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Mariana Sofia Rodrigues

**EXPLORING THE ASSOCIATION BETWEEN PRE-  
ADOPTION MALTREATMENT AND POST-  
ADOPTION CHILD EMOTIONAL AND  
BEHAVIORAL DIFFICULTIES:  
THE ROLE OF MINDFUL PARENTING**

Dissertação no âmbito do Mestrado em Intervenções Cognitivo-Comportamentais em Psicologia Clínica e da Saúde orientada pela Professora Doutora Maria Cristina Cruz Sousa Portocarrero Canavarro e pela Doutora Raquel Sofia Antunes Pires e apresentada à Faculdade de Psicologia e de Ciências da Educação.

julho de 2022

Faculdade de Psicologia e Ciências da Educação  
da Universidade de Coimbra

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*“I think there are people that help you become the person that you end up being, and you can be grateful for them even if they were never meant to be in your life forever.”*

Diane Nguyen

## Resumo

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**Objetivos:** O principal objetivo deste estudo foi explorar a associação entre maus-tratos pré-adoção e dificuldades emocionais e comportamentais da criança após a adoção, explorando o potencial papel *buffer* da parentalidade mindful nesta associação. Foi também explorado o potencial papel moderador da idade atual da criança, do tempo decorrido desde a integração na família adotiva, e do sexo do pai adotivo que participou no estudo sobre o papel *buffer* da parentalidade mindful na associação anteriormente descrita. **Metodologia:** O presente estudo, transversal, inclui uma amostra de 277 pais, com filhos adotivos entre os 2 e 17 anos de idade. Os dados foram recolhidos através de um inquérito online, utilizando medidas de autorrelato. **Resultados:** Os nossos resultados sugerem que a experiência de maus-tratos pré-adoção e um maior número de diferentes tipos de maus-tratos sofridos se associam a maiores dificuldades emocionais e comportamentais das crianças adotivas, mesmo controlando uma vasta gama de outras variáveis relacionadas com os pais, crianças e com a adoção. Observou-se ainda um papel explicativo direto da parentalidade mindful sobre as dificuldades emocionais e comportamentais das crianças adotadas e também um papel moderador na associação entre maus-tratos pré-adoção e dificuldades emocionais e comportamentais das crianças adotadas até aos 8 anos de idade. **Conclusões:** Os nossos resultados podem permitir uma abordagem mais informada em relação à intervenção nas práticas parentais entre pais adotivos, nomeadamente quando as crianças foram vítimas de maus-tratos pré-adoção; apontam para a importância de intervir junto dos pais adotivos, nomeadamente através de intervenções baseadas nos princípios da parentalidade mindful, como forma de assegurar a sua capacidade de serem agentes eficazes na promoção da saúde mental das crianças, nomeadamente ajudando-as a recuperar das adversidades pré-adoção durante idades precoces.

*Palavras-chave:* maus-tratos infantis, problemas emocionais e comportamentais das crianças adotadas, parentalidade mindful, pais adotivos

## Abstract

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**Objectives:** The main goal of this study was to explore the association between pre-adoption maltreatment and post-adoption child emotional and behavioral difficulties while examining the potential buffering role of adoptive parents' mindful parenting on this association. The prospective moderator role of the child's current age, the time passed since the adoptive placement, and the parents' sex on the buffering role of mindful parenting on the previously described association was also explored. **Method:** The present cross-sectional study comprises a sample of 277 parents with adoptive children aged between 2 and 17 years old. The data was collected through an online survey, using self-report measures. **Results:** Our findings suggest that the experience of pre-adoption maltreatment and a higher number of different types of maltreatment are associated with higher adoptive children's emotional and behavioral difficulties, even after controlling for a wide range of other parent-, child-, and adoption-related variables. Mindful parenting had a direct explicative role on adoptees' emotional and behavioral difficulties and also moderated the association between pre-adoption maltreatment and adoptees' emotional and behavioral difficulties for children with up to 8 years old. **Conclusions:** Our results can allow a more informed approach concerning intervention in parental practices among adoptive parents, namely those parenting children who were victims of pre-adoption maltreatment; they are indicative of the importance to intervene with adoptive parents, namely through mindful parenting interventions, to ensure their capability of being effective agents in promoting children's mental health, namely by helping them recover from adoption adversity during early ages.

*Keywords:* child maltreatment, adopted children's emotional and behavioral problems, mindful parenting, adoptive parents

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## **Exploring the Association Between Pre-Adoption Maltreatment and Post-Adoption Child Emotional and Behavioral Difficulties: The Role of Mindful Parenting**

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Approximately 200 children are adopted each year in Portugal (RAA, 2020). As in other countries, these children have usually suffered several adverse life experiences, sometimes including different types of maltreatment (Instituto da Segurança Social, 2020; Crea et al., 2018; van Ijzendoorn & Juffer, 2006), and it is expected that they are more prone to developing adjustment problems than non-adopted children (Kriebel & Wentzel, 2011; Santos-Nunes et al., 2018). Nonetheless, there is a limited amount of research exploring the association between specific types of pre-adoption adversity – namely child maltreatment – and adoptees’ 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 none of them considered mindful parenting. Exploring the association between pre-adoption maltreatment and post-adoption child emotional and behavioral difficulties while attending to the potential moderating role of adopters’ mindful parenting would be an innovative step, both in the scientific field and in practice. More knowledge about these topics would clarify to which extent adoptees’ emotional and behavioral functioning may be negatively affected by pre-adoption maltreatment, but also how this impact may be permeable to mindful parenting practices in the adoptive family. This might guide the development of both prevention and intervention strategies that may allow higher-quality growth of adoptees, namely by presenting adoptive parents with a more informed approach and by improving their own mental health functioning while helping them to fit their child’s needs through a more aware, non-judgmental, and compassionate parenting (Ahemaitijiang et al., 2021).

### **Pre-Adoption Adversity and Post-Adoption Child Adjustment**

Adopted children are often subjected to early adversity prior to the adoption, making them more susceptible to both emotional and behavioral problems (Hornefeck et al., 2019) and subsequent maladaptive behavior (Simmel, 2007). Child adjustment after adoption is early influenced, among other variables, by the pre-adoption hardships, such as birth parent’s neglect or maltreatment (Hornefeck et al., 2019; van Ijzendoorn & Juffer, 2006). Neil, et al. (2020) demonstrated that increased amounts of maltreatment projected worse post-adoption outcomes, concerning overall adoption development and the adoptees’ improvement, in several areas such as physical, emotional, and behavioral development, as well as interpersonal relationships, among others.



Within the current literature, we can gather several typologies concerning maltreatment. For the purposes of this study, we will pertain to the one proposed by Barnett and colleagues (1993), which mentioned 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 could be globally described as an inadequate interpersonal phenomenon where there is usually an age and power disparity within a proximal relationship context. 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 impacts the child's development and wellbeing (Rosen et al., 2018). Cumulative child maltreatment concerns the occurrence of several adverse circumstances and events in a child's life, consistent with the occurrence of multiple 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, namely self-regulation, and interpersonal affiliation. This includes impairments in areas such as attachment, affect regulation, self-concept, biological, behavioral, and cognitive functioning (Cook et al., 2005; Kinniburgh et al., 2005). However, studies about pre-adoption maltreatment, the likely association among its experience and nature, and post-adoption emotional and behavioral problems, as well as the factors that may protect or repair its effect are still scarce. The current literature is more directed toward global approaches to maltreatment consequences (e.g., Kisely et al., 2018) without focusing on specific samples of adopted children, that also suffer the consequences of family separation, institutionalization, and adoptive placement(s), and, thus, that are expected to present specific risk and protective factors for maltreatment outcomes throughout their lifecycle (Holmgren et al., 2020).

There are other pre- and post-adoption factors that could explain the emotional and behavioral maladjustment of adopted children and that must be considered when we are looking at the effect of pre-adoption maltreatment on adoptees' adjustment. According to Neil et al. (2020), the effect of these risk factors is complex, as they overlap with each other thus, hindering the separation of distinct adversities' effects on children's development. Several authors stated that the adoptee's development could be impaired by factors such as pre-birth environment (e.g., in utero harm; genetic risks), deprivation in institutional care, multiple foster homes, age at adoptive placement, the way the transition process from foster care to the adoptive family is handled, and also factors pertaining to the adoptive family (e.g., parents'

motivation and expectations about adoption; parenting abilities) (Neil et al., 2020; Pace et al., 2021; Simmel et al., 2007; Hornefeck et al., 2019). However, most of the studies in the adoption field failed to take into consideration the isolated versus cumulative presence effect of these factors when looking for the consequences of pre-adoption adversity on adoptees' adjustment (Kriebel & Wentzel, 2011). There is also an absence of specific and consolidated knowledge about the protective or reparative role that adoptive parenting may have on the association between pre-adoption adversity and adoptees' emotional and behavioral outcomes (Kriebel & Wentzel, 2011; Holmgren et al., 2020). In Portugal, since 2015, the adoption law has acknowledged the need for post-adoption support which entails providing advice and support regarding problems that might arise in adoptive parenthood (Lei nº 143/2015, artigo 60º), but no structured support is yet available in the country. Adoptive parents usually refer to feeling unprepared for the challenges of adoptive parenting (Kohn-Willbridge et al., 2021) and frequently ask for professional support after adoption (Alves et al., in press). The present study may be important in the matter of realizing to what extent the adoptees' difficulties are related to pre-adoption maltreatment and identifying adoptive parents' related factors that can be promoted in order to decrease the risk of the occurrence and/or severity of these child's difficulties.

