

Abstract

Child abuse is prevalent worldwide, with most of the burden in developing countries. To reduce and prevent child abuse occurrence, many efforts are directed towards reducing maladaptive parental behaviors (MPB), a predictor of parents' risk of engaging in child abusive behaviors. MPBs have been associated to child (e.g., behavioral difficulties) and parent characteristics (e.g., parenting stress and parental cognitions), although little research tested for mediational pathways. This study aimed to test the pathways through which child and parent characteristics are linked to MPB. Consistent with the Social information processing model of parenting, we hypothesized that child behavioral difficulties would exert an indirect influence on MPB through parenting stress, and that parenting stress will exert a direct and indirect effect on MPB through parental cognitions (i.e., expectations, attitudes and attributions). This study used data from 243 mothers of children aged between two and nine years old in Romania. Two-stage structural equation modeling was employed to test the hypothesized model. Results support the role of child behavior, parenting stress, and parental cognitions in predicting MPB ($R^2=.69$). Significant indirect effects were found from child behavior to MPB via parenting stress and parental cognitions. Direct effects from parenting stress and parental cognitions to MPB were significant. Findings show that parenting stress and parental cognitions are important mechanisms through which child behavioral difficulties influence maladaptive parental behavior, underscoring the need to focus on these mechanisms when assessing or intervening with families at risk for child abuse.

Keywords: social information processing, parental cognitions, parenting stress, child adjustment difficulties, parental behavior, child abuse risk

**Linking Child Adjustment Difficulties with Mother`s Maladaptive Parental
Behavior: The Mediating Roles of Parental Cognitions and Parenting Stress**

Although child abuse remains a pressing global problem, it is more prevalent in developing countries (Hillis et al., 2016). Different forms of child abuse have been recognized, such as physical, emotional and sexual abuse, as well as neglect (Miller-Perrin & Perrin, 2013). All forms of child abuse are associated with deleterious consequences for child development including more frequent internalizing and externalizing problems (Pace et al., 2019), post-traumatic stress disorder symptoms, and school dropout (Lansford et al., 2015). Child abuse has also been recognized as a major public health concern with long-term cost and service implications for welfare, health and justice systems (Fang et al., 2012).

Given the widespread individual and societal impact of child abuse, ending its occurrence has become a worldwide priority (United Nations, 2015). Since 2016, Romania has joined the Global Partnership to End Violence Against Children, making a commitment to strengthen legislative frameworks and enhance national capacity to prevent and respond to acts of violence against children (End Violence Against Children, 2023). However, little has been achieved so far, as rates of officially reported cases of child abuse in Romania remained virtually unchanged in the last four years (ANPDCA, 2020; ANPDCA, 2023).

One way to alleviate child abuse is through reducing parental risk factors for committing child abuse, like maladaptive parental behaviors (MPB). There is robust evidence that use of any maladaptive form of discipline (e.g., use of mild physical punishment such as smacking) is a potent predictor of parents engaging in physical child abuse (Gershoff & Grogan-Kaylor, 2016; Ateah & Durrant, 2005). Accordingly, parent self-report of their MPB is considered an indicator of parents' risk of engaging in child abusive behaviors. Consequently, many researchers suggest

that physical child abuse should be conceptualized on a continuum where any form of physical punishment (e.g., spanking) can escalate to become abusive (Gershoff, 2010; Rodriguez, 2010a). Thus, parents who exhibit MPBs such as physical punishment are placed at increased risk of committing child abuse. Such conceptualizations have been important in the prevention of child abuse, with 65 countries around the world banning all forms of physical punishment of children (End Violence Against Children, 2023). Thus, due to their link to parental risk of engaging in physical child abuse, maladaptive parental behaviors will be the main outcome of the present study. The present research aims at exploring child and parent related variables which predict reported use of maladaptive parental behaviors from mothers who were recruited to participate in a parenting program.

Several theoretical frameworks have been advanced to understand how various risk factors influence parental behavior and increase risk of parents engaging in physical child abuse. Ecological models of child abuse (Bronfenbrenner, 1979) argue that characteristics of the individual, family, community, and culture in which individuals are embedded can all increase the likelihood of MPB and that such parental behaviors are more likely in families characterized by multiple risk factors (Patwardhan et al., 2017). However, ecological frameworks acknowledge that factors related to the parent (e.g., characteristics of the parent) are more proximal to parental behavior compared to those independent of the parent (e.g., characteristic of the child), a view further expanded by cognitive-behavioral and social cognitive frameworks (Azar & Rohrbeck, 1986; Milner, 1993). These frameworks bring into the spotlight personal characteristics of parents, such as parental cognitive processes, which influence their parental behaviors and increase the likelihood of using physical punishment.

