 0.08$, $SE = 0.09$, $90\% CI = [-0.07, 0.22]$, respectively).

The moderated moderation models performed showed a significant interaction between mindful parenting and the child's current age when explaining the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties in the total sample ($b = 0.07$, $SE = 0.03$, $90\% CI = [0.01, 0.13]$). According to the subsequent analysis of the conditional effects of preadoption maltreatment on adoptees' emotional and behavioral difficulties at different values of mindful parenting and child's current age, the explanatory role of history of preadoption maltreatment on adoptees' emotional and behavioral difficulties was not significant for older children ($M+1SD = 13.70$) at any level of mindful parenting. However, among children in the mid-range of our study ($M = 9.92$), the explanatory role of a history of preadoption maltreatment on adoptees' emotional and behavioral difficulties was significant unless the levels of mindful parenting were medium ($M = 108.51$) to high ($M+1SD = 120.76$). For younger children ($M-1SD = 6.14$), the explanatory role of a history of preadoption maltreatment on emotional and behavioral difficulties was significant unless the levels of mindful parenting were high ($M+1SD = 120.76$). As illustrated in the interaction plots for this

three-way interaction (Figs. 2, 3, and 4), as the child's age increases, the potential buffer effect of mindful parenting on the association between history of preadoption maltreatment and adoptees' emotional and behavioral difficulties seems to decrease.

The Johnson-Neyman significance region (that determined which moderating effects and interactions were statistically significant [Rast et al., 2014]) suggested that mindful parenting was a significant moderator of the association between a history of preadoption maltreatment and child behavioral and emotional difficulties only when the child's current age was up to 8.00 ($b = -0.22$, $90\% CI = [-0.48, -0.02]$, $p = 0.08$).

None of the remaining three-way interactions hypothesized in our conceptual model were significant in the moderated moderation models for the total sample: years passed since integration ($b = 0.05$, $SE = 0.04$, $90\% CI = [-0.01, 0.11]$), and parent's sex ($b = 0.04$, $SE = 0.32$, $90\% CI = [-0.49, 0.56]$); participants who suffered at least one type of maltreatment: children's age ($b = -0.02$, $SE = 0.04$, $90\% CI = [-0.08, 0.04]$), years passed since integration ($b = -0.03$, $SE = 0.04$, $90\% CI = [-0.09, 0.04]$), and parent's sex ($b = -0.26$, $SE = 0.19$, $90\% CI = [-0.57, 0.05]$).

Discussion

This study explored the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties, according to the parents' report (first aim), while exploring whether and under which circumstances adopters' mindful parenting may buffer this association (second aim). Our results supported the hypothesized associations for the

Fig. 2 Interaction between history of preadoption maltreatment, mindful parenting, and child's current age when explaining child's behavioral and emotional difficulties relationship: low mindful parenting levels ($M - 1SD = 96.26$)

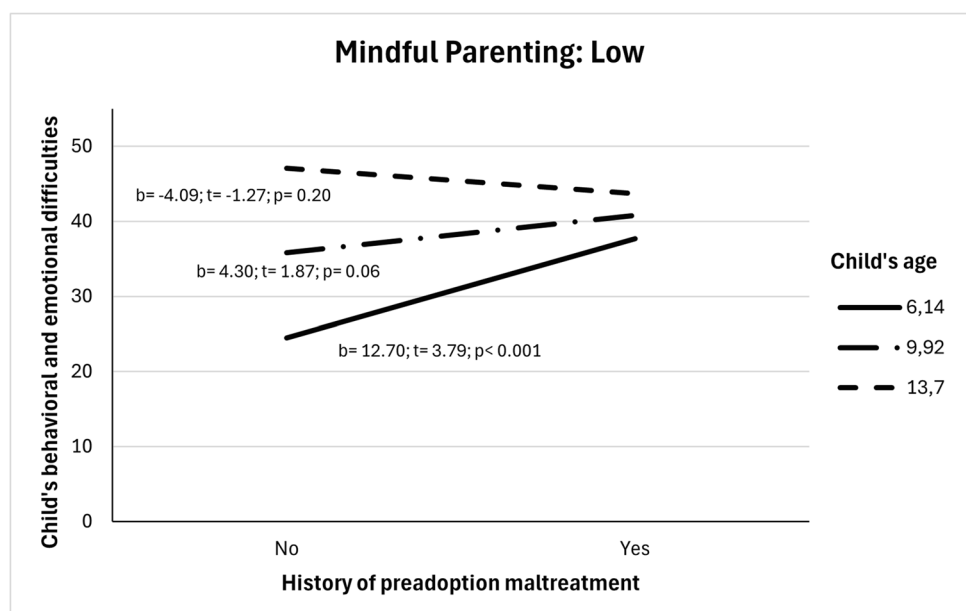


Fig. 3 Interaction between history of preadoption maltreatment, mindful parenting, and child's current age when explaining child's behavioral and emotional difficulties relationship: medium mindful parenting levels ($M - 1SD = 108.51$)