### **Adopters' Mindful Parenting as a Potential Buffer to Pre-Adoption Adversity**

Childhood is both a period of substantial development and a time of enhanced vulnerability. Accordingly, parenthood should always provide a sense of care, protection, and affection to their children since this bond is rooted in these conditions (Ferreira et al., 2004). Besides gratifying, parenthood can also be a stressful experience, especially when the difficulties can be heightened by the challenges of adoption. This could interfere with parental practices and, consequently with the parent-child interactions and the development of a healthy parent-child relationship (Tasker & Wood, 2016). However, despite increasing, there is still not enough evidence in adoption studies concerning the role that adoptive parenting could have in the relation between pre-adoption adversity and children's post-adoption adjustment.

Past research has shown that adoptive parenting can act as a predictor of child adaptive behavioral adjustment (Kriebel & Wentzel, 2011) and that pre-adoption risks along with unsupportive adoptive parenting could heighten the risk for 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 towards the child have been associated with lower

levels of internalizing problems (Anthony et al., 2019). Particularly important in the scope of the present study, Kriebel and Wentzel (2011) found a significant buffer effect of adoptive child-centered parenting on the effects of pre-adoption cumulative risks on adoptees' behavior. Using a sample of seventy 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 pre-adoption 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 adaptive child behavior post-adoption. 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 give emphasis to the development of a positive parent-child relationship, particularly promoting in adoptive parents a more child-centered approach (Kriebel & Wentzel, 2011).

Growing evidence shows that the integration of mindful practices in parents' interactions enables a shift in perception of their parenting in the present moment (Duncan et al., 2009). Mindful parenting implies a more aware and attentive approach to parenthood. Parents ought to consider their children's needs while being able to adjust their own attitudes towards them. Likewise, an insightful acceptance without criticism of the present domain aims at facilitating a deeper understanding and involvement in the parent-child relationship (Kabat-Zinn & Kabat-Zinn, 2021). Duncan et al.'s (2009) model of mindful parenting implies that mindful awareness in parents increases the probability of building better relationships with their child and preventing forms of maladaptive parenting conduct.

Mindful parenting interventions are oriented towards the parent-child relationship and emphasize thoughtful communication, 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 child's characteristics and accept their way of being as well as become more conscious of their own emotions towards the child. Hence, when facing challenging situations, the parent's ability to be mindful could improve their mental competencies towards intransigent circumstances and may even allow healthier psychological well-being (Chan & Lam, 2017). In this line of reasoning, Meppelink et al. (2016) also found that improvements in mindful parenting predicted a significant reduction in children's externalizing problems, as reported by parents. 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 (Gurney-Smith et al., 2017).

Although mindful parenting is an evolving subject, studies have revealed the benefit of this intervention concerning parent and child outcomes and its impact on achieving more significant parent-child interactions including shaping adoptees' positive behaviors (Ahemaitijiang et al., 2021; Han et al., 2021). Even though not having much information regarding mindful parenting in the adoption field, knowledge about the potential buffer effect of this parenting approach on the association between child's pre-adoption adversity and post-adoption adjustment would be pertinent to ascertain the relevance to invest in future interventions based on mindful parenting with adoptive families, namely in the presence of pre-adoption (severe) history of child maltreatment.

### **Potential Moderators of the Buffering Role of Mindful Parenting**

As stated above, there is a lack of studies exploring the effect of adoptive parenting on the association between pre-adoption adversity and adoptees' adjustment, and none of them focuses on the specific role of mindful parenting. Moreover, other important gaps arise in the literature regarding the circumstances under which adoptive parenting can act as a buffer of pre-adoption adversity, as well as those circumstances under which mindful parenting may arise as a protective factor against maladjustment. It is the case, for example, of the child's developmental stage, the time passed since the adoptive placement and the parent's sex.

The child's developmental stage in the moments that the child's adjustment is measured is considered a key variable in the adoption research (Soares et al., 2019; Juffer & van IJzendoorn, 2005), thence posing an additional asset to better understand the impact of mindful parenting practices towards adoptees. Duncan et al. (2009), when describing the theoretical and empirical principles of mindful parenting, admitted that the specificities of children's developmental stages throughout their life course could influence mindful parenting and its effects. So far, 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 adolescence (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 consensual. 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 greatly related to parenting, in relation to adolescent's anxiety. In contrast, Parent et al.'s (2016) study showed that greater levels of mindful parenting were associated with reduced amounts of internalizing and externalizing problems across different developmental stages, from 3 to 17 years old. Medeiros, et al. (2016) also suggested that mindful parenting practices are not necessarily associated with the child's developmental stage. Although there is no clear information to formulate a specific hypothesis regarding this topic, in the scope of the present study, it seems particularly important to investigate whether the child's current age may contribute to variations in the buffer role of mindful parenting on the association between maltreatment and adoptees' adjustment.

Overall, adoption research pertaining to child's adjustment has addressed the child's current age (e.g., school-age), however, few have considered the time passed since the adoptive placement. Since adoption may establish positive effects regarding developmental catch-up of adoptees throughout time (van Ijzendoorn & Juffer, 2006; Palacios et al., 2011), this implies a connection between a lengthier permanence with the adoptive family and child's positive outcomes (Jiménez-Etcheverría & Palacios, 2020). As such, it would also be pertinent to further assess the time that the adoptee had within the adoptive family setting, i.e., the time passed since adoptive placement. According to Soares et al. (2019), for example, time since adoption was a relevant predictor of adoptees' social competence when considered in interaction with the child's pre-adoption 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 enhancing adoptees' susceptibility to develop emotional and behavioral problems (van Ijzendoorn & Juffer, 2006; Van den Dries et al., 2009). Early adoption might imply, for example, reduced levels of both antisocial behavior and negative emotionality, suggestive of healthier psychological adjustment (Bencuya, 2013). Conversely, by enduring lengthier exposure to pre-adoption 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. In line with the existing literature, it seems reasonable to expect that the buffering role of mindful parenting may be positively associated with the time since the adoptive placement.

Finally, 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). Nevertheless, mindful parenting of both sexes has shown to influence the child's well-being (Medeiros et al., 2016). Although there is no available information regarding potential disparities among mothers and fathers that might exert an effect on mindful parenting practices in an adoption-related sample, it would be important to confirm whether the buffering role of mindful parenting in this context can be equally attributed to mothers and fathers.

Conclusively, a grasp on the contribution of the child's current age, the time passed since placement, and the adoptive parent's sex as possible moderators of the buffering effect of mindful parenting on the association between pre-adoption maltreatment and post-adoption child's adjustment would allow a more suitable and beneficial adaptation to specific groups in which the effects of mindful parenting intervention can potentially be more valuable. Moreover, it could help establish clearer understanding of the potential protective role that parental practices can have on children's adjustment throughout the adoptive family lifecycle.

