Repositório ISCTE-IUL

Parental Attitudes in Child Maltreatment

Cláudia Camilo

Iscte– Instituto Universitário de Lisboa, Cis_Iscte, Lisboa, Portugal

claudia_sofia_camilo@iscte-iul.pt

Margarida Vaz Garrido

Iscte– Instituto Universitário de Lisboa, Cis_Iscte, Lisboa, Portugal

margarida.garrido@iscte-iul.pt

Maria Manuela Calheiros

CICPSI, Faculdade de Psicologia, Universidade de Lisboa, Lisboa, Portugal

Iscte– Instituto Universitário de Lisboa, Cis_Iscte, Lisboa, Portugal

maria.calheiros@psicologia.ulisboa.pt

Corresponding author: Cláudia Camilo, Cis_Iscte, Avenida das Forças Armadas, Edifício Iscte-IUL, 1649-026, Lisboa, Portugal. Email: claudia_sofia_camilo@iscte-iul.pt; Phone number: 00351 217903000.

V., & Calheiros, M. M. (2020). Parental attitudes in child maltreatment. *Journal of Interpersonal Violence*. doi:10.1177/0886260520943724.

Abstract

An information-processing approach to maladaptive parenting suggests that high-risk and maltreating parents are likely to hold inaccurate and biased preexisting cognitive schemata about child development and child rearing. Importantly, these schemas, which may include values, beliefs, expectations and attitudes, are known to influence the way parents perceive and subsequently act towards their children. However, the few studies specifically addressing parental attitudes only considered global maltreatment, not distinguishing abuse from neglect. Moreover, few have considered dual-process models of cognition, relying mostly on the explicit level of parental attitudes that can be prone to various biases. Based on the Social Information Processing (SIP) model of child abuse and neglect, the current study examines the association of parents preexisting cognitive schemata, namely explicit and implicit parental attitudes, and child abuse and neglect. A convenience sample of 201 mothers (half with at least one child referred to child protection services) completed a measure of explicit parental attitudes and a speed-accuracy task related to parenting. Abuse and neglect were measured with self-report and professionals-report instruments. Overall, the results support the hypothesis that maladaptive parenting is related with more biased preexisting cognitive schemas, namely attitudes related to parenting, but only for neglect and particularly when reported by professionals. Moreover, the results observed with both the explicit and implicit measures of attitudes were convergent, with mothers presenting more inadequate explicit attitudes also exhibiting an overall lower performance in the implicit attitudes task. This study is likely to contribute to the SIP framework of child abuse and neglect, particularly for the elucidation of the socio-cognitive factors underlying maladaptive parenting, while also providing relevant cues for prevention and intervention programs.

Keywords: Maladaptive parenting; Child abuse and neglect; Information processing; Parental attitudes; Parental cognitions

Parental Attitudes in Child Maltreatment

The science of parenting has long been emphasizing the role of parental cognitions in shaping parent-child interactions. For example, social cognitive learning theory has focused on perceptions of self-efficacy (e.g., Jones & Prinz, 2005), attachment theory on internal working models of relationships (e.g., Mayseless, 2006), and attributional theories on control ability, intentionality, locus, and stability of parental-related events (e.g., Nix et al., 1999).

Recent cognitive approaches to parenting suggest that parental cognitions are key elements in organizing socialization goals and caregiving behaviors (e.g., Azar et al., 2008). According to these approaches, preexisting cognitive schemas constitute crucial elements in cognitive information processing and refer to the knowledge structures that assist people in organizing their experiences and to respond to stimulus events (e.g., Sigel & McGillicuddy-DeLisi, 2002). Several studies have been identifying a set of parental cognitive schemas that are linked to parental behaviors and family functioning. For example, the lack of maternal knowledge about child development and child-rearing concepts has been associated with poorer family environments (e.g., Benasich & Brooks-Gunn, 1996). Further, parental attitudes about corporal punishment have been related with the use of coercive discipline methods towards children (e.g., Slep & O'Leary, 1998).

These socio-cognitive approaches have also been important to understand maladaptive parenting, and specifically child abuse and neglect (e.g., Milner, 2003), which are known to not only harm the current life of the child, but also to present adverse effects on the child's later development (Jaffee & Maikovich-Fong, 2011), with serious social and economic costs for the community (Radford et al., 2013).

The Social Information Processing (SIP) model applied to child abuse and neglect (e.g., Azar et al., 2017; Milner, 2003) suggests that abusive and neglectful parents cannot adequately respond to their child's needs because of errors or biases in information

processing, particularly in information related to the child and the caregiving role. According to this model, preexisting schemas, when activated, may act as a filter of the environmental information to which parents are expected to attend (e.g., Azar et al., 2008). Therefore, they are likely to influence parental perceptions and interpretations about their child's needs and behaviors, and to determine the subsequent response selection and implementation (Milner, 2003). Within this framework, the current study specifically addresses parental preexisting cognitive schemata, namely by systematically examining the association between parental attitudes, and child abuse and neglect.

This association between parental attitudes and maltreatment has been receiving some empirical support, with research showing that high-risk and maltreating parents are more likely to hold more inaccurate and biased preexisting cognitive schemata about child development and education (e.g., Crouch et al., 2012). Recent meta-analytic data also supports that personal-specific schemata, as well as parental beliefs and attitudes, partly explain maladaptive parenting practices such as child abuse and neglect (Camilo et al., 2019). Specifically, abuse has been associated with unrealistic expectations about child development (e.g., Haskett et al., 2006), higher belief in the value of corporal punishment (e.g., Slep & O'Leary, 2007), self-attributions to external locus of control (McElroy & Rodriguez, 2008), higher accessibility of negative schemata attributes (e.g., Hiraoka et al., 2014), less empathic schemata (e.g., Rodriguez & Tucker, 2015), and inadequate parenting attitudes (e.g., Rodriguez et al., 2016). For instance, Rodriguez and colleagues (2016) tested the SIP model in the context of child physical abuse. In this study, expectant mothers and fathers' inadequate attitudes predicted lack of knowledge of appropriate disciplinary strategies and higher expectations of child compliance, which in turn increased child physical abuse risk. Although the studies conducted with neglectful parents are still scarce, research has already shown that neglectful parents demonstrate higher unrealistic expectations (Azar et al., 2012;

Azar et al., 2017), higher external locus of control (Rodriguez & Richardson, 2007), and lower empathic concern (Rodrigo et al., 2011). Furthermore, maladaptive parenting seems to be associated with less positivity attributed to parenting, higher schemata rigidity and a more simplistic thinking about parenthood (Camilo, Garrido, Ferreira et al., 2019), even when considering parents' general intellectual functioning (e.g., Azar et al., 2012), which, along with poverty, might interfere with the SIP activities (e.g., Azar et al., 2008).

Parents' attitudes toward parenting are part of parents' knowledge structures (Holden & Buck, 2002). In general, attitudes reflect "(a) a relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols, and (b) a general feeling or evaluation – positive or negative – about some person, object or issue" (Hogg & Vaughan 2017, p. 154). Specifically, parental attitudes are a product of parents' knowledge, values, beliefs and expectations towards their children, which are informed by cultural and social representations, as well as by parents' own experiences and values (Holden & Buck, 2002). Thus, attitudes about parenting in general, and harsh parenting in particular, vary substantially across cultures (e.g., Bornstein et al., 2011; Mesman et al., 2020). For instance, among the very few studies about parenting cognitions conducted in Portugal (e.g., Narciso et al., 2018; Camilo, Garrido, Ferreira, et al., 2019), none has specifically explored parental attitudes at an implicit level.