According to cognitive-behavioral models, occurrence of maladaptive parental behavior (MPB) is seen as linked to challenges with parenting, where parent social cognitive capacities are the foundation underlying MPB. Milner's social information processing (SIP) model (Milner, 1993, 2003) entails four stages in which parental cognitive processes shape their parental behavior. Antecedent to entering these stages, parents bring preexisting cognitive schemas into their role as parents (e.g., expectations and beliefs regarding children and child-rearing). These schemas represent knowledge structures (e.g., spanking is an effective discipline technique) acquired previous to the parenting experience, and influence subsequent processing of the information. The four cognitive stages begin when a discipline situation emerges. During the first stage, parents perceive the situation taking place. In the second stage parents interpret the event, whereas in the third stage they proceed to consider alternative information regarding the situation as well as an appropriate response. In the last cognitive-behavioral stage parents implement the selected response and monitor its implementation. The SIP model emphasizes that parenting requires several cognitive capacities to properly respond to discipline situations, including appropriate parental expectations and beliefs regarding children and child-rearing, the capacity to correctly interpret the function of children's behaviors, as well as parenting skills. Disturbances or biases in any of these areas increase the **likelihood of using MPB** in response to the discipline encounter (Milner, 1993, 2003).

The general parenting literature supports the SIP's model utility to understanding maladaptive parental behavior. Endorsing use of physical punishment as means to discipline children has been found to directly predict their use (Ateah & Durrant, 2005; Camilo et al., 2020; Walker et al., 2021, Authors, 2022). Parents who exhibit more MPBs also endorse more unrealistic expectations for their children compared to those that do not enact such behaviors

(Haskett et al., 2003), although findings in this area are inconsistent (Azar et al., 2016).

Regarding the interpretation of children`s misbehaviors, research supports that parents who respond to discipline situations by using MPBs are more likely to view child misbehaviors as intentional or blameworthy (Rabbitt & Rodriguez, 2019).

Apart from setting parental cognitive processes as the foundation underlying maladaptive parental behaviors, the SIP model also specifies that parental cognitive processing of information is influenced by other factors (Milner, 2003), such as parenting stress and child characteristics (e.g., behavioral difficulties). There is evidence that child characteristics, parenting stress and cognitions are interconnected and are each independently associated with MPB, albeit the concrete pathways through which these associations occur are unknown. The majority of empirical studies examining these associations do not simultaneously consider all risk factors, or come from research carried out with parents living in highly developed countries. Studying mediational pathways from child behavior, parenting stress and cognitions to MPB may be especially important in developing countries, where child abuse is more prevalent (Hillis et al., 2016). Additionally, macro level variables such as access to health services, economic challenges, unemployment or childcare availability disproportionately affect families living in developing countries (World Bank, 2022). Facing more challenging life situations has been associated with increased levels of parenting stress (Ho et al., 2022; Martins et al., 2023). There is also evidence that parents in developing countries show more apparent social information processing biases such as considering use of physical punishment as normative (Lansford & Deater-Deckard, 2012).

Still, evidence-based parenting programs are largely unavailable in these countries and the majority of child care lies with the mothers (Mejia et al., 2012). In Romania, parenting

programs are results of local or clearly circumscribed non-governmental organizations initiatives. Most of the parental assistance lacks evidence and is tailored to address specific community needs or challenges related to parenting (Cojocaru & Cojocaru, 2011). Existing parenting programs are not widely accessible or available to all parents, but rather to those indicated (e.g., referred to child protection services) or selected (e.g., high risk parents belonging to a community). Despite existence of evidence-based parenting programs, as well as their transportability and effectiveness in reducing MPBs for parents living in developing countries (Gardner et al., 2016), little attempts have been made to scale them up across the country (Evidence for Better Lives Consortium, 2019). The need for a national wide strategy that takes into consideration parental education as means to reduce occurrence of MPBs and prevent child abuse has been acknowledged by national authorities (Preda & Ovedenie, 2011), although its implementation failed. Thus, testing how several risk factors operate to influence MPBs may help inform prevention policies to reduce their occurrence and prevent further escalation to child abuse.

Parenting Stress and Maladaptive Parental Behavior

One particularly relevant source of stress in the study of parental behavior is the stress that parents experience due to challenging child behaviors or in relation to the parenting tasks (i.e., parenting stress). Parenting stress arises when parents perceive the demandingness of the parenting role to exceed their resources in meeting those demands (Deater-Deckard, 1998). Parenting stress is a risk factor for child abuse occurrence and a predictor of MPB (Miragoli et al., 2018; Rodriguez & Richardson, 2007). Furthermore, parenting stress has been associated with processing of social information by parents, such that those who are higher on measures of stress attribute more hostile intent to children`s misbehaviors (Beckerman et al., 2019), hold

more unrealistic child-related expectations (Haskett et al., 2003), and show more endorsement of the use of physical punishment (Pinderhughes et al., 2000). There is also limited evidence for a mediating pathway from parenting stress to MPB through parental cognitions. Haskett and colleagues (2003) found that parents with elevated stress make more hostile attributions to children's misbehaviors and endorse more unrealistic expectations for their children. Beckerman and colleagues, (2017, 2018) also found that attributions of hostile intent are the underlying mechanism linking parenting stress to MPB.