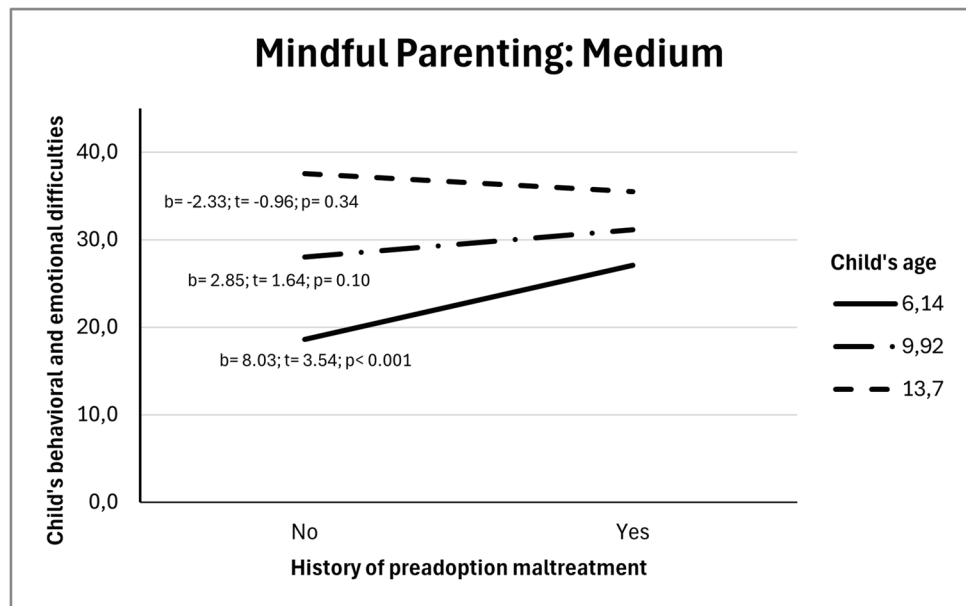
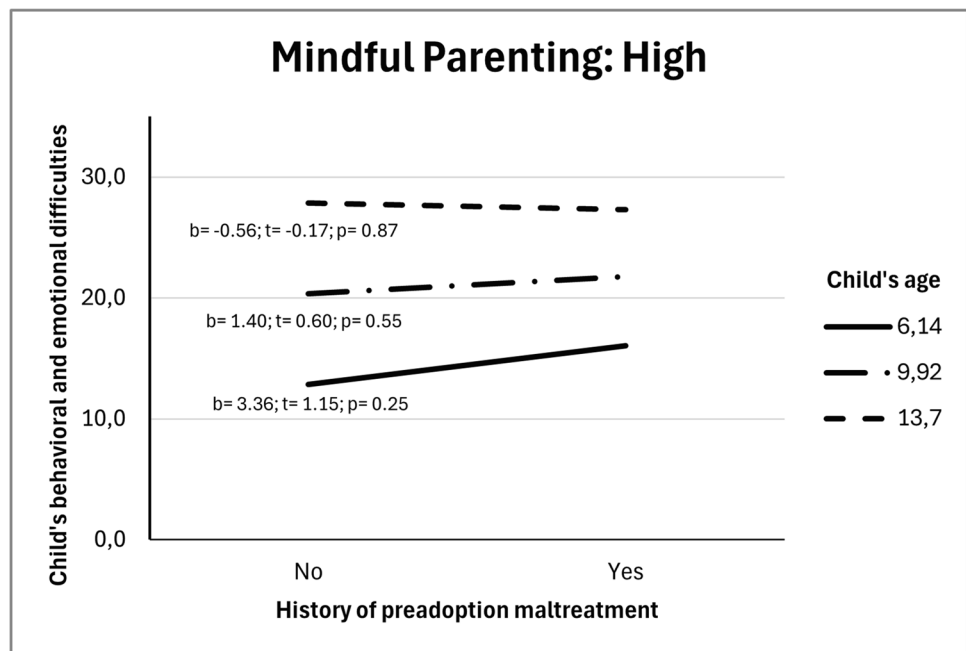


Fig. 4 Interaction between history of preadoption maltreatment, mindful parenting, and child's current age when explaining child's behavioral and emotional difficulties relationship: high mindful parenting levels ($M - 1SD = 120.76$)



first aim by demonstrating that children who suffered from preadoption maltreatment and, among them, those who experienced more diverse types of maltreatment, seem to be more prone to developing emotional and behavioral problems, even after controlling for a wide range of other child, parent, and adoption-related variables. Moreover, we found that adopters' mindful parenting may have an important direct explanatory role on adoptees' emotional and behavioral difficulties, as well as a buffering role in the association between preadoption maltreatment and adoptees' emotional

and behavioral difficulties under specific developmental circumstances (second aim).