Research on parental cognitions has recently drawn some attention to dual-process models, namely by acknowledging that cognitions exist at different explicit and implicit levels (e.g., Johnston et al., 2017). Specifically, this framework suggests that, cognitions exist in two qualitatively distinct processing structures: explicit level, under high levels of conscious control, and more prone to cognitive distortions and reporting biases, and implicit level, more unconscious, impulsive, and stable (e.g., Greenwald & Banaji, 1995). At an explicit level, cognitions are typically evaluated through self-report questionnaires and

interviews (Jobe, 2003). To assess cognitions at the implicit level, social and cognitive psychologists have been using experimental paradigms, involving response latencies (e.g., Bargh & Chartrand, 2014) or psychophysiological measures (e.g., Blascovich et al., 2011).

Parental attitudes have been typically assessed through self-report questionnaires (e.g., Okagaki & Bingham, 2005), which entail a set of advantages such as direct access to thinking contents or easiness of administration. However, these measures only assess the explicit processing of events (e.g., Sturge-Apple et al., 2015) and are potentially prone to perceptual biases and report distortions, in order to avoid social judgment or even legal interventions (Portwood, 2006). Implicit measures have been particularly important in the study of attitudes, stereotypes, close relationships and health behavior (for a review, see Fazio & Olson, 2003). Specifically, these measures are often obtained with priming paradigms to assess what is activated from memory during the presentation of some attitude object. Faster responses suggest high accessibility of the concepts in memory, revealing the influence of a schema (prime-related mental constructs) in information processing activities (Bargh & Chartrand, 2014).

Some studies have already included implicit measures to assess parental cognitions in the parenting domain, and specifically in child abuse and neglect research (for a review see Camilo et al., 2016). For example, Johnston and colleagues (2017) adapted an Implicit Association Test to evaluate mothers' implicit attitudes toward children on a community sample. Their results suggest that mothers' implicit positive attitudes about their children were significantly associated with less negative parenting practices, even when controlling for explicit self-reports. Further, Sturge-Apple and colleagues (2015) used a Go/No-go Association Task to assess mothers' implicit attitudes toward their children and found these to be significant predictors of reported and observed parenting behavior. The application of dual-process models to parenting is likely to allow a better understanding of the different

levels of parental cognitions, at implicit and explicit levels, and even more so when parents are under the child protection services' (CPS) evaluation and/or legal intervention as in child abuse and neglect cases.

However, the few studies that specifically looked at parental attitudes have predominantly been considering negative or harsh parenting (with non-referred samples), or only addressing global maltreatment (e.g., cases referred to child protection services), thus not distinguishing abuse from neglect. Moreover, few studies have considered dual-process models of cognition, relying mostly on the explicit level of parental attitudes that can be prone to various biases. The application of implicit measures, extensively used in social cognition literature, to child abuse and neglect assessment, may add an important contribution to the traditional self-report methods, but the novelty of using these measures in assessing parental cognitions requires extra efforts in ensuring their internal and external validity (Drost, 2011).

Moreover, self-report measures of abuse and neglect require parents to have conscious awareness of their practices and are prone to social desirability (Lau et al., 2006). For these reasons, research on child abuse and neglect has been suggesting the use of multiple sources of information (such as professionals' assessment) in the evaluation of maltreatment practices (Cicchetti & Manly, 2001; Jackson et al., 2019). Therefore, studies on the predictors of child abuse and neglect, assessing the different types of child maltreatment through multiple sources, are probably more informative in capturing these complex phenomena. Further, the assessment of abuse and neglect needs to consider the multidimensionality of child maltreatment, in order to disentangle the different putative causal mechanisms specifically associated with abuse and neglect (Warmingham et al., 2019).

The current study examines the association of explicit and implicit parental attitudes and child abuse and neglect. To this end we recruited mothers referred and non-referred to

CPS; independently assessed abuse and neglect through self- and professionals-report instruments; and measured their (implicit and explicit) parental attitudes.

Based on the available literature, we expected that mothers with higher abuse and neglect scores would present: a) more inadequate explicit parental attitudes; b) lower performance (lower accuracy and longer response latencies) in positive-implicit associations with parenting; and c) better performance (higher accuracy and shorter response latencies) in negative-implicit associations with parenting, than those with lower scores. Additionally, although consistency between implicit and explicit measures of parental attitudes might be expected, the implicit measure is likely to show higher sensitivity to the influence of abuse and neglect, than the explicit measure, since the latter is more dependent on self- awareness and more prone to social desirability. Moreover, we also explored the potential convergence between self- and professionals-report measures of abuse and neglect. Finally, due to the potential role of intellectual functioning (e.g., Azar et al., 2008) and poverty (e.g., Rudy & Grusec, 2006) in social information processing, we controlled for the effect of these variables in the models.

Method

Participants

A convenience sample of 201 Portuguese mothers participated in this study. Their age ranged from 24 to 53 years old ($M = 38.57$, $SD = 6.58$), and they had between one and eight children ($M = 2.65$, $SD = 1.41$). Most of the mothers were White (68.2%) and did not complete high school (57.5%). Approximately half of the sample (n=101) had at least one child referred to the Portuguese child protection services. The remaining (n=100) were recruited in schools and community services from socially vulnerable communities, to balance the socio-demographic characteristics of the sample. Mothers were eligible for participation if they had at least one child within the age range of 5–13 years old in order to

meet the requirements of the maltreatment measures used. Moreover, we defined as exclusion criteria mothers with severe intellectual disabilities and lack of native language proficiency given the cognitively demanding nature of the tasks in the protocol. Finally, for the referred group, and in line with previous studies (e.g., Hildyard & Wolfe, 2007), mothers with a substantiated record of sexual child abuse as a perpetrator were not included, given the specificities of sexual abusive behaviors.

Measures

Given the lack of validated measures of abuse and neglect in the Portuguese context, we translated, adapted and validated two well-established parental self-report measures of abuse and neglect. Further, in order to get separate scores of abuse and neglect reported from professionals, a confirmatory analysis was conducted with a previous measure of professionals' report of maltreatment validated for the Portuguese context. Likewise, the explicit measure of parental attitudes was translated, adapted and validated to our sample.

Professionals' Report of Abuse and Neglect. These reports were obtained through the *Maltreatment Severity Questionnaire* (MSQ; Calheiros et al., 2019), consisting of 21 items (e.g., *Physical hygiene and wellbeing*), each composed by four severity descriptors (e.g., from 1 = *They keep the child looking dirty (e.g., does not take a bath, does not wash her head or teeth, stinks, has parasites and/or fleas)* to 4 = *They let the child have health problems or injuries due to her hygienic conditions (e.g., skin diseases, infected skin injuries)*). Originally, the MSQ is organized in a three-factor structure: Physical neglect, Psychological neglect, and Physical and psychological abuse. In the current study, we obtained two separate global scores of abuse and neglect [χ^2 (129) = 387.567, $p < .001$, $\chi^2/df = 3.004$; comparative fit index (CFI) = .815; and root mean square error of approximation (RMSEA) = .101] with good internal consistency indicators: Physical and Psychological neglect (14 items; $\alpha = .87$) and

Physical and Psychological abuse (4 items; α = .71). Higher scores in the MSQ dimensions mean higher levels of maltreatment. The MSQ was completed with the information available regarding each target-child, by CPS case-workers (for the referred group of mothers) and by the child's teacher/ professional of community service (for the non-referred group).