Child Characteristics and Maladaptive Parental Behavior

Some child characteristics, such as exhibiting externalizing behavioral difficulties (e.g., defiance, impulsivity and aggression), as well as internalizing difficulties (e.g., withdrawn behaviors, depression and sadness) may increase children's risk of being subjected to maladaptive parental behaviors (Lansford et al., 2015; Stith et al., 2009). Mothers' perception of their children as exhibiting behavioral difficulties has been associated with displaying MPBs (McElroy & Rodriguez, 2008) and there is evidence that parents substantiated for child abuse hold generally negative views of their children's behaviors (Haskett et al., 2003). It is hypothesized that parents of children with externalizing or internalizing difficulties face more stressors, which can affect their ability to appropriately manage misbehaviors. Children's externalizing difficulties, as measured by parent reports (Williford et al., 2007) and by independent ratings of parents and teachers (Krahé et al., 2015) have been associated with more parenting stress, an association which remains stable across the preschool period. There is also evidence that parenting stress mediates the relation between child externalizing behaviors and MPBs (Miragoli et al., 2018), although parental cognitions were not included in that study.

Children's behavioral difficulties have also been linked to more social information processing biases. Parents of children exhibiting behavioral difficulties are more likely to hold unrealistic expectations for their children's behaviors (McElroy & Rodriguez, 2008), to endorse use of physical punishment (Coley et al., 2014) and to interpret misbehaviors as hostile (Haskett et al., 2003).

Purpose of the Present Study

The general parenting literature provides evidence that child characteristics, parenting stress, cognitions, and maladaptive parental behaviors are interconnected. There is limited evidence for the potential role of parental cognitions as an underlying mechanism between parenting stress and behavior (Beckerman et al., 2018, 2019), and for the role of parenting stress (Miragoli et al., 2018) and cognitions (McElroy & Rodriguez, 2008) in the relation between child behavior and MPB. However, to our knowledge, no study to date has simultaneously tested the role of parenting stress and cognitions as potential mechanisms linking children's behavioral difficulties to MPB. Adding risk factors to models trying to predict MPB may alter previous findings. Also, most findings are reported for parents living in highly developed countries, which may show different patterns of social information processing biases and face different challenges from parents living in developing countries (Lansford & Deater-Deckard, 2012; World Bank, 2022). Thus, our aim was to test for the role of child behavior, parenting stress and cognitions in their association to maladaptive maternal behavior as well as the pathways through which they are linked to this outcome. Consistent with theoretical assumptions (Bronfenbrenner, 1979; Milner, 2003) and previous evidence, our first hypothesis was that child behavioral adjustment (e.g., more externalizing and internalizing difficulties) will predict more MPBs and that this relation will be mediated by parenting stress and cognitions. Thus, we expect that risk factors

unrelated to the mother (e.g., characteristics of the child) are more distal to parental behavior, hence expected to exert an indirect influence on maternal behavior. Our second hypothesis was that increased levels of parenting stress will predict more MPBs and that this relation will be mediated by parental cognitions (e.g., more biased attitudes, expectations and attributions) which, due to being related to the mother, are hypothesized to be the risk factors most proximal to parental behavior.

Method

Participants

Participants were parents of children between the age of two and nine living in Romania ($N = 249$; for the recruitment protocol see Authors, 2021). Due to low number of fathers in the sample ($N=6$), they were excluded from the present study. Potential participants were either referred to the study by school counsellors, teachers, educators, community workers or recruited through aid of advertorial materials displayed online and in relevant sites (e.g., schools). Participants were recruited to participate in an intervention that aimed at improving parenting and impact positively on child mental health, and parents had to report at least subclinical levels of child behavior problems as measured with the Child and Adolescent Behavior Inventory (Cianchetti et al., 2013). Children with behavioral difficulties exhibit behaviors which result in more frequent maladaptive parental behaviors, which can exacerbate risk of parents engaging in child abuse (Wolfe, 1999). This sample is therefore well suited to examine the present research questions. Demographic information is presented in Table 1.

//insert Table 1//

Procedure

This study used baseline data (N=243) collected between January and May 2021 as part of the larger study. Due to restrictions imposed by the COVID-19 pandemic, informed consent procedures were conducted verbally via phone interview by data assessors who filled in each item to which parents gave their verbal agreement. After giving their informed consent, parents were invited to answer the interview questions. All procedures were approved by the Ethical Board of the University of Klagenfurt (Approval Number: 2018-021) and Babes-Bolyai University from Romania (Approval Number: 3533/05.03.2018).

Measures

Maladaptive parental behavior

Mothers' maladaptive parental behavior was assessed with the Overreactivity subscale from the Parenting Scale (PS; Arnold et al., 1993). Based on research suggesting the need to represent all child related aggression on a continuum where physical punishment transitions to become abusive (Rodriguez & Richardson, 2007), we assessed mothers' enactment of maladaptive parental behaviors as a proxy to risk for engaging in physical child abuse. The overreactivity subscale from the PS is a measure of authoritarian parental behaviors such as harsh, angry and coercive parenting. Such maladaptive parental behaviors are conceptually related to risk of child abuse (Haskett et al., 1995; Rodriguez, 2010b). The PS has been frequently used to assess physical and emotional violence against children (Backhaus et al., 2023).