### **The Present Study**

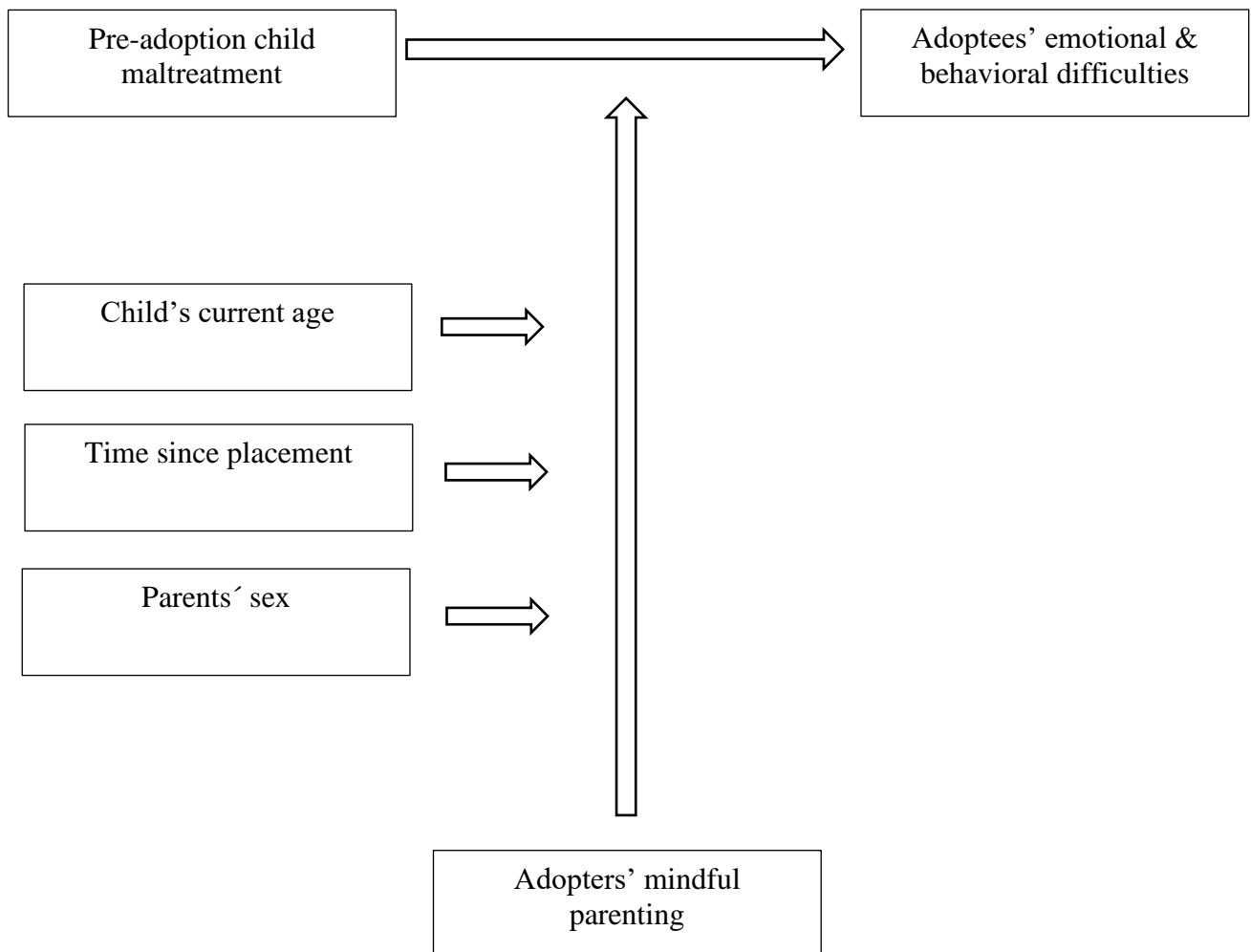
Since adopted children have a prominent risk for maladjustment due to pre-adoption adversity (Bencuya, 2013), and the role of adoptive parenting seems to be of extreme relevance for adoptees' behavioral and emotional adjustment (Holmgren et al., 2020), it is crucial to provide ways to assist adoptive families in their parental task. This may prevent adoption dissolution while promoting family well-being and resilience, as well as wholesome growth in adoptees (Bencuya, 2013). In line with this, the main goal of the present study was to analyze the association between pre-adoption maltreatment and adoptees' emotional and behavioral difficulties, while exploring to what extent and under what circumstances adopters' mindful parenting could buffer this association. This knowledge could be helpful in guiding the arrangement of parenting interventions in ways that promote healthier parenting skills that can shape a more adaptive development and positive outcomes for adoptees.

Even though there are numerous studies with essential related subjects linked to the adoptive parenting literature, there is a severe lack of information regarding adopters' mindful parenting practices and its effects. To our knowledge, no previous studies explore the possible

buffering role of adopters' mindful parenting on the consequences of pre-adoption maltreatment on adoptees' adjustment. Although adopters' mindful parenting must be limited in its effect according to the child's developmental stage, the time passed since the adoptive placement and the adopters' sex and the respective literature is somewhat limited and do not allow for specific hypothesis, it seems plausible to expect that adopters' mindful parenting may weaken the expected association between pre-adoption maltreatment and post-adoption child emotional and behavioral difficulties, at least under specific circumstances. As such, the present study intended to analyze several moderated moderation models of the association between pre-adoption maltreatment and post-adoption child emotional and behavioral difficulties, while controlling for other pre- and post-adoption factors related to the child, the adopters' and the adoption process that had been also associated with adoptee's emotional and behavioral difficulties (Figure 1).

**Figure 1**

*Proposed Conceptual Model*





## Method

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### Participants

This study included 277 Portuguese adoptive parents (independent observations), 76.2% of whom were females, with ages between 35 and 66 years old ( $M = 46.70$ ,  $SD = 5.20$ ). Nearly half of the participants (72.2%) had a university/postgraduate degree, and the majority were married (69.7%) and employed (93.9%). There was an average of one adoptive child per family. Most of the participants (84.8%) had only adoptive children (vs. both adopted and biological children).

The adoptive children were predominantly males (56.7%), and their mean age was 10 years old. Children spent 0 to 11 years in foster care ( $M = 2.45$ ,  $SD = 1.78$ ). Some adoptees' difficulties reported by their parents were: intellectual or physical disability (3.2%), physical health conditions (7.6%), and psychological or psychiatric problems (9.0 %). The number of children adopted at the same time was, on average, 1.20. The child's mean age at adoptive placement was 4 years old and, on average, six years passed since their adoptive placement. More detailed data here stated is shown in Table 1.

**Table 1**

*Sample Characteristics: Descriptive Statistics*

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Study Variables	Total Sample $N = 277$
<hr/>	
Adoptive Parents-Related	
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Age (years); <i>Mean (SD; Range)</i>	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>	

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Adoptive Parents-Related	
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 (SD; Range)</i>	3.23 (1.0)
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)
Infected with Covid-19; <i>n</i> (%)	
No	271 (97.8)
Yes	6 (2.2)
Risk population for Covid-19; <i>n</i> (%)	
No	245 (88.4)
Yes	32 (11.6)
Perceived impact of Covid-19; <i>Mean (SD; Range)</i> <sup>a</sup>	2.60 (0.39; 1 – 4)
Child- Related	
Age; <i>Mean (SD; Range)</i>	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)
Infected with Covid-19; <i>n</i> (%)	
No	271 (97.8)
Yes	6 (2.2)
Risk population for Covid-19; <i>n</i> (%)	
No	262 (94.6)
Yes	15 (5.4)
Perceived impact of Covid-19; <i>Mean (SD; Range)</i> <sup>a</sup>	2.71 (0.46; 1 – 4)

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 (SD; Range)</i>	1.20 (0.48; 0-4)
Number of years spent in foster care; <i>Mean (SD; Range)</i>	2.45 (1.78; 0-11)
Child's age at placement (years); <i>Mean (SD; Range)</i>	4.37 (3.06; 0 – 15)
Years passed since integration; <i>Mean (SD; Range)</i>	6.03 (3.41; 0 – 16)

*Note.* \* $p < .05$  \*\*  $p < .01$ ; \*\*\*  $p < .001$

<sup>a</sup> The perceived impact of Covid-19 was measured through a bipolar adjective scale in which higher and lower values indicated, respectively, a greater positive and a greater negative perceived impact of Covid-19 in the participants' lives.

## **Procedures**

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 post-adoption psychological intervention”. The Ethics and Deontology Committee of Investigation from the Faculty of Psychology and Education Sciences of the University of Coimbra approved this investigation to secure the protection of the participant’s rights. Participation in this study was voluntary and the recruitment occurred through all the 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 the link to the online survey. The confidentiality of potential participants and anonymity of the participant’s 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 had to provide their informed consent making clear that they accepted to participate in this study by selecting the option “yes, I authorize”.

To be eligible for the present study, parents had to (1) be 18 years or older and (2) have at least one adoptive child between 2 and 17 years old. If they have more than one child between 2 and 17 years old, they receive instructions to provide information about the child with whom they experienced more difficulties. Among parents with adoptive and biological children, only parents reporting to an adoptive child as whom they experienced more difficulties were included in the present study. The data used in the present study corresponds to a partial sample of the main project, gathered between September 2020 and June 2021 through an online survey created by the authors for the purposes of this investigation; the online assessment protocol consisted of self-response questionnaires.

## **Measures**

The authors of the aforementioned research project created an online survey consisting in a data form regarding participants and their children’s information (i.e., sociodemographic, health, and adoption-related data) and self-report questionnaires.

### ***Sociodemographic, Health, and Adoption-Related Data***

Sociodemographic, health, and adoption-related data included the participants answers to questions regarding their sociodemographic (e.g., age, sex, marital status, education, professional status, and family household) and health-related information’s (e.g., physical, or

mental health conditions). Questions related to the children were also included (e.g., age, sex). Since the data collection took place during the Covid-19 pandemic, questions pertaining to this subject were included (e.g., about the perceived impact of the pandemic of both parent and child), given that they could interfere with the study's outcome and contribute to provide a comprehensible framework of the environment on which the sample collection occurred. The perceived impact of Covid-19 was measured through the response to the question "*Please, rate the impact that Covid-19 pandemic had/has in each one of the following areas of your life and of the life of your child*", applying a 5-point scale (from 1 = *Very negative impact* to 5= *Very positive impact*). The scales included items concerning physical and psychological health, relationships with friends, and extended family, and specifically, the parent's scale involved items regarding the relationship with the child(ren), and parental role. While higher scores revealed a more positive perceived impact, lower scores signaled a more negative perceived impact. Both scales showed good internal consistency, the parent's scale (7 items) with an alpha of .71 and the children's scale (8 items), with an alfa of .80. 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 has occurred).