     Self-reported Abuse. The *Conflict Tactics Scale - Parent to Child* (Straus et al., 1998) is a self-report measure that obtains reports of abuse from parents. The questionnaire with 22 items (e.g., *Spanked him/her on the bottom with your bare hand*) is originally organized in three main dimensions: Non-violent discipline, Psychological aggression, and Physical assault (this last, composed by Corporal punishment, Physical maltreatment, and Extreme physical maltreatment). Mothers rated statements on a 7-point scale ranging from 0 = *never happened* to 7 = *more than 20 times in the past year*. In the current study, an abuse scale was used, constituted by the dimensions of Psychological aggression and Corporal punishment [χ^2 (39) = 79.198, $p < .001$, $\chi^2/df = 2.031$; comparative fit index (CFI) = .907; and root mean square error of approximation (RMSEA) = .067]. This scale included 7 items (α = .72), with higher scores meaning higher abuse.

     Self-reported Neglect. The *Multidimensional Neglectful Behavior Scale – Parent Report* (MNBS; Kantor et al., 2003) is a self-report measure that obtains reports of neglect from parents with children aged between 5-15 years old. A previous version of the MNBS validated for a Portuguese sample (Neves & Lopes, 2013) was used, composed by 49 items (e.g., *Did not know where your child was playing when she/he was outdoors*), divided in four core dimensions: Emotional neglect, Cognitive neglect, Supervision neglect, and Physical neglect. Respondents were asked about their parental behaviors in a 4-point scale, ranging from 1 = *never* to 4 = *always*. In the current study, a global score of neglect was used [χ^2 (346) = 573.744, $p < .001$, $\chi^2/df = 1.658$; comparative fit index (CFI) = .926; and root mean

square error of approximation (RMSEA) = .057], revealing good internal consistency (α = .83), with higher scores meaning higher neglect.

Explicit parental attitudes. The *Adult-Adolescent Parenting Inventory–2.1 Form A* (AAPI; Bavolek & Keene, 2010) is a self-report measure of beliefs regarding child-rearing that characterizes abusive parenting. The original AAPI-2.1 (form A) includes 40 items (e.g., *Children learn respect through strict discipline*), to be responded in a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*, that are distributed across five core dimensions: Inappropriate parental expectations, Parental lack of an empathic awareness of children's needs, Strong belief in the use and value of corporal punishment, Parent-child role reversal, and Oppressing children's power and independence. In this study, a global score was used [χ^2 (401) = 745.205, *p* < .001, χ^2/df = 1.858; comparative fit index (CFI) = .856; and root mean square error of approximation (RMSEA) = .061], with good internal consistency (α = .92). Higher scores in AAPI dimensions mean higher maladaptive child rearing attitudes.

Implicit parental attitudes. A speed-accuracy task was developed to indirectly measure how strongly participants associated a mother's role with positive and negative attributes. This task was adapted from well-documented implicit measures of attitudes (e.g., Dotsch & Wigboldus, 2008; Fazio & Olson, 2003). Participants were asked to classify pictures associated with a mother's role (e.g., pictograms of a woman with a child, doing caregiving-activities like playing with a child with toy blocks) as well as positive and negative attributes (e.g., loving, responsible, cold, aggressive; selected from Camilo, Garrido, Ferreira et al., 2019). The task included two blocks. In the positive block, participants had to classify 24 stimuli (7 positive words, 7 images and 10 negative words) as "Good or Mother" (left key) or as "Bad" (right key). In the negative block, participants had to classify 24 stimuli (10 positive words, 7 negative words and 7 images) as "Good" (left key) or as "Bad or Mother" (right key). Each block was preceded by 24 practice trials, immediately followed by

the 72 test trials (with the replacement of each type of stimuli three times). Within blocks, all stimuli were presented in a random order. The stimuli remained on the screen until participants responded. In the practice trials, if participants failed to respond within 1,500 ms, a reminder to "Please respond more quickly!" appeared for 500 ms. Following each response, participants were given feedback regarding the accuracy of their response. Accuracy and response times were collected from the positive and negative blocks. High performance (high accuracy and shorter response latencies) on the block of trials where "Mother or Good" were paired would suggest more positive implicit attitudes, whereas high performance on the block of trials where "Mother or Bad" were paired would suggest stronger negative implicit attitudes.

Family socioeconomic status. Mothers were asked to report their highest completed education level, monthly family income, income source, housing and neighborhood characteristics, in a 5-point scale. Since all variables were positively and significantly correlated (all p's < .01), the scores were computed into a socioeconomic status index (SES; α = .77) (e.g., Beckerman et al., 2018). Lower scores indicated lower SES.

Mothers' intellectual functioning. Four subscales of the *WAIS-III* (Arithmetic, Matrix reasoning, Information, Coding; α = .62 (Wechsler, 1997; Portuguese version of CEGOC, 2008) were used as an estimate of general intellectual functioning due to their previously reported high correlation with the full scale (e.g., Azar, et al., 2017).

Procedure

The data reported in the current paper represents a selection of the measures collected during 2017 and 2018, in the context of a more comprehensive research program about maternal cognitions associated with abusive and neglectful behaviors. All measures and procedures were approved by the Ethics Committee of the host institution (EA# 08/2016).

After obtaining the permission from the institutions (12 CPS agencies, 8 schools, and 9 community institutions), mothers who met the inclusion criteria were contacted by the CPS, community services and schools, and were invited to participate in a study about parenting. Those who agreed to participate were invited for two individual sessions taking place at the respective CPS agencies (referred group), schools and community services (non-referred group). Participants were informed that they would participate in a study examining how mothers perceive, think, and remember information about child rearing and development, and their influence on parental practices.

In the first session, after reading and signing the informed consent, participants were asked to provide demographic information. Then they completed the implicit parental attitudes task, using E-Prime 2.0 in a laptop provided by the researcher, and filled in the AAPI. In the second session, they were asked to complete the WAIS subscales, the MNBS and the CTS-PC. In the end of both sessions, participants were thanked, debriefed and compensated with a 10€ gift card. Later, the MSQ was completed by the CPS caseworkers or by the child's teacher/ community service professional.

Data analysis strategy

SPSS 25.0 was used to conduct data-analysis. The independent variables were standardized, and analysis of normal distribution and potential outliers revealed the absence of standardized scores extremely lower than -3.29 or extremely higher than 3.29 (Tabachnick & Fidell, 2012), except for the abuse dimension of the MSQ. However, since the absolute value of skewness of this dimension was lower than 3, it was considered as non-problematic in terms of distribution (Kline, 2005).

Regarding the implicit task data reduction (e.g., Bargh & Chartrand, 2014), participants with an accuracy rate lower than 70% were excluded from analysis, resulting in the elimination of 1 participant (accuracy rate = 48.61%). Responses with latencies lower than

350 ms and higher than 2500 ms were eliminated as well as responses lower or higher than 2.5 standard deviation from the mean response latencies for the positive and negative blocks. Subsequently, participants with less than 50% of valid responses were excluded from analysis, resulting in the additional exclusion of 6 participants (rate of valid responses between 4.86% - 49.31%). In total, 7 participants (3.07%) were excluded from the analysis. Data from the practice blocks were discarded.