In relation to the first study aim, our results were in line with previous research (e.g., Paine et al., 2020), as higher levels of adoptees' emotional and behavioral difficulties were associated with the history of maltreatment and more diverse types of maltreatment suffered. Moreover, they could add to previous research evidence regarding the independent contribution of these variables to adoptees' adjustment, as their explanatory role occurred even when accounting

for a wide range of other covariates. On the other hand, mindful parenting revealed a significant direct explanatory role on the study outcome in the presence of all the other variables. These findings are in accordance with previous studies that observed the predictive and reparative role of child-centered parenting and positive parenting practices on adoptees (Han et al., 2021; Kriebel & Wentzel, 2011). The negative association found between adoptees' emotional and behavioral difficulties and mindful parenting has been previously described in the literature, although in an insufficient manner. Even so, research shows that higher levels of mindful parenting are related to children's welfare (Medeiros et al., 2016) and that mindful parenting might help mitigate behavioral problems in youth (Coatsworth et al., 2018).

Additionally, according to previous research, adoptees' emotional and behavioral difficulties were also associated with the presence of a child's intellectual or physical disability (Raaska et al., 2011), a higher number of children adopted at the same time (Meakings et al., 2017), and a child's older current age (Verhoeven et al., 2012). Accounting for the number of types of maltreatment suffered in the model, higher levels of adoptees' emotional and behavioral difficulties were also significantly associated with more recent placements but not with a greater number of children adopted at the same time. Since the literature concerning adoptees' maltreatment, in its cumulative form, is scarce, further investigation is needed to better comprehend these results. Nonetheless, we can find some clarifications regarding the association between greater adoptees' emotional and behavioral difficulties and these variables in existing studies. For example, the association between adoptees' emotional and behavioral difficulties and the presence of children's intellectual or physical disabilities has been substantiated by Raaska et al. (2011), who showed that adoptees had more frequent and more severe learning difficulties in relation to their nonadopted peers. Conversely, to our knowledge, the relationship between the outcome and a higher number of children adopted at the same time has not been explored in the literature. Nonetheless, Meakings et al. (2017) state that adoption of more than one child at the same time could imply a novelty and intricate process, which would entail a discovery and adjustment process within the family. In contrast, our findings are in accordance with the literature, as a longer time since adoptive placement has been associated with children's positive outcomes (Jiménez-Etcheverría & Palacios, 2020; Soares et al., 2019).

Regarding the second aim of our study, our results suggest that the association between preadoption maltreatment and adoptees' emotional and behavioral difficulties could be attenuated through adopters' mindful parenting practices only up to the child's age of 8. The role of mindful parenting on the study outcome for other children's ages remained only a direct one, with higher levels of mindful parenting

explaining lower levels of adoptees' behavioral and emotional difficulties, even in the presence of all the other study variables. This suggests that a younger child's age could be a beneficial condition under which mindful parenting appears to act as a buffer against the specific association between preadoption maltreatment and adoptees' emotional and behavioral difficulties. As a child's age increases, the potential buffering role of mindful parenting on the association between the history of preadoption maltreatment and adoptees' emotional and behavioral difficulties seems to decrease. These findings are in line with those presented by Verhoeven et al. (2012), which suggest that the younger the child, the more likely the child will build a positive attachment relationship with adoptive parents. It seems of crucial relevance to develop well-timed positive parental involvement with younger children, as developmental abilities (e.g., neuroplasticity) are still evolving (Nelson et al., 2011). Nonetheless, some caution is advised in interpreting and generalizing these results. Although the proposed associations are upheld by theory and previous research, the cross-sectional nature of this study does not allow us to assume causal and exclusive relationships between the study constructs. Although our findings highlight the potential buffering effect of mindful parenting practices in younger children (until the age of 8), Duncan et al. (2009), for example, suggested that mindful parenting practices could positively influence parents' relationships with their adolescents, by allowing parents to be more aware and more permeable to handle these developmental changes. It would be interesting for future studies to measure the possible moderating effect of mindful parenting across different developmental stages within larger samples in the adoptive setting.