Items from the PS present participants with conflict situations and asks them to indicate their parenting behavior on a 7-point Likert scale (e.g., When my child misbehaves, I spank, slap, grab or hit my child... 1 = never or rarely; 7 = most of the time). Higher scores reflect higher levels of maladaptive parental behavior. Due to low factor loadings ($< .30$), three items were

removed from the subscale (item 9, 25 and 28). Internal consistency for the seven remaining items was good ($\alpha=.70$).

Parental Cognitions

Parental cognitions were assessed with three observed variables: unrealistic parental expectations, attitudes endorsing physical punishment and attributions of hostility.

Unrealistic parental expectations were assessed with the Parental Expectations Scale (PES; Authors, 2023). Parents were asked to rate the extent to which they agree or disagree with 10 statements related to child prosocial behavior, autonomy, and compliance with parental requests (e.g., A child aged 2–3 should wait his /her turn during games). Items were scored on a categorical scale with two choices (yes/no) and the total score was computed by summing “yes” responses. Higher scores indicate more unrealistic parental expectations. Internal consistency of the scale was good (McDonald’s ordinal $\omega = .70$).

Parental attributions were assessed with the attribution subscale of the Plotkin Child Vignettes (PCV; Plotkin, 1983). Parents were presented with 18 scenes (e.g., “Soon after you place your 2-year-old in the next room you hear her/him crying”) and asked to judge whether the child intentionally misbehaved on a 9-point Likert scale (1 = My child did not mean to annoy me at all, 9 = The only reason my child did this was to annoy me). Higher scores indicate more hostile attributions. Internal consistency was high ($\alpha=.84$).

Parental endorsement of physical punishment was assessed with the Attitudes Toward Spanking questionnaire (ATS; Holden et al., 1995). Participants were asked to rate the extent to which they agree or disagree with 10 statements (e.g., “Spanking a child is a normal part of my parenting”) on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Higher scores indicated more endorsement for use of physical punishment. Two items (item 3 and 7) were

removed due to low factor loading ($< .20$). Internal consistency for the remaining items was good ($\alpha=.70$).

Parenting Stress

Parenting stress was assessed using the Parental Stress Scale (Berry & Jones, 1995), measuring the rewarding and challenging aspects of parenting. The 18 items present parents with statements (e.g., having children has been a financial burden) to which they are asked to respond on a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree). In the present study, the scale yielded a bifactorial structure, with the first factor reflecting parental lack of rewards (items 3, 16, 11, 12 and 15) and the second factor parental stressors (items 1, 5, 6, 8, 14, 17, 18). Higher scores indicate more parenting stress. Two items (2 and 4) were removed due to low factor loading ($< .30$), three items due to cross-loading (7, 10 and 16), and one item (9) was removed due to demonstrating low variability and extreme asymmetry (skewness > 10). Previous results also indicate that the number of valid PSS items vary across studies from 12 to 16 (with frequent removal of items 2 and 4) (Berry & Jones, 1995; Nielsen et al., 2020). Internal consistency of the remaining items was moderate to high, with $\alpha=.71$ for the first factor and $\alpha=.82$ for the second factor.

Child Characteristics

Child behavioral difficulties were assessed with the parent-report versions of The Child Behavior Checklist (Achenbach, 2011) for children aged 1^{1/2}–5 and 6–18. Parents were asked to rate the occurrence of several children behaviors (e.g., easily frustrated, argues a lot; nervous or tense; can't sit still; demands a lot of attention, etc.) in the past month, on a 3-point Likert scale. Higher scores are indicative of more behavior problems in the child. For the present study, the externalizing and internalizing subscales were included as the observed variables. The CBCL

has been previously used on Romanian population and showed good psychometric properties, with high test-retest reliability and internal consistency (Ștefan & Miclea, 2017; Susa-Erdogan et al., 2022). In our sample, internal consistency of the subscales was high for the old and young versions, with $\alpha=.84$ and $\alpha=.87$ for the externalizing subscales and $\alpha=.82$ and $\alpha=.83$ for the internalizing subscales.

Data analysis

All analyses were conducted in Mplus version 8.3. Structural equation modelling, using maximum likelihood estimation was used to assess the relations among the variables included in the hypothesized model. Consistent with Anderson & Gerbing`s (1988) recommendations, the analysis was conducted in two stages. First, we used a confirmatory factor analysis framework to test the fit of the measurement model. Next, we computed the hypothesized structural model (Figure 1). In the hypothesized model, we assumed an indirect effect of child behavioral adjustment (e.g., internalizing and externalizing problems) on MPB (i.e., use of overreactive, harsh discipline strategies) through parenting stress and biased cognitive processing of child related information (e.g., attitudes endorsing use of physical punishment, unrealistic parental expectations, attributions of hostility). We assumed that the effect of parenting stress on MPB will be both direct and mediated by parental cognitive processing of information.