To explicitly test our hypothesis, the relationship between abuse / neglect and implicit / explicit attitudes was explored by means of the General Linear Model (GLM). Specifically, our main independent variables were self-reported abuse and neglect, and professionals-reported abuse and neglect (once self and professionals-reports were not correlated; see Table 1). Given the significant correlations between abuse and neglect (Table 1) and considering the high co-occurrence of different types of maltreatment, namely neglect, emotional maltreatment, and physical abuse reported in the literature (Kim et al., 2017), abuse and neglect were entered in the models together, in order to control each other. The dependent variables were the AAPI scores (explicit attitudes), and accuracy and response latency of correct responses in the positive and negative blocks of the speed-accuracy task (implicit attitudes). Within-participant effects of the type of stimuli (images, positive and negative words) were also explored in order to control the effect of the stimuli and examine their variability according to the abuse and neglect scores. Moreover, due to the high correlations of the dependent measures with participants' intellectual functioning and SES (Table 1), the effects of these two variables were subsequently controlled.

Results

Explicit attitudes about parenting

Results of the explicit parental attitudes (presented in Table 2) revealed an effect of self-reported neglect, with higher neglect associated with higher inadequate explicit parental

attitudes, even after controlling for mothers' intellectual functioning and SES. No significant effects were found for self-reported abuse. A main effect of neglect reported by professionals was also observed, with higher neglect associated with higher inadequate explicit parental attitudes. This effect was no longer significant after controlling for mothers' cognitive functioning and SES. Again, no significant effects were found for abuse.

Implicit attitudes about parenting

Positive-implicit associations. As for participants' response accuracy, a main effect of stimulus type was observed, such that images ($M = .992$, $SE = .003$) obtained the highest accuracy, followed by the positive ($M = .974$, $SE = .003$) and the negative stimuli ($M = .950$, $SE = .004$). A similar pattern was observed for response latency, with faster responses for images ($M = 833.09$, $SE = 15.22$), followed by positive ($M = 990.07$, $SE = 19.77$), and negative stimuli ($M = 1104.46$, $SE = 23.37$).

A main effect of professionals-reported neglect was also observed, with higher neglect associated with higher response latencies, although no longer significant after controlling for mothers' intellectual functioning and SES. These results are presented in Table 3.

Negative-implicit associations. Regarding accuracy, a main effect of stimulus type was observed, such that positive stimuli ($M = .956$, $SE = .006$) obtained the highest accuracy, followed by the negative ($M = .927$, $SE = .006$) and the images ($M = .836$, $SE = .023$).

Although the main effects of self-reported abuse and neglect were not significant, a significant interaction was found between stimulus type and neglect. A contrast analysis showed that higher scores on neglect were marginally associated with high accuracy on images ($b = .05$), $t(193) = 1.93$, $p = .055$, $\eta_p^2 = .019$, but no significant associations were found between neglect and the accuracy in classifying positive and negative stimuli.

A significant main effect of professionals-reported abuse was also observed, with higher abuse associated with higher accuracy. This effect was no longer significant after controlling for mothers' intellectual functioning and SES. Results also revealed a significant interaction between stimulus type and abuse, and contrast analysis showed that higher scores of abuse reported by professionals were associated with higher accuracy on images ($b =.08$), $t(191) = 2.77$, $p = .006$, $\eta_p^2 = .039$, but no significant association was found between abuse and positive and negative stimuli. Further, a significant main effect was found for professionals-reported neglect, with higher scores of neglect associated with lower accuracy that remained significant even after controlling for mothers' intellectual functioning and SES. A significant interaction between stimulus type and neglect reported by professionals was also observed, and contrast analysis showed that higher scores on neglect were associated with lower accuracy on images ($b = -.12$), $t(191) = -4.36$, $p < .001$, $\eta_p^2 = .090$, but no significant associations were found between neglect and positive and negative stimuli.

For response latency, the results revealed a main effect of stimulus type, with faster categorization latencies for images ($M =753.81$, $SE = 14.39$), followed by positive ($M = 938.44$, $SE = 18.43$), and negative stimuli ($M = 1053.85$, $SE = 21.79$). Only the main effect of professionals-reported neglect was significant, with higher neglect associated with higher overall latencies, although no longer significant after controlling for mothers' intellectual functioning and SES. The results for negative-implicit associations with parenting are presented in Table 4.

Relationship between explicit and implicit measures of parental attitudes

Correlational analysis (presented in Table 1) showed that, the AAPI scores were negatively correlated with accuracy and positively correlated with response latencies on the negative block of the implicit measure, indicating that more inadequate explicit attitudes are associated with less accurate and slower responses on the negative-implicit associations with

parenting. Importantly, and as predicted, the AAPI scores were positively correlated with response latencies in positive associations with parenting, indicating that more inadequate explicit attitudes are associated with slower responses on the positive-implicit associations with parenting. Overall, these results indicate that as inadequate explicit attitudes increase, the general performance in positive and negative attitudes implicit tasks decreases.

Discussion

The SIP model applied to child abuse and neglect suggests that preexisting cognitive schemas constitute a key element in cognitive information processing related to caregiving (Azar et al., 2008; Milner, 2003). Parental attitudes towards parenting are an integral part of these knowledge structures (Holden & Buck, 2002). However, explicit and implicit parental attitudes in maladaptive parenting remain largely understudied (e.g., Johnston et al., 2017).

The present research further examined the role of parental attitudes in child abuse and neglect. Specifically, we investigated the association between parental attitudes and abuse and neglect in mothers that were referred and non-referred to CPS, assessing abuse and neglect through self- and professionals-report instruments and measuring parental attitudes using explicit and implicit measures.

Overall, our results support the hypothesis that maladaptive parenting is related with more biases in preexisting cognitive schemas, namely attitudes related to parenting, but only for neglect. Specifically, when considering professionals' reports of maltreatment, mothers that were evaluated as more neglectful reported higher inadequate explicit parental attitudes and revealed more biases when making implicit associations with parenting, even when controlling for mothers' intellectual functioning and SES. The lower overall performance observed for more neglectful mothers is in line with previous research (e.g., Johnston et al., 2017) and supports the SIP model applied to neglect. Specifically, this model states that neglectful parents fail to respond to child's signals because they are not able to advance in the

complex pattern of mental processing that precedes the parental response (e.g., Crittenden, 1993). Moreover, the results are consistent with previous research revealing the low complexity of parental cognitions characteristic of maladaptive parenting (e.g., Camilo, Garrido, Ferreira et al., 2019).

Regarding abuse, mothers scoring higher on abuse showed better performance in detecting negative associations with parenting, but this result was no longer significant when controlling for mothers' intellectual functioning and socioeconomic status. Overall, our results suggest that higher scores on abuse are associated with fewer biases in implicit and explicit parental attitudes, a pattern that was not observed in those scoring high on neglect. These differences are in line with the idea that, whereas neglect can be a product of an early interruption in cognitive processing, abusive parents may go through the cognitive processing stages, and present distortions in a later stage that lead to an inadequate parental response (e.g., McElroy & Rodriguez, 2008; Slep & O'Leary, 2007). For example, abusive parents may engage in attentional processes and perceive the child's signals, but make biased interpretations of those signals (e.g., Ateah & Durrant, 2005) and choose inadequate responses (e.g., Dadds et al., 2003). However, our results are not convergent with previous studies that have been showing the importance of parental attitudes (e.g., Rodriguez, 2018) and of the accessibility of negative schemata (e.g., Farc et al., 2008) in explaining parental abusive behaviors. This may be the case because these studies predominantly assessed child abuse with measures of risk (such as CAPI) and did not control for neglect.