### ***Pre-Adoption Child Maltreatment***

Adoptive parents were asked to identify all the reasons for previous foster care measures of their child. According to the national 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 labour, commitment of crime by underage child, severe deviant behavior, abandonment, orphanhood, temporary absence of family support, non-accompanied underage foreigners, PALOP health deal, and previous consent for adoption. For the present study, participants' answers were coded in to two different variables. First, history of pre-adoption maltreatment was coded through a "yes" or "no" type of answer, meaning if the child had at least one type of pre-adoption maltreatment (among the ensuing physical abuse, sexual abuse, psychological/emotional abuse, physical neglect, psychological/emotional neglect, child labour [Barnett et al.,1993]), it was coded as a "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***

Adoptees' emotional and behavioral difficulties were assessed through the application of two different forms of the Pediatric Symptom Checklist: The Pediatric Symptom Checklist (PSC17) and the Preschool Pediatric Symptom Checklist (PPSC). The latter one 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 Pediatric Symptom Checklist (PSC17; Jellinek et al., 1988; Pereira et al., 2020) is a self-response screening questionnaire that is used to assess the psychosocial functioning of a child (6-12 years), 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, children's ages ranged from 6 to 17 years old and only the total score was applied. Higher results (total score ranges between 0 and 34) indicated a greater risk of problems in psychosocial functioning. The PSC17 displays high reliability, with an internal consistency of .89 and values of test-retest at .85 (Murphy et al., 2016). In the current sample, the instrument presented good internal consistency with Cronbach's alpha of .83.

The Preschool Pediatric Symptom Checklist (PPSC; Sheldrick et al., 2012; Pereira et al., 2020) is a screening instrument that monitors the social/emotional problems of a child (aged 18 months to 5 years old), corresponding to parents' perception. Similar to the PSC17, it employs a 3-point Likert scale and consists of 18 items within four subscales: Internalizing Problems, Externalizing Problems, Attention problems, and Parenting Challenges. The present sample included children whose ages ranged from 24 months to 5 years old. Moreover, only the total score was used in this research. Higher scores (total score ranges between 0 and 36) might imply a greater risk for social/emotional problems. This questionnaire displays high reliability in the Primary Care sample (.88), the Referral Clinic sample (.92), and in the Replication sample (.86). Additionally, it showed acceptable values of test-retest at .75 (Sheldrick et al., 2012). In the present sample, the instrument displayed good internal consistency with Cronbach's alpha of .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's self-response questionnaire, which 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 research's questionnaire was meant for parents of children aged 24 months to 17 years and the total score was used as an indicator of mindful parenting, where higher results 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 the correlation with self-compassion, parenting stress, and perceived stress measures (Moreira & Canavarro, 2017). In the present sample, the instrument displayed good internal consistency with Cronbach's alpha of .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 study variables, descriptive statistics (means, standard deviations, minimum and maximum values, frequencies, and percentages) 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  $p < .05$ . Correlations around .10 present a small effect, when close to .30 a medium effect, and at .50 or higher, a large effect (Cohen, 1988). The variables which presented a significant correlation with the outcome (i.e., adoptees' emotional and behavioral difficulties) were further included in hierarchical linear regression models aimed to identify the independent contribution of the study variables to the adoptees' emotional and behavioral difficulties. Two models were built: one including the assessment of the independent contribution of the history of pre-adoption maltreatment to the children's emotional and behavioral difficulties (i.e., 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 children's emotional and behavioral difficulties (i.e., 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. Parent, child, and adoption-related variables with significant contributions to the outcome were included in the subsequent analysis. Considering the wide range of co-variables in the model and the sample used in each one of the regression models, we assumed a significant level of  $p < .10$ .

After the described preliminary analyses, and using the 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 pre-adoption maltreatment and children's behavioral and emotional difficulties (i.e., simple moderation model for the total sample) and 2) between the number of different types of maltreatment and the same outcome (i.e., simple moderation model for participants who reported 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 (i.e., parents' sex, child's current age, and time passed since the adoptive placement) and significant child-, parent-, and adoption-related co-variables identified through previous regression models. Then, six moderated moderation analyses (Model 3; Hayes, 2022) were conducted to explore each one of the three-way interactions proposed for the association between 1) history of pre-adoption maltreatment and children's behavioral and emotional difficulties (i.e., moderated moderation models for the total sample, including the child's current age, time passed since the adoptive placement, and adopter's sex models); and between 2) the number of different types of maltreatment experienced and the same outcome (i.e., moderated moderation models for participants who reported their adopted children experienced at least one type of maltreatment, including child's current age, time passed since the adoptive placement and parents' sex models). With these models we intended to assess if the magnitude of the moderation of mindful parenting on these associations depended on the parent's sex, child's current age, and/or the time passed since the adoptive placement. Interactions that were significant at  $p < .10$  (90% CI) were then probed. The conditional values for significant interactions were calculated for different values of the moderators (i.e.,  $-1SD$ ,  $M$ ,  $+1SD$ ) and interaction plots were built. The Johnson-Neyman technique (Hayes, 2022) was also used, allowing us to describe with full detail the moderating effect that the parent's sex, child's current age, and time passed since the adoptive placement had on the moderated effects of mindful parenting on the association between history of pre-adoption of maltreatment/number of different types of maltreatment and child emotional and behavioral difficulties.



## Results

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### 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. About 59.6 % ( $n = 165$ ) of the parents reported their children suffered at least one type of pre-adoption maltreatment. The remained reported other pre-adoption adverse life experiences (e.g., abandonment, orphanhood, temporary absence of family support), but no type of child maltreatment. Regarding the number of different types of maltreatment suffered, as described in Table 2, parents reported their adopted children experienced one to five types of child maltreatment, with an average number of 1.13 ( $SD = 1.2$ ).

**Table 2**

*Study Variables: Descriptive Statistics*

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Study Variables	Total Sample
	N=277
<hr/>	
History of pre-adoption maltreatment, $n$ (%)	
No	112 (40.4)
Yes	165 (59.6)
Number of maltreatment types; <i>Mean (SD; Range)</i>	1.13 (1.2; 1-5)
Behavioral and emotional difficulties (PSC17, PPSC scores); <i>Mean (SD)</i>	29.17 (16.9)
(Observed Range-Possible Range)	(0-85; 0-100)
Primary moderator	
Mindful parenting (IMP score); <i>Mean (SD)</i>	108.56 (12.23)
(Observed Range-Possible Range)	(66-140; 31-155)

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Significant and positive associations were found between child's emotional and behavioral difficulties and parent's mental health conditions ( $r = .18, p < .01$ ), child's intellectual or physical disability ( $r = .14, p < .05$ ), number of children adopted at the same time ( $r = .17, p < .01$ ), child's age at adoptive placement ( $r = .27, p < .01$ ), child's current age ( $r = .38, p < .01$ ), years passed since the adoptive placement ( $r = .18, p < .01$ ), and history of pre-adoption maltreatment ( $r = .23, p < .01$ ). Significant negative associations were found between child's emotional and behavioral difficulties and perceived impact of Covid-19 in both parent's own life ( $r = -.25, p < .01$ ) and child's life ( $r = -.28, p < .01$ ), as well as between child's emotional and behavioral difficulties and mindful parenting ( $r = -.54, p < .01$ ).

### **Preliminary Regression Models**

In the hierarchical regression model explaining child's emotional and behavioral difficulties for the total sample (Table 3), when considered alone (i.e., with no other variables in the model), parents' psychological/psychiatric diagnostic and perceived impact of Covid-19 on their own life (step 1) significantly explained 9% of the variance in the outcome [ $F(2, 272) = 14.14, p < .001$ ]; considered together with children's intellectual or physical disability, perceived impact of Covid-19 on child's life (step 2), the number of children adopted at the same time (step 3), and history of pre-adoption maltreatment (step 4), these variables significantly explained 15% [ $F(4, 270) = 12.02, p < .001$ ], 19% [ $F(5, 269) = 12.40, p < .001$ ], and 22% [ $F(6, 268) = 12.23, p < .001$ ] of the variance in the outcome, respectively. Adding to these variables the significant contribution of mindful parenting (step 5), the contribution of parents' psychological/psychiatric diagnostic became non-significant and all the variables in the model accounted for 40% of the variance in the outcome [ $F(7, 267) = 24.92, p < .001$ ]. Finally, considering the significant contribution of the child's current age (step 6), the independent variables in the model accounted for 46% of the variance in the outcome [ $F(10, 264) = 22.80, p < .001$ ]. In the final model, considering only the study variables and the significant co-variables in the previous regression model, greater child's emotional and behavioral difficulties were significantly explained by a negative perception of Covid-19 in parents' and child's lives, the presence of child's intellectual or physical disability, a higher number of children adopted at the same time, the existence of pre-adoption history of maltreatment, lower levels of mindful parenting and the higher child's current age.

