

Do Parental Reflective Functioning and Parental Competence affect the socioemotional adjustment of children?

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Abstract

Parental reflective functioning refers to the parents' ability to reflect on their children's mental states, and is increasingly considered to be a key feature of competent parenting. However, to date, no study has empirically investigated this assumption. The main objective of the present study was therefore to investigate the mediating role of parental competence in the relationship between parental reflective functioning and children's socioemotional adjustment. We also investigated whether these relationships were similar for mothers and fathers. The study was carried out in a sample of 433 mothers and 113 fathers of infants aged from 2 to 36 months. Participants had to complete the Spanish version of the Perceived Parental Competence Scale, the Parental Reflective Functioning Questionnaire and the Ages & Stages Questionnaire. Results showed, as expected, that parental competence mediated the association between parental reflective functioning and infants' emotional adjustment. Multigroup analysis supported the invariance of the structural model across mothers and fathers. The implications of these results for pediatric and primary care are discussed.

Keywords: Parental reflective functioning, parental competence, socioemotional adjustment, fathers, mothers.

Highlights

- We investigated the role of Parental Reflective Functioning (PRF) and parental competence in children's socioemotional adjustment.
- Results indicate that parental competence mediated the association between PRF and infants' socioemotional adjustment in both mothers and fathers.
- These results provide further evidence for the importance of PRF for children's early socioemotional adjustment.

Introduction

Mentalizing, or reflective functioning, refers to the ability to think about one's own mental states and those of others, and to recognize how these mental states can affect behavior (Fonagy et al., 1991, 2002).

Parental reflective functioning (PRF) is defined as the ability of parents to “keep their child in mind”, that is, to recognize their children's mental states and to explain and give meaning to their behavior in terms of thoughts, desires, and expectations. This capacity allows parents to reflect upon not only their own internal mental experiences, but also those of the child (Author Blinded, 2017a; Author Blinded, 2017b; Mitjavila, 2013; Slade, 2005). Studies suggest that PRF helps parents to face stressful situations related to parenting in a more effective way (Camoirano, 2017; Turner et al., 2008).

Studies have shown that PRF is multidimensional and consists of at least three key dimensions, which have been termed Pre-mentalizing modes, Certainty about the mental states of the child, and Interest and Curiosity about the mental states of the child (Author Blinded, 2017a). *Pre-mentalizing modes* refers to (a) parents' lack of concern about their children's inner world, (b) difficulties in interpreting this inner world, and/or (c) a tendency to be completely certain about their children's mental states (Autor Blinded, 2016; Author Blinded, 2017b; Meins et al., 2001, 2012; Slade, 2005). This may cause parents to make inaccurate and hostile attributions about their children. By contrast, the *Certainty about mental states* dimension involves parents recognizing the opacity of their children's mental states, which is closely associated, although relatively distinct, from showing genuine interest and curiosity about the child's inner world (Burkhart et al., 2017; Author Blinded, 2017a; Author Blinded, 2015a). High scores on the subscale Certainty about mental states involve a tendency of parents to be overly certain about the mental states of their child, reflecting hypermentalizing or intrusive mentalizing, whilst low scores are presumed to reflect hypomentalizing, that is, a lack of certainty about the child's mental states (Author Blinded, 2017a). Finally, the Interest and curiosity in mental states scale assesses parents' interest in their children's inner world (Author Blinded., 2017a).

Studies on parenting to date have sought to understand the mental processes that occur in parent-child relationships and their impact on both parenting and the socioemotional adjustment of the infant (Author Blinded., 2013). In this context, several studies have shown that PRF is associated with feelings of parental competence (Author Blinded, 2018a; Rostad & Whitaker, 2016). Parental competence refers to parents' capacity to care for, educate, and protect their children. It is therefore defined as parental behaviours that

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entail responding appropriately to the needs of their children in order to ensure the children's healthy development (Garaigordobil & Machimbarrena, 2017; Lopes & Dixe, 2012). Parents can indeed be expected to be more likely to respond in appropriate and adaptive ways to their infant's needs if they have the ability to reflect on and understand the mental states that are behind their children's behaviour (Ordway et al., 2015).