The hypothesized model was compared to two other models: the next-best-constrained and the next-best-unconstrained model. The next-best-constrained model had the indirect path from parenting stress to MPB (through parental cognitions) removed. Given evidence for a direct link between parenting stress and behavior (Miragoli et al., 2018), we wished to test our hypothesized model against a model where stress operates through a direct path only to influence maladaptive parental behavior. The next-best-unconstrained model contains all the paths

specified in the hypothesized model, plus an additional direct path from child behavior to MPB.

Based on research indicating that parents are more likely to engage in MPBs when children display difficult behaviors (McElroy & Rodriguez, 2008), we considered a direct path among these two constructs as relevant.

//insert Figure 1//

Model fit was evaluated with Tucker-Lewis Index (TLI) > .90, Comparative Fit Index (CFI) > .90, standardized root mean residuals (SRMR) < .08, and the root-mean square error of approximation (RMSEA) < .08. A χ^2 difference test was used to compare the models. When comparing the hypothesized model to the constrained model, a significant $\Delta\chi^2$ would indicate that the hypothesized model should be retained. When comparing the hypothesized model to the unconstrained model, a significant increase in χ^2 would indicate that the unconstrained model is an improvement and should be retained. Direct and indirect effects were computed to examine the mediational pathways. The significance of the indirect effects was evaluated using 95% bootstrap confidence intervals (CI) and were considered significant when CIs did not include zero. Moderation analyses were conducted using latent moderated structural equations method (Hayduk, 1996).

Results

Preliminary analysis

Preliminary analyses were conducted to assess the need to control for demographic differences in the models. We found no significant differences on parenting stress, cognitions, or MPB with respect to parental education, gender, marital status, or child gender ($p > .05$). Pearson correlations indicated no significant association of parent and child age with any of the study variables. Thus, demographic characteristics were not included as covariates in our model.

Structural Equation Modeling Results***Measurement Model***

The measurement model showed an adequate fit with the data: $\chi^2(71, N = 243) = 132.07, p < .001, CFI = .91, TLI = .88, RMSEA = .05, SRMR = .05$. All the observed variables were found to have significant factor loadings on the appropriate latent variable. Correlations among observed variables, factor loadings and standard error of measurement are presented in Table 2.

//insert Table 2//

Structural Models

The hypothesized model showed a good fit with the data, with $\chi^2(72, N = 243) = 133.16, p < .001, CFI = .91, TLI = .88, RMSEA = .05, SRMR = .05$. We compared this model to the next-best-constrained model in which we constrained to zero the indirect path linking the mediator (i.e., parental cognitions) to parental behavior. The constrained model gained one degree of freedom and was a slight improvement in model fit compared to the hypothesized model ($\Delta\chi^2(1) = .61, p > .05$; see Table 3). Although the fit between the hypothesized and constrained model is only slightly different, results indicate that adding the indirect path from parenting stress to maladaptive parental behavior is not associated with improvements in model

fit. Considering this, as well as the fact that the abovementioned indirect path was non-significant in the hypothesized model (see SuppInf, Table A1), we preferred the constrained model to the one hypothesized. Next, we compared the hypothesized model to the next-best-unconstrained model, in which a direct path from child behavior to maladaptive parental behavior was added. In this model, we lost one degree of freedom, while there was no significant improvement in model fit ($\Delta\chi^2(1) = 1.09, p > .10$). Also, the direct path from child behavior to maladaptive parental behavior was non-significant (see SuppInf, Table A2). Because our interest was to retain the most parsimonious model, we preferred and retained the constrained model, which is presented in Figure 2.

//insert Table 3//

Results for the retained (constrained) model

Results indicate that both parenting stress ($\beta=.21$) and cognitions ($\beta=.76$) contribute to the prediction of maladaptive parental behavior (Table 4). Parental cognitions ($\beta=.40$) and parenting stress ($\beta=.49$) are predicted by child behavioral difficulties. Child behavior, parenting stress and cognitions account for 69% of the variance in MPB ($R^2=.69$). Child behavior accounts for 16% of the variance in parental cognitions ($R^2=.16$) and for 24% of the variance in parenting stress ($R^2=.24$). A significant indirect effect of child behavior via parenting stress ($\beta=.10, p<.05$) and cognitions ($\beta=.30, p<.001$) was found on MPB. All direct and indirect effects were significant at 95% bootstrap CI.

Interaction terms were non-significant (see Table 4) for the moderating role of child age (preschool and school aged) in the relation among all study pathways.

//insert Figure 2//

//insert Table 4//

Discussion

Considering evidence that parental behavior is best predicted by multiple risk factors across different levels of influence, the purpose of the present study was to identify the contribution of child characteristics, parenting stress, and cognitions to the prediction of maladaptive parental behavior (MPB), an indicator of risk of parents engaging in child abuse. Furthermore, we aimed to test the mediational pathways through which these risk factors are associated to MPB in a sample of mothers of children aged two to nine years old and living in Romania.