**Table 3**

*Hierarchical Linear Regression Models Explaining Child Emotional and Behavioral Difficulties: Total Sample (n = 277)*

	Step 1: DR <sup>2</sup> = .09 ΔF(2,272) =14.14 *** R <sup>2</sup> = .09		Step 2: DR <sup>2</sup> = .06 ΔF(2, 270) = 9.06 *** R <sup>2</sup> = .15		Step 3: DR <sup>2</sup> = .04 ΔF(1, 269) = 11.95** R <sup>2</sup> = .19		Step 4: DR <sup>2</sup> = .03 ΔF(1,268) =9.47** R <sup>2</sup> = .22		Step 5: DR <sup>2</sup> = .18 ΔF(1, 267) = 79.55*** R <sup>2</sup> = .40		Step 6: DR <sup>2</sup> = .07 ΔF(3,264) =11.19 F (10, 264) = 22.80*** R <sup>2</sup> = .46		Final Model <sup>a</sup> F(9, 265) = 25.25*** R <sup>2</sup> = .46	
	b (b)	t	b (b)	t	b (b)	t	b (b)	t	b (b)	t	b (b)	t	b (b)	t
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 co-variables														
Psychological/psychiatric diagnostic	4.98 (.17)	2.96**	5.01 (.17)	3.06**	5.52 (.19)	3.43**	5.13 (.18)	3.23**	1.69 (.06)	1.17	1.32 (.05)	0.94		
Perceived impact of Covid-19 on own life	-11.02 (-.25)	-4.40***	-6.02 (-.14)	-2.05*	-5.93 (-.14)	-2.06*	-6.16 (-.14)	-2.17*	-5.89 (-.14)	-2.36*	-4.60(-.11)	-1.94†	-4.65 (-.11)	-1.96 †
Child-related co-variables														
Intellectual or physical disability			15.26 (.16)	2.85**	15.09 (.16)	2.88**	15.92 (.17)	3.08**	9.49 (.10)	2.06*	8.01(.08)	1.83†	7.93 (.08)	1.81 †
Perceived impact of Covid-19 on child's life			-8.31(-.22)	-3.30**	-8.48 (-.23)	-3.43**	-7.72 (-.21)	-3.16**	-3.70(-.10)	-1.69†	-3.64(-.10)	-1.75†	-3.47 (-.09)	-1.68 †
Adoption-related co-variables														
N° of children adopted at the same time					6.69 (.19)	3.46**	5.58 (.16)	2.88**	4.42 (.13)	2.59*	2.94 (.08)	1.78†	2.73 (.08)	1.67 †
Study Variables: Independent variable														
History of pre-adoption maltreatment							5.88(.17)	3.08**	6.09 (.18)	3.63***	2.97 (.09)	1.68†	3.04(.09)	1.73 †
Study Variables: Primary moderator														
Mindful parenting									-0.63 (-.46)	-8.92***	-0.63 (-.45)	-9.22***	-0.64 (-.46)	-9.83***
Study Variables: Secondary moderators														
Parent's sex											0.90 (.02)	0.48	1.25(.03)	0.68
Child's current age											1.51 (.34)	4.94***	1.53 (.34)	5.04***
Years passed since adoptive placement											-0.44 (-.09)	-1.37	-0.46 (-.09)	-1.44

Note. Study variables and significant co-variates only. † p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001

In the hierarchical regression model explaining child's emotional and behavioral difficulties for participants who reported their adopted children experienced at least one type of maltreatment (Table 4), in the first step the perceived impact of Covid-19 on parents' own life explained 10% of the variance in the outcome [ $F(2, 160) = 8.36, p < .001$ ]. However, adding to the model the significant contribution of children's intellectual or physical disability, and perceived impact of Covid-19 on child's life (step 2), the contribution of parents' perceived impact of Covid-19 in their own life became non-significant and the variables in the model significantly explained 19% of the variance in the outcome [ $F(4, 158) = 8.95, p < .001$ ]. When the number of children adopted at the same time (step 3), the number of different types of maltreatment (step 4), and mindful parenting (step 5) were added, the model significantly explained 21% [ $F(5, 157) = 8.48, p < .001$ ], 22% [ $F(6, 156) = 7.23, p < .001$ ], and 44% [ $F(7, 155) = 17.32, p < .001$ ] of variance in the outcome, respectively. Finally, considering the significant contribution of the child's current age and the time passed since the adoptive placement (step 6), the model accounted for 47% of the variance in the outcome [ $F(10, 152) = 13.35, p < .001$ ]. In the final model, considering only the study variables and the significant co-variables in the previous regression model, greater child's emotional and behavioral difficulties were significantly explained by the presence of child's intellectual or physical disability, a negative perception of Covid-19 in child's lives, the number of types of maltreatment, lower levels of mindful parenting, the higher child's current age and a less amount of time passed since placement.

**Table 4**

*Hierarchical Linear Regression Models Explaining Child's Emotional and Behavioral Difficulties: Parents who Reported Their Children Experienced Pre-Adoption Maltreatment (n = 165)*

	Step 1:		Step 2:		Step 3:		Step 4:		Step 5:		Step 6:		Final model <sup>a</sup> :	
	$DR^2 = .10$		$DR^2 = .09$		$DR^2 = .03$		$DR^2 = .01$		$DR^2 = .22$		$DR^2 = .03$		$F(7,155)$ $= 18.71^{***}$ $R^2 = .46$	
	$\Delta F(2, 160)$ $= 8.36^{***}$		$\Delta F(2, 158)$ $= 8.72^{***}$		$\Delta F(1, 157)$ $= 5.56^*$		$\Delta F(1, 156)$ $= 0.99$		$\Delta F(1, 155)$ $= 61.18^{***}$		$\Delta F(3, 152)$ $= 2.72^*$		$F(10, 152)$ $= 13.35^{***}$ $R^2 = .47$	
	$R^2 = .10$		$R^2 = .19$		$R^2 = .21$		$R^2 = .22$		$R^2 = .44$		$R^2 = .47$			
	<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	63.54	7.70 <sup>***</sup>	71.33	8.57 <sup>***</sup>	66.19	7.79 <sup>***</sup>	63.86	7.25 <sup>***</sup>	120.53	11.57 <sup>***</sup>	116.24	10.41 <sup>***</sup>	115.99	11.14 <sup>***</sup>
Parent-related co-variables														
Psychological/psychiatric diagnostic	2.20 (.08)	1.07	2.77 (.10)	1.41	3.42 (.13)	1.75†	3.13 (.12)	1.58	0.71 (.03)	0.42	0.50 (.02)	0.29		
Perceived impact of Covid-19 on own life	-12.32(-.30)	-3.92 <sup>***</sup>	-4.24 (-.10)	-1.08	-4.20 (-.10)	-1.08	-3.90 (-.09)	-1.00	-2.94 (-.07)	0.89	-2.80 (-.07)	-0.86		
Child-related co-variables														
Intellectual or physical disability			20.28 (.20)	2.73 <sup>**</sup>	19.12 (.19)	2.60*	18.72 (.18)	2.55*	15.67 (.15)	2.50*	15.83 (.15)	2.57*	16.23 (.16)	2.64 <sup>**</sup>
Perceived impact of Covid-19 on child's life			-11.00(-.30)	-3.16 <sup>**</sup>	-11.54 (-.31)	-3.36 <sup>**</sup>	-11.66 (-.32)	-3.39 <sup>**</sup>	-6.52 (-.18)	-2.18*	-6.42 (-.17)	-2.18*	-7.61 (-.21)	-3.32 <sup>**</sup>
Adoption related co-variables														
N° of adopted children (at the same time)					5.00 (.17)	2.36*	4.58 (.16)	2.12*	3.34 (.11)	1.81†	2.61 (.09)	1.43		
Study variables: Independent variable														
Number of types of maltreatment							1.31 (.07)	1.00	2.46 (.14)	2.17*	1.69 (.09)	1.47	2.05 (.11)	1.83 †
Study variables: Primary moderator														
Mindful parenting									-0.67(-.50)	-7.82 <sup>***</sup>	-0.69 (-.51)	-8.06 <sup>***</sup>	-0.70 (-.53)	-8.40 <sup>***</sup>
Study variables: Secondary moderators														
Parent's sex											1.23 (.03)	0.55	1.41 (.04)	0.64
Child's current age											1.07 (.22)	2.79 <sup>**</sup>	1.14 (.24)	3.02 <sup>**</sup>
Years passed since adoptive placement											-0.85 (-.17)	-2.17*	-0.91 (-.18)	-2.35*

*Note. Study variables and significant co-variables only. † p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001*

### **Simple Moderation Models**

In the simple moderation analyses for the total sample, the interactions between history of pre-adoption maltreatment and mindful parenting when explaining child's emotional and behavioral difficulties, while controlling for other study variables and significant co-variables, were not significant with  $b = -0.10$ ,  $SE = 0.13$ , 90% CI = [-.31, .11];  $R^2 = 0.00$ ,  $F(1, 264) = 0.56$ ,  $p = .45$ . Similarly, for participants who reported their adopted children experienced at least one type of maltreatment, the interaction between number of types of maltreatment and mindful parenting when explaining the outcome, while controlling for other study variables and significant co-variables, were not significant with  $b = 0.08$ ,  $SE = 0.09$ , 90% CI = [-.07, .22];  $R^2 = 0.00$ ,  $F(1, 154) = 0.77$ ,  $p = .38$ .