In this regard, it has been suggested that parents with low levels of PRF may perceive themselves as low in parental competence (Author Blinded, 2018a; Slade, 2007). Indeed, parents with high levels of PRF typically show a greater degree of involvement and communication with their child, they practice more positive parenting styles, and are generally more satisfied with their parental role (Rostad & Whitaker, 2016). Consistent with these assumptions, several studies have shown a positive association between high levels of PRF and parents' capacity to regulate their own emotions concerning the care and upbringing of their child, as this allows them to put their own parenting experience into perspective (Grienberger et al., 2005; Sharp & Fonagy, 2008; Slade et al., 2005; Stacks et al., 2014)

Studies also suggest that parents who tend to be nonmentalizing in the relationship with their children show a greater tendency to confuse signs related to their children's anxiety (Author Blinded, 2015a). Likewise, difficulties tolerating or making sense of their children's emotions have an impact on the children's socioemotional adjustment because they lack the support of their primary caregivers in the acquisition of self-regulatory capacity (Camoirano, 2017). Hence, PRF seems to be a key aspect in promoting the capacity of emotional self-regulation in young children, especially in the case of negative affectivity (Fonagy et al., 2002). Specifically, in early development, when communication between parents and children is mainly nonverbal, the parents' ability to be sensitive to their infants' emotional states may be essential, critically affecting the children's present and future socioemotional adjustment (Grienberger et al., 2005). As discussed by Slade (2005), the way in which parents recognize their children's internal experience and the fact that they meaningfully relate these internal states to the children's behavior, especially in the case of affective behaviors such as crying or tantrums, helps the children regulate their inner world.

Most studies have suggested that there are differences between mothers and fathers in parenting. In this regard, it has been observed that fathers perceive themselves as having lower levels of parental competence and child care self-efficacy than mothers (Hudson et al., 2001; Lansford et al., 2011). To date, however, few studies have explored differences between mothers and fathers in terms of PRF (Benbassat &

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Priel, 2012; Lamb & Lewis, 2004; Author Blinded, 2017a). The majority of studies in this area have focused on the role of maternal PRF only (Camoirano, 2017; Author Blinded, 2017a). Moreover, the few studies that have investigated the role of paternal RF, have yielded inconclusive results (Arnott & Meins, 2007; Author Blinded, 2015b). Some studies found that fathers' RF is positively associated with child socioemotional adjustment (Buttitta et al., 2019; Lewis & Lamb, 2003). In one study, both maternal and paternal reflective functioning, measured before the infant is born, were prospectively associated with secure attachment of the child (Steele & Steele, 2008). These findings are consistent with several studies suggesting that fathers may be as important as mothers in determining children's cognitive, social and emotional adjustment of the child (Bronte-Tinkew et al., 2008; Cabrera et al., 2007; Lewis & Lamb, 2003; Sierau et al., 2011; Tamis-LeMonda et al., 2004). However, Arnott & Meins (2007) found that fathers tended to make more inappropriate mind-related comments than mothers, suggestive of problems with PRF. Author Blinded (2017c) similarly found that fathers scored higher than mothers on the prementalizing modes subscale of the PRFQ that taps into parents' tendency to make biased and malevolent attributions concerning their child. In addition, fathers showed less interest and curiosity in the mental states of the infant compared with mothers, again suggesting lower levels of PRF in fathers than mothers. These differences between mothers and fathers in PRF may be related to differences in the transition to parenthood between mothers and fathers, and their respective roles in parenting specifically (Author Blinded, 2017a). For instance, at least in Western cultures, mothers still tend to be the primary caregiver and spend more time with their infant compared to fathers.

In short, it seems that more reflective parents are likely to experience more positive interactions with their children, greater parental satisfaction, and be more involved and communicative with their children (Rostad & Whitaker, 2016). This, in turn, fosters better mentalizing abilities in children, greater social competence and fewer internalizing and externalizing difficulties (Allen et al., 2008; Benbassat & Priel, 2012; Camoirano, 2017; Fonagy et al., 2007; Author Blinded, 2017a; Rosso et al., 2015; Scopesi et al., 2015; Sharp et al., 2006; Sharp & Fonagy, 2008).

Hence, although studies suggest that PRF may be related to parental competence, currently no studies have directly tested whether parental competence is indeed a mediator in the relationship between fathers' and mothers' PRF and children's socioemotional adjustment.