Although the hypothesized model (Figure 1) showed a good fit with the data, results support a more constrained model (Figure 2), in which the mediating path from parenting stress to MPB via parental cognitions was constrained to zero. Thus, we found no support for our hypothesis that one way in which parenting stress influences mother's maladaptive parental behavior is through influencing cognitive processing of child-related information. The indirect effect of parenting stress on mother's maladaptive behavior via cognitions was non-significant in the hypothesized model (see SuppInf, Table A1), contrary to previous findings. Beckerman and colleagues (2017), found that parental attributions of hostility mediate the relation between parenting stress and MPB in a sample of mothers living in Netherlands. Haskett and colleagues (2003), in a sample of parents living in the United States, also found that parents with elevated stress make more processing errors such as attributing more hostile intent to children's misbehaviors and endorsing more unrealistic child related expectations. Difference in results may be attributable to contextual differences among samples. For instance, mothers in the present study come from a country with lower GDP and quality of life compared to other high-income countries (World Bank, 2020). It is thus possible that other sources of stress are more

relevant for the study of MPBs, such as socio-economical stress which has been found to compromise parenting for parents struggling with financial difficulties (Kotchick, 2002). However, our measure of parenting stress only assessed stress related to childcare and parenting tasks (e.g., caring for the child), ignoring all situational aspects which may contribute to parental stress. Parenting stress alone may not be sufficient to influence parental cognitive processing of child related information. For instance, Beckerman and colleagues (2019) found that parents make more hostile child related attributions only when under high situational stress. Presenting parents with stressors related to usual daily hassles (e.g., groceries shopping, remembering schedules) seems to increase their cognitive load and impact child related attributions. Thus, situational stress may have more impact on parent's cognitive processing of child related information compared to parenting stress, an idea which should be further explored.

The constrained model's results, which was retained, suggest that child related characteristics, parenting stress, and cognitions account for 69% of the variance in mother's MPB and add to our understanding of the pathways by which child behavior, parenting stress and cognitions may shape mothers' risk for engaging in child physical abuse. Our results are consistent with previous research suggesting that both parenting stress and cognitions contribute to the prediction of MPB. However, contrary to previous findings (Rodriguez & Richardson, 2007), our results indicate higher association among mother's cognitions and MPB and only a small effect of parenting stress on mother's MPB. Findings are consistent with social-cognitive models of child abuse emphasizing that cognitions may be more proximal to parenting compared to situational or child-related factors, thus exerting a larger effect on parental behaviors. Nevertheless, differences may be attributable to sample characteristics, since our study only included mothers, whilst Rodriguez & Richardson's (2007) study included both parents. Also,

children in our sample were comparatively younger. Some evidence suggests that parenting might be more challenging for parents of younger children and may require more parental resources, which could increase bias on how parents process child related information (Windham et al., 2004). However, our results indicate that child age does not moderate any of the direct or indirect effects of child behavior, parenting stress and cognitions on mothers' maladaptive parental behavior, supporting finding's generalizability to mothers regardless of children's age.

Regarding child characteristics, we found an indirect effect of child behavior problems on mother's MPB through parenting stress and cognitions. Specifically, child behavioral difficulties increase mother's parenting stress and interfere with their processing of social information, which in turn may increase their likelihood to engage in MPBs. Results are consistent with previous research that found a mediating link from child behavioral difficulties to MPB through parenting stress (Miragoli et al., 2018), although our results show only a small effect for this indirect path ($\beta=.10$) compared to the one reported in Miragoli's study ($\beta=1.52$ for mothers). However, Miragoli and colleagues (2018) found that only personal components of stress (e.g., reports of anger, anxiety and depression) rather than child related stressors mediate the relation between children externalizing behavior problems and MPB. These results question whether other components of stress (i.e., personal stress) are more relevant in the study of MPBs compared to stress specifically related to parenting tasks and to children (i.e., parenting stress).

On the other hand, Miragoli and colleagues (2018) did not simultaneously consider parental cognitions in their model. When adding the cognitive variables to the model, this may lead to a change in the strength of the pathways through which child risk factors operate to influence parental behavior, with larger effects for the path linking child characteristics to MPB via cognitions. This emphasizes the importance of parental cognitions in the prediction of MPB.

When parents perceive their children's behaviors as challenging they may rely more on pre-existing attitudes and expectations regarding children and child-rearing, and ignore the actual context when interpreting misbehaviors, which increases their propensity to enact maladaptive parental behaviors. There is evidence that cognitive processing of child related information is an automatic process, driven by the child's behavior (Bugental & Johnston, 2000). Previous research has shown that, when presented with mitigating information regarding children's misbehavior (i.e., situational information that lessens the child's responsibility for the negative outcome), parents with substantiated reports of abuse ignore such contextual information and maintain all attributions ascribed to the misbehavior (Irwin et al., 2014). Thus, our results are consistent with previous evidence that perceiving children as difficult or generally misbehaved may increase the likelihood of mothers enacting MPBs through automatic activation of pre-existing attitudes, unrealistic expectations and attributions regarding children's misbehaviors.