Additionally, it is important to note that, in our study, the interaction between mindful parenting and the child's current age was only significant in relation to the total sample and was not found to be significant when the model accounted for the number of types of maltreatment suffered. A possible explanation for this is that a more harmful history of preadoption maltreatment may dampen the potential buffer effect that mindful parenting can exert on the child's adjustment (Finkelhor et al., 2011), even at younger ages. However, the data set used for such complex statistical models was limited in size, when compared to the data set used for the models concerning the history of preadoption maltreatment. It is possible that the sample used in the model with the number of types of maltreatment did not allow enough power to our study in order to detect a significant buffer effect of mindful parenting on the child's adjustment, even considering the potential moderation of the child's current age.

Furthermore, our study was not able to find a moderator effect of the parent's sex and time passed since adoptive placement on the buffer effect of mindful parenting. These results are exploratory, namely due to the sample's limited

size for such complex models and the subsequent possibility of a lack of power to detect such kinds of effects. Nonetheless, following Parent et al. (2021), we can hypothesize that the non-significant moderator effect of the parent's sex could be related to the parenting practices examined, as the current study did not include parenting practices specifically in response to children's negative emotions. Future research should further explore the hypothesis that the parent's sex might alter the quality and impact of parent-child relationships in the adoptive family. Regarding the non-significant moderator effect of time spent since adoptive placement, the heterogeneous nature of this variable must be considered (Brodzinsky et al., 2022). In fact, it is expected that the effect of the time spent since adoptive placement could be different depending on several factors, such as children's characteristics at placement, previous care experiences, and adoptive family environment. Further research on this topic is needed to clarify the role that this variable could assume in models like those tested in our study.

Nevertheless, our results emphasize the importance of focusing postadoption interventions on more attentive and child-centered parental practices (Duncan et al., 2009; Kriebel & Wentzel, 2011), namely, mindful parenting practices that can positively affect this association. Although this seems to be a valuable investment independent of a wide range of other child, parent, and adoption variables, since mindful parenting seems to have a direct explanatory role on adoptees' adjustment, a younger child's age seems to be a key variable that may allow the mitigation of the specific relationship between preadoption maltreatment and adoptees' difficulties through mindful parenting practices. These findings pose valuable practical information in the adoption field, as they contribute to adoption professionals' and policymakers' insight into the specific developmental period that is suitable for interventions. Future research should provide a supplementary exploration of other conditions and the mechanisms under and through which mindful parenting exerts its effects. Interventions should be tailored accordingly, as adoptive families may benefit from a specific approach according to their specific characteristics.

Limitations and Future Research

As in all investigations, the present study is not without limitations. First, we can point out its cross-sectional nature, which does not allow for the establishment of cause and effect, as bidirectional associations could exist among the studied variables. For example, higher mindful parenting levels could contribute to fewer behavioral and emotional difficulties in children; nevertheless, greater difficulties in children could also hinder the application of mindfulness parenting practices (e.g., Gurney-Smith et al., 2017). As such, a cautious interpretation of the

results is advised due to the cross-sectional nature of the study. Another limitation is the sample size, which, given the wide variability of examined variables, may not be sufficient to allow final conclusions about the explored associations. Additionally, the data were entirely obtained online, which could mean that people who found out about the study and took part in this investigation might have easier access to the internet and be more able to use it; it is also expected that they may be more invested in the research subject in relation to the common population that would not get as involved in these topics. All measures are based on parents' self-reports (e.g., preadoption maltreatment and the adoptees' behavioral and emotional difficulties described by adopters), meaning they are not a precise measure, as they depend on adopters' knowledge and perceptions. Furthermore, concerning the PPSC scale, the inclusion of Parenting Challenges items when measuring child emotional and behavioral difficulties can present itself as a limitation. Despite being a parent-reported instrument, the aim of the PPSC scale is to assess the parent's perception of the child's difficulties. Theoretically, the category of parenting challenges would be expected to appear on a parenting stress-related scale rather than a child emotional and behavioral difficulties scale. Although the inclusion of this set of items in the present study was in line with the psychometric studies of PPSC (Sheldrick et al., 2012) and is also congruent with previous comprehensive research in the field that uses the full-item (18-item) version of PPSC (e.g., Hails et al., 2022; Monteiro et al., 2021), caution is advised when interpreting or replicating our findings.