The Present Study

The present study therefore aimed to contribute to the understanding of the role of PRF and parental competence in children's socioemotional adjustment. Specifically, we investigated whether parental competence mediated the relationship between PRF and children's socioemotional adjustment. The second aim was to investigate whether there were differences between mothers and fathers in that relationship. We expected a positive and significant association between the positive aspects of PRF (interest and curiosity in, and the ability to recognize the opacity of, mental states) and parental competence, and that parental competence would be positively related to better emotional adjustment in children. In contrast, we expected parents with lower levels of mentalizing, as expressed in the use of pre-mentalizing modes, would show poorer parental competence, which in turn was expected to be associated with greater difficulties in their infants' socioemotional adjustment. Finally, we explored whether these associations were invariant across mothers and fathers.

Method

Participants

The sample consisted of 433 mothers and 113 fathers with infants aged from 2 to 36 months. The mothers and fathers included in this study were not parents of the same child, and hence belonged to different samples to avoid dependency in the data (with scores for mothers and fathers being unrelated to each other). In addition, most studies focus on the role of RF of mothers, despite some studies suggesting that fathers' RF might be important as well (Benbassat & Priel, 2015; Buttitta et al., 2019; Steele & Steele, 2008). Therefore, the present study focused on RF in both fathers and mothers.

The mean age of infants was 15.87 months ($SD = 7.01$). The gender of the children was roughly equally divided, with 285 boys (52.2%) and 261 girls (47.8%). The mothers' mean age was 36.23 years ($SD = 3.85$; range 18-48) and that of the fathers was 37.85 years ($SD = 3.96$; range 29 - 49). Most of the participants, both mothers (95.8%) and fathers (96.3%), had Spanish nationality, and were in two-parent families (88% of the mothers and 95.6% of the fathers). In terms of the parents' level of education, 68.5% of the mothers and 54.6% of the fathers had higher education. With regard to employment status, 82% of the mothers and 93.7%

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of the fathers were in full-time or at least part-time employment. Mothers and fathers differed significantly in educational level ($\chi^2 [5] = 15.07, p = .01$) (see Table 1).

[insert Table 1]

Procedures

Participants were recruited through kindergartens in October 2017. All parents received a letter describing the study and its objectives. In total, 82 kindergartens in the three regions of the Basque area were visited by a research assistant; when parents agreed to participate [433 out of 2,849 mothers (16%), 113 out of 2,849 fathers (4%)], after providing written informed consent, they were requested to complete a booklet of questionnaires at home. Approximately 15 days later, the questionnaires were collected at the kindergartens. Participation was entirely voluntary, full anonymity was guaranteed, and participants were told they could stop their participation in the study at any time. There was no economic remuneration for participating in the study. The project was approved by the Research Ethics Committee of the Institution (ETK-22/16-17).

Instruments

The *Parental Reflective Functioning Questionnaire* (PRFQ; Author Blinded, 2017a) consists of 18 items divided into three subscales: Pre-mentalizing modes (PM), which attempts to gauge nonmentalizing parental states; Certainty about mental states (CMS), which includes items related to the parents' identification of the fact that their children's mental states are opaque; and Interest and curiosity (IC), which attempts to assess parents' genuine interest in or curiosity about their children's mental states. Examples of items in the PRFQ are "The only time that I am sure about what my child wants is when he/she smiles at me", "I always know what my child wants", and "I like to think about the reasons for the way my child behaves". The scale is rated on a 7-point Likert scale that ranges from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The reliability indices of each subscale in the original study were: PM = .70, CMS = .82, and IC = .75 (Author Blinded, 2017a). The Spanish version (Author Blinded, 2020) showed an adequate fit, with the root mean square error of approximation (RMSEA) = .051, goodness-of fit-index (GFI) and the comparative fit index (CFI) above and equal to .90 (GFI = .94, CFI = .90). The Cronbach's alphas of the subscales of the Spanish version were: PM: $\alpha = .60$; CMS: $\alpha = .77$; and IC: $\alpha = .66$ (acceptable value $\geq .60$; Grady & Wallston, 1988)

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and McDonald's omega was: PM: $\omega = .66$; CMS: $\omega = .78$; and IC: $\omega = .67$ (acceptable value $\geq .65$; Katz, 2006).