It is worth mentioning that a direct path between child behavioral difficulties and MPB was also previously documented, albeit parental cognitions were not assessed in that study (Miragoli et al., 2018). Although our retained model did not include the aforementioned direct path, the unconstrained model did. Yet, this model showed no improvement in model fit and the direct path from child behavior to mother's MPB was non-significant (see SuppInf, Table A2). Again, this may reflect the importance of adding cognitive risk factors to models predicting MPBs, since this may contribute to our understanding of how several risk factors operate to influence their occurrence. Given the proximity of parental cognitions to parental behaviors, it is likely that adding cognitive variables intervenes in the pathway of influence of more distal factors (e.g., child behavior) on MPB.

Overall, our results suggest that the relation between child behavioral difficulties and mother's maladaptive parental behavior is not straightforward. Rather, the underlying mechanism through which children's behavioral difficulties influence mother's MPB and increases the likelihood that they will become abusive is through activation of parenting cognitive processes (i.e., activation of unrealistic expectations, attitudes and automatic attributional biases) and through increasing parenting stress (i.e., mothers' feelings that they lack rewards from parenting and that parenting children is stressful or demanding).

Implications for practice

Overall, our results indicate that parenting stress and cognitions are important dimensions which mediate the relation between child behavior and mother's maladaptive parental behavior, an indicator of the risk of mothers engaging in child physical abuse. Our findings reinforce the need for targeting these variables in future assessments and interventions aimed at preventing or reducing risk of child physical abuse.

Many parenting programs are based on social learning principles focused on teaching positive behavior management strategies, with less focus on parenting stress and parental cognitive processes (Scott & Dadds, 2009). Improving parenting skills is an effective core component of most evidence-based parenting programs (Leijten et al., 2022), although such parent trainings only yield small to moderate effects on parent and child outcomes (Chen & Chan, 2016; Lundahl et al., 2006). Based on the present study results, we assume that parenting programs may benefit from introducing strategies that target parental cognitions and parenting stress, especially considering evidence that both can interfere with parents' attendance and engagement with program activities, which are critical to program effectiveness (Mah & Johnston, 2008; Sanders et al., 2003). For instance, parents high on stress are more likely to miss

sessions (Calam et al, 2002) and to drop-out of parenting programs (Werba et al., 2006). Parents holding unrealistic expectations for children`s behaviors may believe that change must occur for the child, lowering their willingness to apply positive discipline strategies. Also, if parents believe that physical punishment is the best way to discourage misbehaviors, they may have low expectations regarding program usefulness, which may interfere with attendance and engagement (Chacko et al., 2016).

Thus, parenting prevention or intervention programs may benefit from incorporating specific strategies for reducing parenting stress, as well as cognitive restructuring and reattribution training (e.g., Azar & Wolfe, 2006) alongside more mainstream behavioral strategies. This would be especially important in developing countries, where social information processing biases are more apparent (Lansford & Deater-Deckard, 2012), and evidence-based parent training interventions are largely unavailable (Mejia et al., 2012). In Romania, available parent training programs are delivered as modules within larger programs aimed at offering support to families, by facilitators lacking formal training in parental education (Cojocaru et al., 2011). Specifically, we suggest parent training programs may benefit from teaching parents` self-regulatory strategies to increase self-efficacy or competence in their parenting role, which may reduce parenting stress. Of particular relevance for mothers of children with behavioral or emotional difficulties is self-efficacy related to managing child behaviors or distress (Cao et al., 2023), especially since they report low confidence in their ability to manage children`s emotions and behaviors (Jones & Prinz, 2005). Parenting programs that train parents to use self-management skills such as setting goals, self-monitoring progress, self-monitoring of child behaviors, reflecting upon assessing parent-child interactions, selecting specific parenting

strategies for use and to use self-rewards are more effective in increasing parent's self-efficacy compared to standard universal parenting programs (Sanders & Mazzucchelli, 2013).

Apart from strategies meant to reduce parenting stress, we also recommend that efforts should be made to target parental cognitions. Programs addressing unrealistic parental expectations and values related to children and child-rearing yield larger effects in reducing engagement in maladaptive parental behaviors compared to those where such components are absent (Gubbels et al., 2021). Targeting parental attributions along with parenting skills leads to larger effects on reducing parental use of physical punishment compared to standard programs focused on behavior management only (Whittingham et al., 2009). For instance, assisting parents in acquiring the skills to accurately read children's cues to distress and to counter misattributional processes (e.g., that the child is misbehaving intentional) has been shown to be more effective in reducing engagement in maladaptive parental behaviors compared to standard behavioral interventions (Bugental et al., 2010).