### **Moderated Moderation Models**

The moderated moderation model presented in Table 5 found a positive and significant interaction between history of pre-adoption maltreatment, mindful parenting, and child's current age when explaining children's emotional and behavioral difficulties ( $b = 0.07$ , 90% CI = [.01, .13]).

**Table 5**

*Moderated Moderation Model of the Association Between History of Pre-Adoption Maltreatment and Child's Emotional and Behavioral Difficulties. Primary Moderator: Mindful Parenting. Secondary Moderator: Child's Current Age*

	90% CI					
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LL</i>	<i>UL</i>
(Constant)	35.67	27.13	1.31	.19	-9.11	80.45
Independent variable						
History of pre-adoption maltreatment	104.06	39.53	2.63	.01	38.82	169.30
Primary moderator						
Mindful parenting	-0.09	0.24	-0.39	.70	-0.49	0.30
Secondary moderators						
Child's current age	7.60	2.59	2.93	.00	3.32	11.87
Years passed since integration	-0.52	0.32	-1.64	.10	-1.04	0.00
Sex	1.08	1.80	0.60	.55	-1.90	4.06
Perceived impact of Covid-19 on own life	-4.38	2.34	-1.87	.06	-8.25	-0.52
Perceived impact of Covid-19 on child's life	-3.82	2.05	-1.86	.06	-7.21	-0.43
Intellectual and physical disability	6.90	4.34	1.59	.11	-0.26	14.07
Number of children adopted at the same time	2.96	1.61	1.83	.07	0.30	5.61
Child's current age						
Interaction 1 <sup>a</sup>	-0.81	0.36	-2.27	.02	-1.39	-0.22
Interaction 2 <sup>b</sup>	-8.91	3.72	-2.39	.02	-15.05	-2.76
Interaction 3 <sup>c</sup>	-0.05	0.02	-2.10	.04	-0.09	-0.01
Interaction 4 <sup>d</sup>	0.07	0.03	2.06	.04	0.01	0.13

*Note.* CI = confidence interval; LL = lower limit; UL = upper limit

a. Interaction 1= History of pre-adoption maltreatment \* Mindful parenting

b. Interaction 2= History of pre-adoption maltreatment \* Child's current age

c. Interaction 3= Mindful parenting\* Child's current age

d. Interaction 4= History of pre-adoption maltreatment \* Mindful parenting\* Child's current age

The analysis of the conditional interaction between history of pre-adoption maltreatment and mindful parenting at different values of child's current age (Table 6) showed that this interaction is only significant at earlier child's current ages (i.e.,  $M-1SD = 6.14$ ). According to Table 7, the explicative role of history of pre-adoption maltreatment on child's emotional and behavioral difficulties was not significant at higher child's ages (i.e.,  $M+1SD = 13.70$ ) for any level of mindful parenting. However, at medium child's ages (i.e.,  $M = 9.92$ ) the explicative role of history of pre-adoption maltreatment on child's emotional and behavioral difficulties is significant unless the levels of mindful parenting were medium (i.e.,  $M = 108.51$ ) to high (i.e.,  $M+1SD = 120.76$ ). At low child's ages (i.e.,  $M-1SD = 6.14$ ) the explicative role of history of pre-adoption maltreatment on child's emotional and behavioral difficulties is also significant unless the levels of mindful parenting were high (i.e.,  $M+1SD = 120.76$ ). As illustrated in the interaction plots for this three-way interaction (Figure 4), as the child's age increases, the potential buffer effect of mindful parenting on the association between history of pre-adoption maltreatment and child's emotional and behavioral difficulties decreases. The Johnson-Neyman significance region suggested that mindful parenting was a significant moderator of this association between history of pre-adoption 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],  $p = .08$ ). None of the remaining three-way interactions hypothesized in our conceptual model was significant. Additional data is presented in Figures 2 and 3.

**Table 6**

*Conditional Interaction Between History of Pre-Adoption Maltreatment and Mindful Parenting at Different Values of Child's Current Age*

Child's Current Age	Effect	F (df)	<i>p</i>
<i>M-1SD</i> (6.14)	-0.38	4.57 (1, 261)	.03
<i>M</i> (9.92)	-0.12	0.88 (1, 261)	.35
<i>M+ 1SD</i> (13.70)	0.14	0.64 (1, 261)	.43



**Table 7**

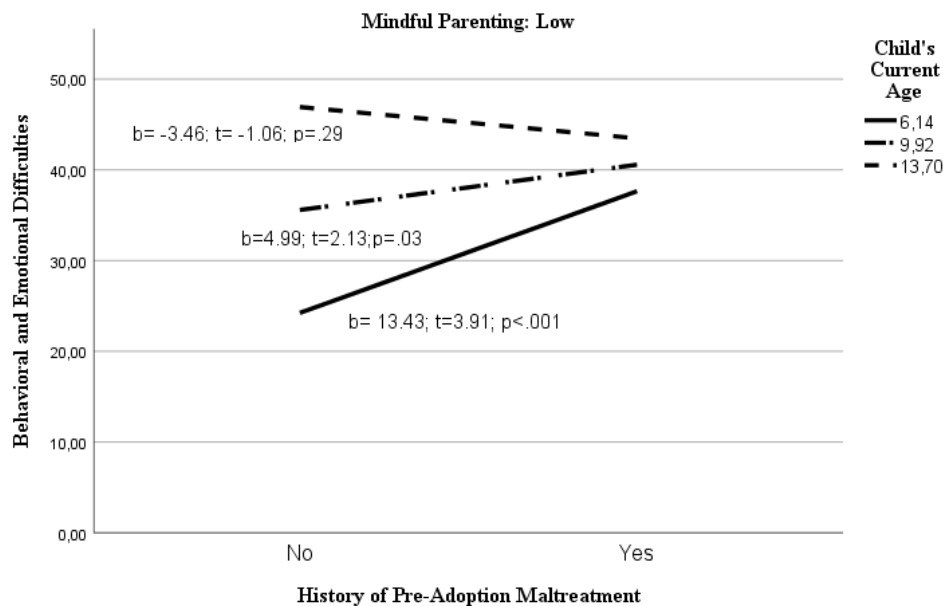
*Conditional Effects of Pre-Adoption Maltreatment on Child's Emotional and Behavioral Difficulties at Different Values of Mindful Parenting and Child's Current Age*

Primary Moderator	Secondary Moderator	90% CI					
Mindful Parenting	Child's Current Age	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LL</i>	<i>UL</i>
Low							
96.26	6.14	12.70	3.35	3.79	.00	7.17	18.22
96.26	9.92	4.30	2.30	1.87	.06	0.51	8.10
96.26	13.70	-4.09	3.21	-1.27	.20	-9.40	1.22
Medium							
108.51	6.14	8.03	2.27	3.54	.00	4.29	11.77
108.51	9.92	2.85	1.74	1.64	.10	-0.01	5.72
108.51	13.70	-2.33	2.43	-0.96	.34	-6.34	1.69
High							
120.76	6.14	3.36	2.93	1.15	.25	-1.47	8.20
120.76	9.92	1.40	2.35	0.60	.55	-2.48	5.29
120.76	13.70	-0.56	3.36	-0.17	.87	-6.10	4.98