The Spanish version of the *Scale of Perceived Parental Competence – version for fathers/mothers* (ECPP-p); (Bayot et al., 2005) consists of 22 items divided into five factors: Parental School Involvement, Personal Dedication, Shared Leisure, Advice and Guidance provided by the parents, and Assumption of the Parental Role. Items are rated on a 4-point Likert scale ranging from 0 (*It never or very rarely happens*) to 3 (*It always happens*). Examples of items in this scale are “I go to places where there are more children to promote my child's relationships”, “I dedicate some time every day to talk to or play with my child”, and “I am very aware of the change that my family has experienced with the arrival of my children”. The total scale had adequate internal consistency in the original study ($\alpha = .86$) (Bayot et al., 2005), and in the present study the internal consistency was adequate ($\alpha = .87$; $\omega = .89$).

The *Ages & Stages Questionnaires: Socio-emotional, Second Edition* (ASQ:SE-2; (Squires et al., 2015) is a tool for monitoring children, completed by the parents or primary caregivers. It seeks to identify children who may be at risk of social or emotional problems. However, it is not a diagnostic tool. The ASQ:SE-2 contains nine questionnaires that vary depending on the child's age. It evaluates seven key areas of development: Self-Regulation, Conformity, Adaptive Functioning, Autonomy, Affect, Social Communication, and Interaction with others. Examples of items in the questionnaires are “Do you take more than half an hour to feed your child?”, “Does your child locate you by sight to make sure you're close by when he/she is exploring new places?”, and “Does your child like people to lift him/her up and hug him/her?”. Items are rated on an 11-point Likert scale ranging from 0 (*most of the time*) to 10 (*rarely or never*). The reliability indices in the original study ranged from .71 to .90 (Squires et al., 2015). In the present study, Cronbach's alpha ranged from .52 to .83 and McDonald's omega ranged between .61 and .86. To obtain the global socioemotional adjustment scores, a total scale per age range was calculated based on the mean of scores in the domains of Self-Regulation, Conformity, Adaptive Functioning, Autonomy, Affect, Social Communication, and Interaction with others.

Data Analysis

First, Pearson correlations were calculated between all target variables. To interpret the strength of the relationships between these variables, we used Cohen's (1988) criteria, according to which a Pearson correlation below .10 is small, up to .30 is medium, and .50 or above is high.

Second, in order to compare scores between mothers and fathers an independent samples *t*-test was conducted. To interpret the effect size of the differences we used Cohen's *d* (1988) criteria, according to which values of *d* below .20 are small, up to .50 are moderate, and .80 are above is large.

Next, Structural Equation Modelling using AMOS (Arbuckle, 2014) was used to investigate the fit of the proposed theoretical model (see also Figure 1). For the analyses, the three subscales of the PRFQ were included, whilst for the ASQ:SE-2 and ECPP-p, only the total scales were used. Specifically, three alternative models were tested. In the first model, PRF, parental competence, and the child's socioemotional adjustment variables were included, and to test mediation, both direct and indirect effects were also included from PRF to children's socioemotional adjustment. The second model included only the indirect effects. In the third model, we included direct effects following suggestions made by AMOS based on modification indices. To evaluate the goodness of fit, we used the chi-squared test for equality of matrices, which should be nonsignificant or have low values, and the ratio between the chi-squared and the degrees of freedom of the model (χ^2/df), which should have a value < 3 (Kline, 2005; Tabachnick & Fidell, 2001). However, the chi-squared is very sensitive to the sample size, so we also used the RMSEA and its 90% confidence interval, for which values between .05 and .08 are acceptable and values lower than .05 are considered very good. We also used the GFI and the CFI, whose values should be higher than .95 (Hu & Bentler, 1999). In addition, we used the Wald test, which shows whether the alternative model significantly increases or reduces of the fit compared with the reference model, using the chi-squared difference between models with degrees of freedom equal to the difference of the parameters of the models (Wald, 1945). We also calculated a total effect (*c*), direct effect (*c'*), and bootstrapped bias-corrected 95% confidence intervals of the indirect effect (*ab*) using the PROCESS macro in SPSS (Hayes, 2012). If these confidence intervals do not include zero, the indirect effect is significant.

Finally, we tested whether the final obtained model was invariant across fathers and mothers, using multigroup analysis with maximum likelihood estimation. For testing for significant differences between

groups, we analyzed the significance of the difference of the chi-squared values for each model. Likewise, we analyzed the specific differences for each of the relations established within the final model through critical ratio indexes.