Importantly, the pattern of results observed is not always consistent across the source of maltreatment reporting. This is not surprising given that the correlations between self- and hetero-reported maltreatment are non-significant. The overall pattern of non-significant results observed with self-reported abuse and neglect measures is likely the result from the well-known shortcomings of these measures (e.g., Lau et al., 2006). In turn, professionals-

reported child maltreatment revealed to be sensitive in discriminating implicit attitudes associated with maladaptive parenting.

Analyzing the convergence between the explicit and the implicit measure of attitudes, the results revealed that mothers with more inadequate explicit attitudes also presented an overall lower performance in implicit attitudes associated with parenting. Social cognition researchers have long argued that, since implicit cognition may differ from conscious and explicit cognition, differences between both measures can be expected (e.g., Greenwald & Banaji, 1995). However, and also in line with the literature (Hofmann et al., 2005), the consistency between measures observed in our results suggests that our implicit and explicit measures are conceptually related. While this convergence may confer some robustness to our findings, it might have resulted from the explicit measure used. Indeed, the AAPI may be less prone to social desirability than other measures since it evaluates beliefs and attitudes, and not tangible parental practices, which require a higher disclosure of actual maltreating behaviors.

Despite the contributions of this study to the advancement of parental cognition research in the context of child maltreatment, important limitations should be addressed. In the implicit task, the presentation of the positive and negative blocks was not counterbalanced, thus preventing the estimation of a single value (like a *D* score) for the implicit measure. This issue could be addressed in future designs because the use of a single dependent measure of the implicit attitude allows the direct comparison between negative and positive blocks. Additionally, implicit measures are usually collected in controlled environments like research laboratories. In the current study, these measures were collected in a community setting, with distractors that could influence response latencies, even if some literature suggests no impact of the context of application in implicit tasks' performance (e.g., Shepherd, 2019). Moreover, the social context and the specific target of cognition may affect

the activation of implicit cognition (e.g., Gawronski & Houwer, 2014). Considering that parenting occurs in context and in response to a specific parent-child interaction, the structure of this type of implicit tasks might consider the use of familiar stimuli, as videos or photographs of participants' own children (e.g., Johnston et al., 2017). Also, the implicit measure of parental attitudes used in this study was not properly validated with similar samples, which may limit a more definitive interpretation of the results (Gawronski et al., 2009). Further, the version of the instrument used to assess cognitive functioning is currently outdated (WAIS-III). Nevertheless, it is the latest version of this measure validated for the Portuguese context. Finally, although the Maltreatment Severity Questionnaire presents a poor fit, the adequate internal consistency of the sub-scales and the importance of having two separate scores for abuse and neglect justified to proceed with the analyses using the structures obtained.

Despite these limitations, the application of social cognition approaches to child maltreatment research constitutes an innovative and important strategy to access parental cognitions and behaviors related to parent-child interactions. Conceptually, our results add knowledge about socio-cognitive variables, namely attitudes, which should be addressed within the context of parenting evaluations and treatments (e.g., Mah & Johnston, 2008). This is particularly the case for child neglect, which is the most common form of child maltreatment (e.g., U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2019).

This study also brings important methodological contributions. The combination of explicit with implicit measures circumvents some of the problems associated with the single use of questionnaires of self-report and observational methods and is likely to constitute a better approach in capturing parental cognitions (Camilo et al., 2016). Future research could

also benefit from integrating experimental manipulations of parents' affective and motivational states, use more ongoing and spontaneous forms of assessing cognitions (as, for example, using video-mediated recall, open-ended interview tasks, or daily diaries), and employing different methods to capture the complexity and diversity of parental cognitions (e.g., Johnston et al., 2008).

This study also addressed the importance of using multiple sources of information to evaluate child maltreatment (e.g., Lanktree et al., 2008), in order to achieve a "best estimate" of maltreatment experiences (Jackson et al., 2019). According to these authors, parents are an important source of data but, due to several constrains and bias, they do not provide all the required information, which needs to be supplemented by professionals that work close to the family.

Finally, the knowledge on parental cognitions specifically associated with child neglect examined in the current paper might inform parenting interventions, namely by clarifying the role of preexisting cognitive schemata in the formation and maintenance of disruptive responses. Therefore, alongside more mainstream intervention programs with parents, more specific psychological intervention strategies for cognitive restructuring, problem-solving training, and reattribution training (e.g., Azar & Wolfe, 2006) should also be considered. Indeed, parenting programs addressing changes in parental cognitions have demonstrated to be successful (e.g., Bugental et al., 2012).

Using a multimethod approach to investigate parental cognitions and different sources of information in the assessment of child maltreatment, the present study examined parental preexisting cognitive schema, namely parental attitudes, underlying maladaptive parenting. This research presents a contribution to the scant research about parental cognitions, which might inform future investigation and support intervention on different types of maltreatment.

References

Ateah, C. A., & Durrant, J. E. (2005). Maternal use of physical punishment in response to child misbehavior: Implications for child abuse prevention. *Child Abuse & Neglect, 29*, 169–185. doi:10.1016/j.chiabu.2004.10.010

Azar, S. T., McGuier, D. J, Miller, E. A., Hernandez-Mekonnen, R., & Johnson, D. R. (2017). Child neglect and maternal cross-relational social cognitive and neurocognitive disturbances. *Journal of Family Psychology, 31*, 8–18. doi:10.1037/fam0000268

Azar, S. T., Reitz, E. B., & Goslin, M. C. (2008). Mothering: Thinking is part of the job description: Application of cognitive views to understanding maladaptive parenting and doing intervention and prevention work. *Journal of Applied Developmental Psychology, 29*, 295–304. doi:10.1016/j.appdev.2008.04.009

Azar, S. T., Stevenson, M. T., & Johnson, D. R. (2012). Intellectual disabilities and neglectful parenting: Preliminary findings on the role of cognition in parenting risk. *Journal of Mental Health Research in Intellectual Disabilities, 5*, 94–129. doi:10.1080/19315864.2011.615460

Azar, S. T., & Wolfe, D. (2006). Child physical abuse and neglect. In E. J. Mash & R. A. Barkley (Eds.), *Treatment of childhood disorders* (3rd ed., pp. 595–646). New York, NY: Guilford Press.

Bargh, J., & Chartrand, T. (2014). The mind in the middle: A practical guide to priming and automaticity research. In H. Reis & C. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed., pp. 311–344). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511996481.017

Bavolek, S. J., & Keene, R. G. (2010). *Adult-Adolescent Parenting Inventory AAPI-2.1: Administration and development handbook*. Park City, UT: Family Development Resources, Inc.

Benasich, A. A., & Brooks-Gunn, J. (1996). Maternal attitudes and knowledge of child-rearing: Associations with family and child outcomes. *Child Development, 67*, 1186–1205. doi:10.2307/1131887

Beckerman, M., van Berkel, S. R., Mesman, J., & Alink, L. R. A. (2018). Negative parental attributions mediate associations between risk factors and dysfunctional parenting: A replication and extension. *Child Abuse & Neglect, 81*, 249–258. doi:10.1016/j.chiabu.2018.05.001

Blascovich, J., Vanman, E. J., Mendes, W. B., & Dickerson, S. (2011). *Social psychophysiology for social and personality psychology*. London: Sage.