Limitations and Directions for Future Research

Since this is a cross-sectional study, all data were collected at the same timepoint and we cannot establish causality or the direction of the tested pathways (Maxwell et al., 2011). It is likely that enactment of MPBs may activate pre-existing attitudes (e.g., applying physical discipline is good for managing misbehaviors), unrealistic expectations (e.g., the child should have behaved otherwise because he or she can) and hostile attributions (e.g., the behavior was intentional) to justify the behavioral response to the situation. Consequently, this can lead to parents viewing their children as challenging. Furthermore, there is evidence that MPB and cognitions interact to predict child behavior problems over time (Lansford et al., 2018). A transactional relation was also found between parenting stress and child behavior problems

across early and middle childhood (Cherry et al., 2019), emphasizing the mutually escalating effect that these variables have over each other. Further research should gather data longitudinally to test for directionality of the pathways.

Second, one closely related variable to parenting stress, behavior and child behavioral adjustment is child temperament. Temperamental traits such as irritability and impulsivity are believed to be risk factors for externalizing problems, whilst fearfulness and inhibition for internalizing problems (Eisenberg et al., 2001). Behavioral difficulties and their temperamental underpinnings can result in several parenting challenges (e.g., embarrassment) which increase parenting stress and influence parental behavior (McQuillan & Bates, 2017). Thus, child temperament may have a direct influence on maladaptive parental behavior, or may shape parental behavior through influencing child behavioral adjustment and increasing parenting stress (Kiff et al., 2011). Since child temperament was not assessed in our study, further research should test for its role, along with children behavioral adjustment, in relation to maladaptive parental behavior.

Third, all participants in this study were mothers, which limits findings generalizability and interpretation, as well as our understanding of intervention needs for fathers at risk for child abuse. Previous research found different associations among parental cognitions and maladaptive parental behavior for fathers and mothers (Rodriguez & Wittig, 2019). Also, it has been suggested that mothers, but not fathers, displaying MPBs report high levels of distress (Perez-Albeniz & de Paul, 2004). Researchers must strive to develop methods to encourage fathers to participate in parenting research and intervention and test for gender differences in models predicting enactment of MPB. There is some recent evidence that parental cognitions are similarly important for fathers and mothers (Miller & Azar, 2019).

Fourth, we must acknowledge that all data were limited to parent-report, which may be subject to a social-desirability bias. Parents have a tendency to present themselves favorably when asked about their parenting practices (Paulhus, 2002). However, scores on self-report MPB in our sample are similar to those obtained in community samples of parents who completed the Parenting Scale using computer assisted technology (Jensen et al., 2021). Nevertheless, to overcome risk of bias, future research should employ multimethod or multi-informant assessments of constructs relevant to MPB.

Finally, although our model explained 69% of the variance in maladaptive parental behavior, a proportion remains unexplained. There is evidence for the role of other cognitive processing variables or affective risk factors in the prediction of MPB. Parental knowledge of discipline methods, problem solving skills (Rabbitt & Rodriguez, 2019), locus of control (Slep & O`Leary, 1998), parenting self-efficacy (Jones & Prinz, 2005; Cao et al., 2023) and empathy (Rodriguez et al., 2020) have been found to predict MPBs. Future research should identify which other variables account for the unexplained variance.

Conclusion

The present findings increase our understanding of risk factors associated with mothers' maladaptive parental behaviors, as well as their interaction in the prediction of such negative outcomes. Results support the role of mothers' cognitive processes and parenting stress as potential mechanism through which child behavioral difficulties operate to influence maladaptive parental behavior and increase mothers' risk of committing child abuse. However, findings do not support the potential role of mothers' cognitive processes as the mechanism linking parenting stress to MPB, suggesting that parenting stress influences mothers' maladaptive parental behavior rather directly (or through other mechanisms). Findings underscore the need to focus on

mothers' cognitive processes (e.g., through cognitive restructuring or misattribution training) and parenting stress (e.g., through training mothers in use of self-management strategies to increase self-efficacy) in programs aimed at reducing or preventing risk of mothers' engaging in child abuse, alongside the existing focus on teaching them skills to manage child behavioral difficulties.

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Figure 1

The hypothesized structural model

Note. PS=Parenting Stress; CB=Child behavior; PC=Parental cognitions; MPB=Maladaptive Parental Behavior;

Figure 2

Results for the constrained (retained) model

Note. CB=Child behavior; CBCLi=Child Behavior Checklist Internalizing; CBCLe=Child Behavior Checklist Externalizing; PS=Parenting Stress; PSr=Parenting Stress, Lack of Rewards; PSs=Parenting Stress, Presence of Stressors; PC=Parental cognitions; ATS=Attitudes Towards Spanking; PCV=Plotkin Child Vignettes; PES=Parental Expectations Scale; MPB=Maladaptive Parental Behavior; PSo=Parenting Scale Overreactivity, with numbers representing included items;

Circles represent latent variables and squares represent observed variables. Factor loadings and standard error are presented for each observed variable.

Values are standardized regression weights, all significant at $p < 0.01$. Standard error of measurement is presented in parentheses.