*Note.* CI = confidence interval; LL = lower limit; UL = upper limit

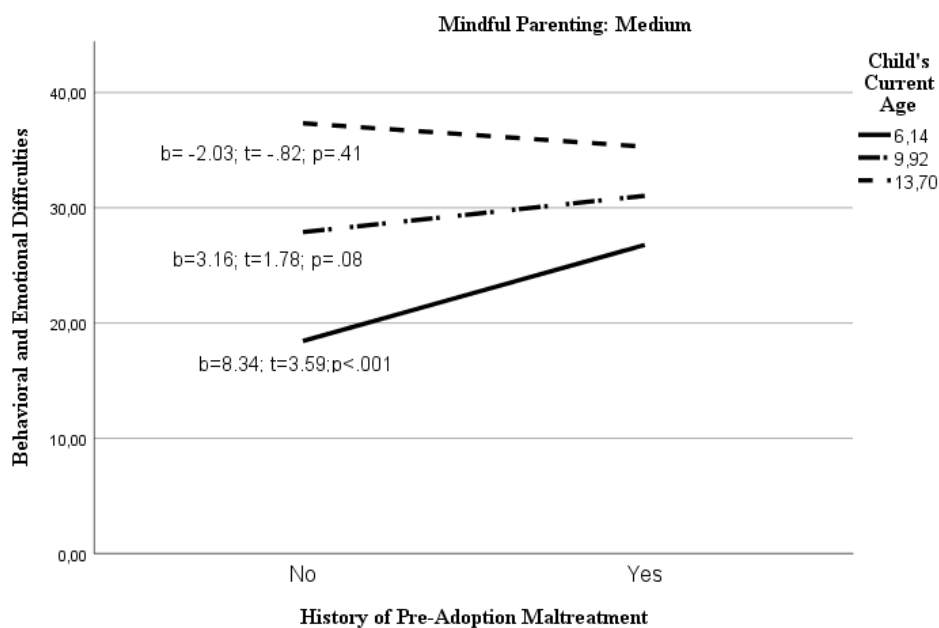
**Figure 2**

*Interaction Between History of Pre-Adoption 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)*



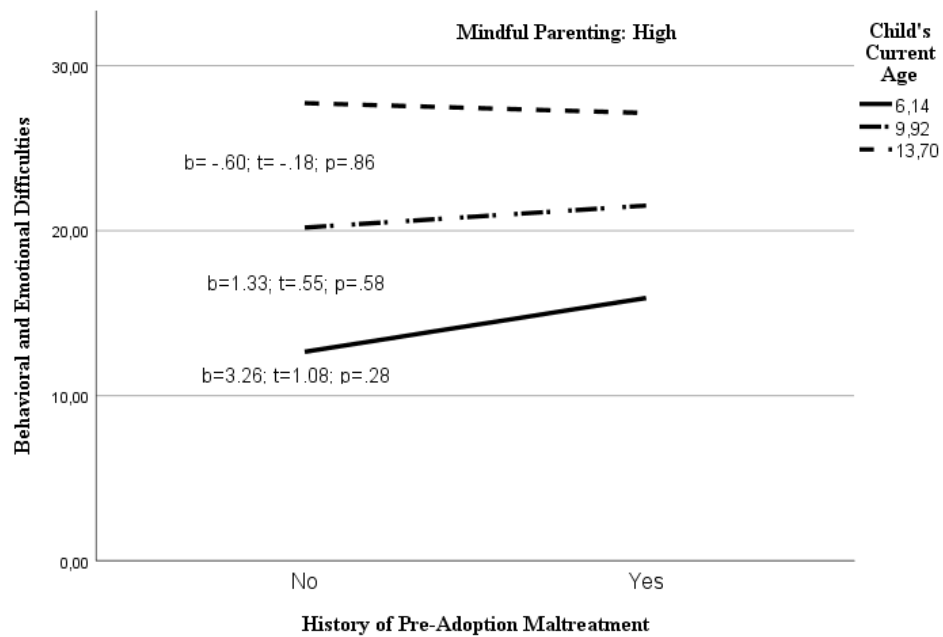
**Figure 3**

*Interaction Between History of Pre-Adoption 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)*



**Figure 4**

*Interaction Between History of Pre-Adoption Maltreatment, Mindful Parenting, and Child's Current Age When Explaining Child's Behavioral and Emotional Difficulties Relationship: High Mindful Parenting Levels ( $M - 1SD = 120.76$ )*



## Discussion

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The main goal of this study was to explore the association between pre-adoption maltreatment and post-adoption child emotional and behavioral difficulties (first aim) while exploring the potential buffering role of adopters' mindful parenting on this association (second aim). In addition to this, it was sought to understand the likely role of key variables that could interfere with the aforementioned buffering effect, such as the child's current age, the time passed since the adoptive placement, and the parent's sex (third aim). Our results supported the associations hypothesized for the first aim by demonstrating that children who suffered from pre-adoption maltreatment – and, among them, those who experienced more diverse types of maltreatment – seem to be more prone to develop emotional and behavioral problems after adoption, 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 explicative role on adoptees' emotional and behavioral difficulties, as well as a buffering role in the association between pre-adoption maltreatment and adoptees' emotional and behavioral difficulties under certain circumstances (second aim). Our results also suggest that the association between pre-adoption maltreatment and adoptees' emotional and behavioral difficulties could only be attenuated through adopters' mindful parenting practices up to the child's age of 8. Detailed study findings and their implications for future research and practice are discussed next.

In relation to the first study's purpose, i.e., to explore the association between pre-adoption maltreatment and child behavioral and emotional difficulties, our results were in line with previous studies (e.g., Paine et al., 2020), as higher levels of child's emotional and behavioral difficulties were significantly explained by the pre-adoption adversity expressed through the history of maltreatment and a higher number of different types of maltreatment suffered. Moreover, they add to previous research evidence regarding the independent contribution of these variables for adoptees' adjustment, as their explicative role occurred even when accounting for a wide range of diverse covariables.

Also, according to previous research, adoptees' emotional and behavioral difficulties were additionally explained by the presence of child's intellectual or physical disability (Raaska et al., 2011), a higher number of children adopted at the same time (Meakings et al., 2017), lower levels of mindful parenting (Medeiros et al., 2016) and a higher child's current age (Verhoeven et al., 2012). Considering just the adopted children experiencing at least one type of

maltreatment, higher levels of child's emotional and behavioral difficulties were also significantly explained by less amount of time passed since adoptive placement, but not anymore explained by a greater number of children adopted at the same time. Since literature concerning adoptees' maltreatment, namely 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 child's emotional and behavioral difficulties and these variables in existing studies. For example, the association among adoptees' emotional and behavioral difficulties and the presence of child's intellectual or physical disability has been substantiated by Raaska et al. (2011), which evidences that adoptees had more frequently and more severe learning difficulties in relation to their non-adopted peers. In relation to pre-adoption adversity, there are reports about the harmful impact of adverse childhood experiences on adopted children's internalizing and externalizing outcomes throughout time (Anthony et al., 2019; Paine et al., 2020), while simultaneously depicting maltreatment's cumulative nature (Crea et al., 2018). Conversely, to our knowledge, the relation with the outcome and higher number of children adopted at the same time is not 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 existing literature as longer time passed since the adoptive placement has been associated with child's positive outcomes (Soares et al., 2019; Jiménez-Etcheverría & Palacios, 2020).

Our study also adds to previous literature some insights regarding the role played by the Covid-19 pandemic in adopted children's emotional and behavioral difficulties. Although this was not an intentional aim of the present study, as sample collection occurred during the Covid-19 pandemic and several Covid-19 related variables were likely to be associated with our study outcome (e.g. Liang et al., 2021), we also controlled for the perceived impact of Covid-19 on parent's own life and child's life concluding that higher levels of child's emotional and behavioral difficulties were also significantly explained by a negative perception of Covid-19 in parents' and child's lives. Additionally, it is of importance to point out that the presence of this variable in the models did not change the previously reported associations with the study outcome. Studies regarding these specific associations are very limited since they do not concern the specific adopted children population (e.g., Liang et al., 2021). However, we can conclude from that literature that Covid-19 may had a significant impact on both child's and parents' well-being, through an impairment of functioning of the surrounding environment and

subsequent rearrangement of lifestyle and interaction patterns, besides a likely increase in negative emotions (Spinelli et al., 2021). This could in turn have contributed to the establishment of a negative perception towards Covid-19, although further research is needed to better explain these associations.

Regarding the second aim of our study, the results of the simple moderation analyses regarding the interactions between history of pre-adoption maltreatment or number of different types of maltreatment suffered and mindful parenting when explaining child's emotional and behavioral difficulties were not significant. This suggests that mindful parenting practices in the adoptive family did not moderate the relation between history of pre-adoption maltreatment or number of different types of maltreatment and children's behavioral and emotional difficulties under indiscriminate conditions. The role of mindful parenting on the study outcome remained only a direct one, with higher levels of mindful parenting explaining lower levels of child behavioral and emotional difficulties, even in the presence of all the other study and co-variables.