Bornstein, M. H., Putnick, D. L., & Lansford, J. E. (2011). Parenting attributions and attitudes in cross-cultural perspective. *Parenting, 11*, 214–237. doi:10.1080/15295192.2011.585568.

Bugental, D. B., Corpuz, R., & Schwartz, A. (2012). Preventing children's aggression: Outcomes of an early intervention. *Developmental Psychology, 48*, 1443–1449. doi:10.1037/a0027303

Calheiros, M. M., Silva, C. S., & Magalhães, E. (2019). Child Maltreatment Severity Questionnaire (MSQ) for professionals: development, validity, and reliability evidence. *Assessment*. doi:10.1177/1073191119890030

Camilo, C., Garrido, M. V., & Calheiros, M. M. (2016). Implicit measures of child abuse and neglect: A systematic review. *Aggression and Violent Behavior, 29*, 43–54. doi:10.1016/j.avb.2016.06.002

Camilo, C., Garrido, M. V., & Calheiros, M. M (2019). *The social information processing model in child abuse and neglect: A meta-analytic review*. Manuscript submitted for publication.

Camilo, C., Garrido, M. V., Ferreira, M. B., & Calheiros, M. M. (2019). How does mothering look like: A multidimensional approach to maternal cognitive representations. *Journal of Family Issues, 40*, 2528–2552. doi:10.1177/0192513X19860171

Cicchetti, D., & Manly, J. (2001). Editorial: Operationalizing child maltreatment: Developmental processes and outcomes. *Development and Psychopathology, 13*, 755–757. doi:10.1017/S0954579401004011

Crittenden, P. (1993). An information-processing perspective on the behavior of neglectful parents. *Criminal Justice and Behavior, 20,* 27–48. doi:10.1177/0093854893020001004

Crouch, J. L., Irwin, L. M., Wells, B. M., Shelton, C. R., Skowronski, J. J., & Milner, J. S. (2012). The Word Game: An innovative strategy for assessing implicit processes in parents at risk for child physical abuse. *Child Abuse & Neglect, 36,* 498–509. doi:10.1016/j.chiabu.2012.04.004

Dadds, M. R., Mullins, M. J., McAllister, R. A., & Atkinson, E. (2003). Attributions, affect, and behavior in abuse-risk mothers: A laboratory study. *Child Abuse & Neglect, 27*, 21–45. doi:10.1016/S0145-2134(02)00510-0

Dotsch, R., & Wigboldus, D. H. J. (2008). Virtual prejudice. *Journal of Experimental Social Psychology, 44*, 1194–1198. doi:10.1016/j.jesp.2008.03.003

Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives, 38*, 105–123.

Farc, M. M., Crouch, J. L., Skowronski, J. J., & Milner, J. S. (2008). Hostility ratings by parents at risk for child abuse: Impact of chronic and temporary schema activation. *Child Abuse & Neglect, 32,* 177–193. doi:10.1016/j.chiabu.2007.06.001

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology, 54,* 297–327. doi:10.1146/annurev.psych.54.101601.145225

Gawronski, B., & Houwer, J. D. (2014). Implicit measures in social and personality psychology. In H. T. Reis, & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed.). New York: Cambridge University Press.

Gawronski, B., LeBel, E. P., Peters, K. R., & Banse, R. (2009). Methodological issues in the validation of implicit measures: Comment on De Houwer, Teige-Mocigemba, Spruyt, and Moors (2009). *Psychological Bulletin, 135*, 369–372. doi:10.1037/a0014820

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4–27. doi:10.1037/0033-295x.102.1.4

Haskett, M. E., Scott, S. S., Willoughby, M., Ahern, L., & Nears, K. (2006). The Parent Opinion Questionnaire and child vignettes for use with abusive parents: Assessment of psychometric properties. *Journal of Family Violence, 21*, 137–151. doi:10.1007/s10896-005-9010-2

Hiraoka, R., Crouch, J. L., Reo, G., Wagner, M., Milner, J. S., & Skowronski, J. J. (2014). Pain tolerance, pain sensitivity, and accessibility of aggression-related schemata in parents at-risk for child physical abuse. *Child Abuse & Neglect, 38,* 1840–1847. doi:10.1016/j.chiabu.2014.07.004

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Personality and Social Psychology Bulletin, 31*, 1369–1385. doi:10.1177/0146167205275613

Hogg, M. A., & Vaughan, G. M. (2017). *Social Psychology* (8th edition). New York, NY: Pearson.

Holden, G. W., & Buck, M. J. (2002). Parental attitudes toward child rearing. In M. H.

Bornstein (Ed.), *Handbook of parenting* (2nd ed., pp. 537–562). Mahwah, NJ: Erlbaum.

Jaffee, S. R., & Maikovich-Fong, A. K. (2011). Effects of chronic maltreatment and

maltreatment timing on children's behavior and cognitive abilities. *Journal of Child

Psychology and Psychiatry, 52,* 184−194. doi:10.1111/j.1469-7610.2010.02304.x

Jackson, Y., McGuire, A., Tunno, A. M., & Makanui, P. K. (2019). A reasonably large

review of operationalization in child maltreatment research: Assessment approaches

and sources of information in youth samples. *Child Abuse & Neglect*, *87*, 5−17.

doi:10.1016/j.chiabu.2018.09.016

Jobe, J. B. (2003). Cognitive psychology and self-reports: Models and methods. *Quality of

Life Research*, *12*, 219–227. doi:10.1023/A:1023279029852

Johnston, C., Belschner, L., Park, J. L., Stewart, K., Noyes, A., & Schaller, M. (2017).

Mothers' implicit and explicit attitudes and attributions in relation to self-reported

parenting behavior. *Parenting, 17*, 51–72, doi:10.1080/15295192.2016.1184954

Johnston, C., Park, J. L., & Miller, N. V. (2018). Parental cognitions: Relations to parenting

and child behavior. In M. R. Sanders & A. Morawska (Eds.), *Handbook of parenting

and child development across the lifespan* (pp. 395–414). Cham, Switzerland: Springer

International Publishing. doi:10.1007/978-3-319-94598-9_17

Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child

adjustment: A review. *Clinical Psychology Review, 25*, 341–363

doi:10.1016/j.cpr.2004.12.004

Kantor, G. K., Holt, M., & Straus, M. A. (2003). *The parent-report Multidimensional

Neglectful Behavior Scale.* Unpublished manuscript, Family Research Laboratory,

University of New Hampshire, Durham, NH.

Kim, K., Mennen, F. E., & Trickett, P. K. (2017). Patterns and correlates of co-occurrence among multiple types of child maltreatment. *Child & family social work*, *22*, 492–502. doi:10.1111/cfs.12268

Kline, R. (2005). *Principles and practice of structural equations modeling* (2nd Ed.). London, UK: Guilford Press.

Lanktree, C. B., Gilbert, A. M., Briere, J., Taylor, N., Chen, K., Maida, C. A., & Saltzman, W. R. (2008). Multi-informant assessment of maltreated children: Convergent and discriminant validity of the TSCC and TSCYC. *Child Abuse & Neglect, 32*, 621–625. doi:10.1016/j.chiabu.2007.10.003.