In addition to these limitations, our study has several conceptual and methodological strengths and important contributions to both research and practice. First, our findings highlight that when studying this subject, it seems necessary to acknowledge not only adoption-related variables but also the role and interplay between parent (e.g., adopters' parenting practices) and child variables (adoptees' characteristics), as pointed out by Soares et al. (2019). The aforementioned variables seem to be associated with child emotional and behavioral outcomes and should be controlled when analyzing explanatory conceptual models, as is the case in our study. Although this falls in line with the ecological systems analysis of factors affecting adopted children's adjustment suggested by Liao (2016), few investigations exist considering the interplay between these variables in the adoption field. Subsequently, this exploratory study could be a first step towards an insight regarding the variables that influence a child's emotional and behavioral problems and how those factors can affect or interact with the adjustment in the adoptive setting. Moreover, the child's age emerged as a potential moderator of the buffering role of mindful parenting, asking for more attention in future research on

the developmental specificities of these processes. Few investigations exist concerning these topics, and our study poses important directions for future research, as additional information is needed to better understand the underlying processes of these associations.

Second, the conceptualization and analysis of preadoption maltreatment into two complementary forms (history of maltreatment and number of types of maltreatment experienced) also allowed a more informed interpretation of the results. In our study, the explanatory role of previous adversity on adoptees' emotional and behavioral difficulties was found in the history of preadoption maltreatment and the number of types of maltreatment experienced, even when accounting for a wide range of other diverse covariates. Additionally, the direct explanatory role of mindful parenting seems to occur accounting for each one of these variables in the models, but different results emerged regarding the buffering role of this variable on the association between history of maltreatment or the number of types of maltreatment experienced. These findings guide new research questions in the field and should also be accounted for in intervention development according to the severity of preadoption adversity.

Third, despite increased research concerning mindful parenting practices, the literature has not fully grasped this concept within the adoption field. Our study is the first, of our knowledge, to provide some understanding within these fields by exploring the positive role that mindful parenting practices could have in adopted children who suffered from preadoption maltreatment, namely, in its cumulative form. This research also showed an innovative design, not only considering its possible direct impact but also exploring its potential buffering effect. Moreover, the inclusion of children in different developmental stages was performed in such a way that it provides the researcher with an ample view of how different ages interacted with the study variables. Last, this study complements the research on both adoptive and mindful parenting fields, the latter a relatively new one, and emphasizes the role that well-timed mindful parenting interventions could have on the consequences of previous adversity for adoptees' adjustment. This knowledge could be helpful in guiding the development of parenting interventions in ways that promote healthier parenting skills that can shape more adaptive development and positive outcomes for adoptees. Thus, our findings may be valuable when planning future mindful-related research and interventions with this population, as they explore important but poorly studied topics in related fields.

Acknowledgements This study is part of a wider research project entitled "A Mindfulness approach to adoptive parents' psychological and parenting functioning: Comprehensive analysis and evaluation of a postadoption psychological intervention," integrated into the R&D

Unit Center for Research in Neuropsychology and Cognitive Behavioral Intervention, CINEICC. The authors wish to thank all research partners for the instrumental support provided to the implementation of this investigation: Instituto de Segurança Social, I.P. (PT), Instituto da Segurança Social dos Açores, ISS, IPRA (PT), Instituto de Segurança Social da Madeira, ISSM, IP-RAM (PT), Santa Casa da Misericórdia de Lisboa (PT), ProChild CoLAB Against Child Poverty and Social Exclusion, and Associação Tempos Brilhantes (PT).

Author Contribution All the authors of this manuscript have directly participated in the planning, execution, or analysis of the study. Conceptualization, methodology, validation, formal analysis: M. Rodrigues, M. Paulo Rato, M. C. Canavarro, R. Pires. Investigation, data curation, project administration, funding acquisition: R. Pires, M. C. Canavarro. Visualization: M. Rodrigues, M. Paulo Rato, M.C. Canavarro, R. Pires. Writing—original draft preparation, M. Rodrigues. Writing—review and editing, M. Rodrigues, M. Paulo Rato, M. C. Canavarro, R. Pires. Supervision: M. C. Canavarro, R. Pires. All authors have read and agreed to the published version of the manuscript.

Funding Open access funding provided by FCTIFCCN (b-on). This work was supported by structural funds of the Center for Research in Neuropsychology and Cognitive Behavioral Intervention, University of Coimbra (DOI:10.54499/UIIDP/00730/2020). Raquel Pires is supported by the Portuguese Foundation for Science and Technology through a research contract granted by the Funding Call "Scientific Employment Stimulus 2017" (CEECIND/02463/2017).

Data Availability The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical reasons.

Declarations

Ethics Approval The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra, Portugal (protocol code: NA; date of approval: 30-01-2020).

Informed Consent Informed consent was obtained from all subjects involved in the study.

Conflict of Interest The authors declare no competing interests.

Statement of Integrity I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

Use of Artificial Intelligence AI tools were not used in this study.

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