However, our moderated moderation results supported a significant and positive interaction between history of pre-adoption maltreatment, mindful parenting, and child's current age when explaining the study outcome. This implies that an earlier child's current age was a necessary condition under which mindful parenting appeared to act as a buffer against the role of pre-adoption maltreatment on child's emotional and behavioral difficulties. Our results establish that mindful parenting can have this buffer effect until the approximate child's age of 8, and as the child's age increases, the potential buffer effect of mindful parenting on the association between history of pre-adoption maltreatment and the child's emotional and behavioral difficulties decreases. These findings are in accordance with the effect that children's developmental stages can have on mindful parenting and its outcomes, as observed by Duncan et al. (2009). Also, these findings were analogous to Verhoeven et al. (2012) results, which discovered a considerable contribution of children's age, more specifically elementary school-aged children, in the association with parenting practices. The earlier the child's age the more likely it is to build a positive attachment relationship with adoptive parents (e.g., Van den Dries et al., 2009). Thus, it seems of crucial relevance to develop a well-timed positive parental involvement, in earlier child's ages, as developmental abilities (e.g., neuroplasticity) are still evolving (Nelson et al., 2011). It is important to note that the interaction between mindful parenting and child's current age was only significant in relation to the total sample and was not found to be significant in children who suffered from at least one type of maltreatment. A

possible explanation for this is that these children could present more severe difficulties due to a more harmful history of pre-adoption maltreatment (Finkelhor et al., 2011), that dampen the potential buffer effect that mindful parenting can exert, even at earlier ages. Future research is needed to better explore this topic.

In sum, in our study, the explicative role of previous adversity on child's emotional and behavioral difficulties was found both considering the history of pre-adoption maltreatment and the number of different types of maltreatment suffered, even when accounting for a wide range of diverse covariables. On the other hand, mindful parenting revealed a significant direct explicative role on the study's outcome in the presence of all the other variables, as well as a buffering role on the association between history of pre-adoption maltreatment and child's difficulties up to the child's age of 8. These findings are in accordance with previous studies that observed the predicting and repairing role of child-centered parenting and positive parenting practices on adoptees (Kriebel & Wentzel, 2011; Han et al., 2021). The negative association founded between child's emotional and behavioral difficulties and mindful parenting has been previously described in literature, although in an insufficient manner. Even so, research shows that higher levels of mindful parenting are related with child's welfare (Medeiros et al., 2016) and that mindful parenting might help mitigate behavioral problems in youth (Coatsworth et al., 2018). Lastly, by discovering a significant association between levels of child's emotional and behavioral difficulties and various covariables of different domains (e.g., child's intellectual or physical disability; number of children adopted at the same time) we could improve our insight regarding the complexity that is allocated to the adoption field. 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 (i.e., adoptees' characteristics). Nonetheless, few investigations exist concerning these topics and additional information is needed to better understand the underlying processes of these associations.

### **Limitations and Strengths**

As in all investigation, the present study is not without limitations. Firstly, we can point out its cross-sectional nature which does not allow to an establishment of cause and effect, as bidirectional associations could exist among the studied variables. For example, as observed, higher mindful parenting levels could contribute to lessened children's behavioral and emotional difficulties, nevertheless greater children's difficulties could also hinder the

application of mindfulness parenting practices (e.g., Gurney-Smith et al., 2017). The fields of both adoption and mindful parenting would benefit from longitudinal data. Another limitation is the sample size which, in relation to the wide variability of examined variables, may not be sufficient to allow final conclusions about the explored associations. Additionally, the data was entirely obtained online which could mean that people who found about and took part in this investigation might have an easier access to internet and be more able to use it; it is also expected that they may be more invested in the researched subject in relation to common population who do not get as involved in these topics. In line with the latter, is the fact that the generalizability of the current investigation is limited by sample characteristics (e.g., high levels of college education), and a more diverse sample would improve the generalizability of results. Also, all measures are based on parents' self-reports (e.g., pre-adoption maltreatment and the child behavioral and emotional difficulties are described by adopters) meaning they are not a precise measure, as they depend on adopters' knowledge and perceptions. Future studies could benefit from including additional assessment methods in order to provide a more detailed and comprehensive understanding of study variables. Finally, the fact that the data collection was performed during the Covid-19 pandemic might influence some results, as there are some variables that generally were not considered in past adoption and parenting studies (e.g., negative perception of the impact of Covid-19) and as such could influence the interpretation and extrapolation of findings outside the pandemic context.

Besides the aforementioned limitations, this study showed several conceptual and methodological strengths such as a wide range of co-variables of several domains, which allowed us to better understand characteristics concerning adoptees and adopters, the context within the adoption setting and the associations found among these variables and study variables. The conceptualization of pre-adoption maltreatment into two forms (i.e., history of maltreatment and number of different types of maltreatment suffered) also allowed a more informed interpretation of results. In relation to the role of mindful parenting, this research showed an innovative design, not only considering its possible direct impact but also exploring its potential buffering effect. Moreover, besides a simple moderation analysis we conducted a moderated moderation thus including potential secondary moderators that might help explaining the buffer effect of mindful parenting practices. Namely, the inclusion of children of different developmental stages was performed in a way that can provide the researcher with an ample view of how different ages interacted with the study variables. Lastly, this study complements the research on both adoptive and mindful parenting practices - the latter a



relatively new field - and emphasizes the role that precocious intervention could have on the effect of previous adversity on child adjustment. So, this study contributed to lessen some gaps in the previous literature, or at least help to better understand them, while it informed future research and practice.

### **Practical Implications for Practice and Future Research**

Pre-adoption adversity, specifically child maltreatment, is known to make adopted children more susceptible to developing adjustment problems (Juffer & van IJzendoorn, 2005; Bencuya, 2013), namely post-adoption emotional and behavioral problems. However, there is still a gap in literature that concerns the specific association between pre-adoption adversity and its relationship with adoptees' adjustment (Anthony et al., 2019) and few studies have analyzed the potential buffering role of adoptive parenting on this association, while none deemed mindful parenting (Finet et al., 2020). The present research provides useful comprehension of the several variables associated with child behavioral and emotional difficulties and the conditions underlying these associations. Moreover, this study suggests a potential direct explicative role of mindful parenting on adoptees' adjustment, and also its buffer effect on the relationship between pre-adoption adversity and child emotional and behavioral difficulties. These results emphasize the importance of focusing post-adoption intervention on more attentive and child-centered parental practices (Duncan et al., 2009; Kriebel & Wentzel, 2011) that can positively impact this association. Even so, given the cross-sectional nature of our study, as it is not possible to determine the influence/effect of mindful parenting, it would be pertinent for upcoming studies to evaluate the conditions under which this occurs, namely in terms of child's developmental stage, time passed since placement and parents' sex. Within our study's scope, an earlier child's age particularly seems to be a key variable that may allow the mitigation of the relationship between pre-adoption adversity and child difficulties through mindful parenting practices. These findings pose valuable practical information to the adoption field, as it contributes to professionals' insight that even though age does not necessarily determine adoptees' development (Pace et al., 2019), earlier intervention may be beneficial, as the buffer effect of mindful parenting only seems to operate among earlier child's ages. Specifically, mindful parenting appears to have this buffer effect until the approximate child's age of 8, which decreases as the child's age increases. Once again this is informative as it presents a specific developmental stage under which mindful parenting practices seem to be more efficient and informs about a specific period that is suitable for interventions. Future research could look into the role that adoptees' earlier ages (i.e.,

developmental stage) can have on their relationship with adopters within the context of mindful parenting practices, and also provide a supplementary exploration of the conditions and mechanisms under and through which mindful parenting exerts its effects. Namely, our results did not present differences concerning the role of mindful parenting among mothers and fathers, however these variations emerged in some studies (e.g., Medeiros et al., 2016). As such, if these disparities exist or not should be further examined, and most importantly, interventions should be tailored accordingly, as parents may benefit from a specific approach according to their characteristics (McKee et al., 2018).

Adding to the topic of future research, as stated throughout this study, there are other topics that could be further explored. For instance, it would be pertinent to assess the role that children's pre-adoption adversity poses in the establishment of relationships within the adoptive family context and specifically, how a higher number of children adopted at the same time could influence this relation. Also, since the association between the outcome and time passed since placement was not found for previous history of maltreatment, we can only posit that reduced time since placement is related to more emotional and behavioral difficulties if an adopted child has suffered from more than one type of maltreatment. However further research is needed to inform about the role cumulative maltreatment has on time since placement, and also to clarify the remainder of the findings.

Concluding, despite increased research concerning mindful parenting practices, literature has not fully grasped this concept within the adoption field. Our study is the first of our knowledge providing some understanding within these fields by exploring the positive role that mindful parenting practices could have in adopted children who suffered from pre-adoption maltreatment, namely in its cumulative form. Thus, its findings may be valuable when planning future research and interventions with this population, as they explore important and poorly studied topics in related fields.

## **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.

## **Institutional Framework**

The present dissertation was developed within the strategic project of the Center for Research in Neuropsychology and Cognitive-Behavioral Intervention (CINEICC) (UIDB/00730/2020). This study was conducted as a part of a larger project entitled "A mindfulness approach to adoptive parents' psychological and parenting functioning: Comprehensive analysis and evaluation of a post-adoption psychological intervention", supported by Scientific Employment Stimulus – 2017 (grant number: CEECIND/02463/2017).

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