Lau, A. S., Valeri, S. M., McCarty, C. A., & Weisz, J. R. (2006). Abusive parents' reports of child behavior problems: Relationship to observed parent–child interactions. *Child Abuse & Neglect, 30*, 639–655. doi:10.1016/j.chiabu.2005.11.009

Mah, J. W. T., & Johnston, C. (2008). Parental social cognitions: Considerations in the acceptability of and engagement in behavioral parent training. *Clinical Child and Family Psychology Review, 11*, 218–236. doi:10.1007/s10567-008-0038-8

Mayseless, O. (2006). Studying parenting representations as a window to parents' internal working model of caregiving. In O. Mayseless (Ed.), *Parenting representations: Theory, research, and clinical implications* (pp. 3–40). New York, NY: Cambridge University Press. doi:10.1017/CBO9780511499869

McElroy, E. M., & Rodriguez, C. M. (2008). Mothers of children with externalizing behavior problems: Cognitive risk factors for abuse potential and discipline style and practices. *Child Abuse & Neglect, 32*, 774–784. doi:10.1016/j.chiabu.2008.01.002

Mesman, J., Branger, M., Woudstra, M. L., Emmen, R., Asanjarani, F., Carcamo, R., ... & Alink, L. (2020). Crossing boundaries: A pilot study of maternal attitudes about child

maltreatment in nine countries. *Child Abuse & Neglect*, *99*, 104257.

doi:10.1016/j.chiabu.2019.104257

Milner, J. S. (1986). *The child abuse potential inventory: Manual* (2nd Edition). Webster,

NC: Psytec.

Milner, J. (2003). Social information processing in high-risk and physically abusive parents.

Child Abuse & Neglect, 27, 7–20. doi:10.1016/S0145-2134(02)00506-9

Narciso, I., Relvas, A. P., Ferreira, L. C., Vieira-Santos, S., Fernandes, M., Santa-Bárbara, S., &

Machado, I. (2018). Mapping the "good mother" – Meanings and experiences in

economically and socially disadvantaged contexts. *Children and Youth Services Review,*

93, 418–427.

Neves, A. M., & Lopes, D. (2013). A negligência parental no contexto do mau trato infantil:

Um contributo para a delimitação e definição do conceito e sua medida no âmbito da

prevenção primária. In M. M. Calheiros & M. V. Garrido (Eds.), *Crianças em risco e*

perigo: Contextos, investigação e intervenção, Vol. 3 (pp. 145–190). Lisboa: Edições

Sílabo.

Nix, R. L., Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Pettit, G. S., & McFadyen-

Ketchum, S. A. (1999). The relation between mothers' hostile attribution tendencies and

children's externalizing behavior problems: The mediating role of mothers' harsh

discipline practices. *Child Development, 70*, 896– 909. doi:10.1111/1467-8624.00065

Okagaki, L., & Bingham, G. E. (2005). Parents' social cognitions and their parenting

behaviors. In T. Luster & L. Okagaki (Eds.), *Parenting: An ecological perspective* (2nd

ed., pp. 3–33). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Portwood, S. G. (2006). Self-report approaches. In M. M. Feerick, J. F. Knutson, P. K.

Trickett, & S. M. Flanzer (Eds.), *Child abuse and neglect: Definitions, classifications,*

and a framework for research (pp. 233–253). Baltimore, MD: Paul H. Brookes.

Radford, L., Corral, S., Bradley, C., & Fisher, H. L. (2013). The prevalence and impact of child maltreatment and other types of victimization in the UK: Findings from a population survey of caregivers, children and young people and young adults. *Child Abuse & Neglect, 37*, 801–813. doi:10.1016/j.chiabu.2013.02.004

Rodrigo, M. J., León, I., Quiñones, I., Lage, A., Byrne, S., & Bobes, M. A. (2011). Brain and personality bases of insensitivity to infant cues in neglectful mothers: An event-related potential study. *Development and Psychopathology, 23*, 163–176. doi:10.1017/S0954579410000714

Rodriguez, C. M. (2018). Predicting parent-child aggression risk: Cognitive factors and their interaction with anger. *Journal of Interpersonal Violence, 33*, 359–378. doi:10.1177/0886260516629386

Rodriguez, C. M., & Richardson, M. J. (2007). Stress and anger as contextual factors and preexisting cognitive schemas: Predicting parental child maltreatment risk. *Child Maltreatment, 12*, 325–337. doi:10.1177/1077559507305993

Rodriguez, C. M., & Tucker, M. C. (2015). Predicting maternal physical child abuse risk beyond distress and social support: Additive role of cognitive processes. *Journal of Child and Family Studies, 24*, 1780–1790. doi:10.1007/s10826-014-9981-9

Rodriguez, C. M., Smith, T. L., & Silvia, P. J. (2016). Multimethod prediction of physical parent-child aggression risk in expectant mothers and fathers with social information processing theory. *Child Abuse & Neglect, 51*, 106–119. doi:10.1016/j.chiabu.2015.10.028

Rudy, D., & Grusec, J. E. (2006). Social cognitive approaches to parenting representations. In O. Mayseless (Ed.), *Parenting representations: Theory, research, and clinical implications* (pp. 79–106). New York, NY: Cambridge University Press. doi:10.1017/CBO9780511499869

Shepherd, H. (2019). Methods for studying the contextual nature of implicit cognition. In W. H. Brekhus & G. Ignatow (eds.), *The Oxford handbook of cognitive sociology*. Oxford, UK: Oxford University Press. doi: 10.1093/oxfordhb/9780190273385.013.20

Sigel, I. E., & McGillicuddy-DeLisi, A. V. (2002). Parent beliefs are cognitions: The dynamic belief systems model. In M. H. Bornstein (Ed.), *Handbook of parenting: Being and becoming a parent, Vol. 3* (pp. 485–508). Mahwah, NJ: Lawrence Erlbaum.

Slep, A., & O'Leary, S. G. (1998). The effects of maternal attributions on parenting: An experimental analysis. *Journal of Family Psychology, 12*, 234–243. doi:10.1037/0893-3200.12.2.234

Slep, A. M. S., & O'Leary, S. G. (2007). Multivariate models of mothers' and fathers' aggression toward their children. *Journal of Consulting and Clinical Psychology, 75*, 739–751. doi: 10.1037/0022-006X.75.5.739

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the parent-child Conflict Tactics Scales: development and psychometric data for a national sample of American parents. *Child Abuse & Neglect, 22*, 249–270. doi:10.1016/s0145-2134(97)00174-9

Sturge-Apple, M. L., Rogge, R. D., Skibo, M. A., Peltz, J. S., & Suor, J. H. (2015). A dual-process approach to the role of mother's implicit and explicit attitudes toward their child in parenting models. *Developmental Psychology, 51*, 289–300. doi:10.1037/a0038650

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). New York: Harper Collins.

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2019). *Child*

Maltreatment 2017. Available from https://www.acf.hhs.gov/cb/research-data-technology/statistics-research/child-maltreatment.

Wechsler, D. (1997). *Wechsler Adult Intelligence Scale* (3rd ed.; Portuguese version, 2008). Lisboa: CEGOC-TEA.

Young, J. E., Klosko, J., & Weishaar, M. (2003). *Schema therapy: A practitioner's guide*. New York, NY: Guilford Press.

Table 1

Summary of Correlations, Means, Standard Deviations and Range for Study Variables (n = 161)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	*M (SD)*	Range
1. Positive – Acc	-											.97 (.03)	.82 – 1
2. Positive – Rt	.021	-										975.77 (248.82)	500.32 – 1703.79
3. Negative – Acc	**.198****	**-.204****	-									.91 (.11)	.53 – 1
4. Negative – Rt	-.072	**.879****	**-.187***	-								939.27 (229.39)	482.19 – 1633.26
5. AAPI.	-.034	**.431****	**-.260****	**.430****	-							2.55 (.56)	1.23 – 4.35
6. SR Abuse	-.123	.008	.000	.084	.136	-						2.01 (1.28)	0 – 6
7. SR Neglect	-.027	.092	.099	.128	**.175***	**.313****	-					1.57 (.36)	1 – 2.82
8. PR Abuse	-.048	.100	-.014	.142	.055	.075	.102	-				1.17 (.41)	1 – 3.50
9. PR Neglect	-.037	**.185***	**-.252****	**.270****	**.256****	.131	.108	**.527****	-			1.41 (.59)	1 – 3.73
10. Intellectual functioning	.100	**-.618****	**.339****	**-.630****	**-.538****	.109	.019	-.069	**-.304****	-		83.88 (27.24)	20 – 155
11. SES	.045	**-.409****	**.293****	**-.404****	**-.484****	-.044	-.030	**-.224****	**-.417****	**.566****	-	2.79 (.67)	1 – 4.33

Note. Acc = accuracy; Rt = response time; SR = self-report; PR = professionals-report.

* $p < .05$.

** $p < .01$.

Table 2

GLM Table for Explicit Parental Attitudes (AAPI)

Self-report	b	t	p	η_p^2		b	t	p	η_p^2
SR Abuse	0.050	1.210	.228	.008	SR Abuse	0.060	1.761	.080	.017
SR Neglect	0.082	1.977	.049	.020	SR Neglect	0.076	2.213	.028	.026
					Intelectual func.	-0.239	-5.923	<.001	.161
					SES	-0.124	-3.070	.002	.049
Professionals-report	b	t	p	η_p^2		b	t	p	η_p^2
PR Abuse	-0.068	-1.354	.177	.010	PR Abuse	-0.040	-0.940	.349	.005
PR Neglect	0.176	3.840	<.001	.072	PR Neglect	0.033	0.782	.435	.003
					Intelectual func.	-0.223	-5.409	<.001	.138
					SES	-0.133	-3.115	.002	.051

Note. SR = self-report; PR = professionals-report; SES = socioeconomic status.

Table 3

GLM Table for Positive-Implicit Parental Attitudes

Accuracy

Self-report

Within-subjects effects		F	p	η_p^2					
Stimulus type		41.389	<.001	.177					
Stimulus type*SR Abuse		1.382	.252	.007					
Stimulus type*SR Neglect		0.480	.619	.002					
Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
SR Abuse	-0.003	-1.525	.129	.012	SR Abuse	-0.003	-1.478	.141	.012
SR Neglect	0.001	0.353	.725	.001	SR Neglect	0.001	0.419	.676	.001
					Intelectual func.	0.004	1.727	.086	.016
					SES	-0.002	-0.720	.473	.003

Professionals-report

Within-subjects effects		F	p	η_p^2					
Stimulus type		40.643	<.001	.175					
Stimulus type*PR Abuse		0.168	.845	.001					
Stimulus type*PR Neglect		0.527	.591	.003					
Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
PR Abuse	-0.002	-0.609	.544	.002	PR Abuse	-0.002	-0.830	.408	.004
PR Neglect	0.000	-0.163	.871	.000	PR Neglect	0.000	0.146	.884	.000
					Intelectual func.	0.004	1.619	.107	.014
					SES	-0.002	-0.677	.499	.003

Response latencies

Self-report

Within-subjects effects	F	p	η_p^2
Stimulus type	202.159	<.001	.518

		F	p	η_p^2		b	t	p	η_p^2
	Stimulus type*SR Abuse	1.599	.204	.008					
	Stimulus type*SR Neglect	0.049	.952	.000					
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	SR Abuse	-5.596	-0.299	.766	.000	SR Abuse	7.291	0.481	.631	.001
	SR Neglect	24.459	1.297	.196	.009	SR Neglect	21.524	1.414	.159	.011
						Intelectual func.	-147.841	-8.146	<.001	.272
						SES	-19.132	-1.068	.287	.006
Professionals-report	Within-subjects effects	F	p	η_p^2					
	Stimulus type	205.687	<.001	.525					
	Stimulus type*PR Abuse	1.601	.203	.009					
	Stimulus type*PR Neglect	2.387	.093	.013					
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	PR Abuse	-0.485	-0.021	.983	.000	PR Abuse	12.200	0.648	.518	.002
	PR Neglect	46.049	2.160	.032	.024	PR Neglect	-12.322	-0.651	.516	.002
						Intelectual func.	-142.502	-7.824	<.001	.257
						SES	-24.796	-1.326	.187	.010

Note. SR = self-report; PR = professionals-report; SES = socioeconomic status.

Table 4

GLM Table for Negative-Implicit Parental Attitudes

Accuracy

Self-report	Within-subjects effects		F	p	η_p^2					
	Stimulus type		20.363	<.001	.095					
	Stimulus type*SR Abuse		0.225	.799	.001					
	Stimulus type*SR Neglect		4.013	.019	.020					
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	SR Abuse	-0.004	-0.458	.647	.001	SR Abuse	-0.004	-0.491	.624	.001
	SR Neglect	0.014	1.455	.147	.011	SR Neglect	0.015	1.654	.100	.015
						Intelectual func.	0.031	2.903	.004	.044
						SES	0.022	2.082	.039	.023
Professionals-report	Within-subjects effects		F	p	η_p^2					
	Stimulus type		20.329	<.001	.096					
	Stimulus type*PR Abuse		8.436	<.001	.042					
	Stimulus type*PR Neglect		16.152	<.001	.078					
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	PR Abuse	0.022	2.008	.046	.021	PR Abuse	0.020	1.816	.071	.018
	PR Neglect	-0.042	-4.143	<.001	.082	PR Neglect	-0.027	-2.504	.013	.033
						Intelectual func.	0.026	2.492	.014	.033
						SES	0.017	1.588	.114	.014

Response latencies

Self-report	Within-subjects effects	F	p	η_p^2
	Stimulus type	303.652	<.001	.645

						b	t	p	η_p^2
	Stimulus type*SR Abuse		0.949	.388	.006				
	Stimulus type*SR Neglect		1.618	.200	.010				
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	SR Abuse	10.218	0.582	.561	.002	SR Abuse	24.245	1.704	.090	.018
	SR Neglect	25.367	1.393	.166	.011	SR Neglect	15.514	1.046	.297	.007
						Intelectual func.	-143.838	-8.295	<.001	.305
						SES	-14.121	-0.832	.407	.004
Professionals-report	Within-subjects effects		F	p	η_p^2				
	Stimulus type		300.417	<.001	.644				
	Stimulus type*PR Abuse		0.245	.783	.001				
	Stimulus type*PR Neglect		0.793	.453	.005				
	Between-subjects effects	b	t	p	η_p^2		b	t	p	η_p^2
	PR Abuse	-4.393	-0.209	.835	.000	PR Abuse	4.572	0.261	.795	.000
	PR Neglect	64.391	3.075	.002	.054	PR Neglect	14.799	0.783	.435	.004
						Intelectual func.	-132.607	-7.648	<.001	.271
						SES	-15.480	-0.872	.384	.005

Note. SR = self-report; PR = professionals-report; SES = socioeconomic status.