Results

Descriptive features of participants and gender differences

Means and standard deviations of PRF, parental competence, and socioemotional adjustment are reported in Table 2. There were significant sex differences in the PM and IC subscales of the RFQ and for parental competence. Fathers scored higher than mothers on pre-mentalizing modes. In addition, mothers showed higher levels of interest and curiosity in mental states and parental competence than fathers. The effect sizes of these differences were moderate.

[insert Table 2]

Zero-Order Correlations

All subscales of the PRFQ, both in the total sample and in fathers and mothers separately, were significantly correlated with parental competence in the expected direction (see Table 2).

CMS was positively correlated with parental competence both in the total sample and in fathers and mothers separately. These correlations ranged from $r = .14$ to $r = .28$ (all $ps < .001$). IC was positively associated with parental competence both in the total sample ($r = .20, p < .001$) and in fathers ($r = .31, p < .001$) and mothers ($r = .15, p < .05$) separately. PM was also moderately negatively correlated with parental competence in the total sample and in fathers and mothers separately, with correlations between the two dimensions ranging from $r = -.29$ to $r = -.15$ (all $ps < .05$).

All the subscales of the PRFQ were also related to children's socioemotional adjustment: CMS ($r = .17, p < .001$) and IC ($r = .10, p < .05$) positively, and PM negatively ($r = -.29, p < .001$), in the total sample. CMS was not correlated with the children's socioemotional adjustment in the fathers, but in mothers, there was a positive association ($r = .16, p < .001$). PM was negatively associated with children's socioemotional adjustment in both fathers ($r = -.28, p < .001$) and mothers ($r = -.28, p < .001$). Finally, fathers' IC was

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positively associated with children's socioemotional adjustment ($r = .20, p < .05$), while there was no such association for mothers. These associations were small to moderate.

Finally, parental competence was positively and moderately associated with children's socioemotional adjustment both in the total sample ($r = .28, p < .001$) and in fathers ($r = .38, p < .001$) and mothers ($r = .25, p < .001$) separately. These associations were moderate to high (see Table 2).

Structural Equation Modeling

The first model was fully saturated and did not provide a good fit to the data ($RMSEA > .08$); nor did the second model (see Table 3). Modification indices suggested to add the direct effect of PM on socioemotional adjustment. This model fitted significantly better than Model 2 ($\Delta\chi^2[1] = 33.57, p < .001$) and, as shown in Table 3, it increased the parsimony of Model 1 without decreasing the fit to the data.

[insert Table 3]

As Figure 1 shows, parental competence had a positive and significant effect on children's socioemotional adjustment ($\beta = .23, p < .001$). Both CMS ($\beta = .14, p < .001$) and IC ($\beta = .15, p < .001$) had a positive and significant effect on parental competence. By contrast, PM had a negative and significant direct effect on children's socioemotional adjustment ($\beta = -.24, p < .001$).

All indirect effects of the three subscales of parental reflective functioning were significant, since the confidence interval of the indirect effect did not include zero (see Figure 1).

[insert Figure 1]

Table 4 shows the goodness-of-fit of the final model tested for invariance across mothers and fathers. As can be seen in Table 4, this model provided a good fit for both fathers ($GFI = .99; CFI = 1.00; RMSEA = .000$) and mothers ($GFI = .99; CFI = .96; RMSEA = .072$).

[insert Table 4]

The results presented in Figure 2 show that PRF is associated with children's socioemotional adjustment through parental competence in both fathers and mothers. The relationships are slightly stronger in

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fathers than in mothers, with the exception of the relationship between PM and children's socioemotional adjustment, which was almost identical in mothers and fathers.

[insert Figure 2]

Finally, models for mothers and fathers were simultaneously evaluated based on a multigroup analysis. The chi-square difference was non-significant ($\Delta\chi^2(5) = 6.61, p = .25$). This means that the model was invariant across mothers and fathers. Similarly, the critical ratio index showed that there are no differences between fathers and mothers.

Discussion

The present study aimed to examine the potential mediating role of parental competence in the relationship between PRF and the socioemotional adjustment of infants aged from 2 to 36 months. The second aim was to investigate whether this relationship was similar for mothers and fathers.

Results largely confirmed our assumptions. That is, PRF was related to socioemotional adjustment not only directly but also indirectly, as parents with higher levels of interest and curiosity and who could recognize the opacity of their children's mental states showed higher levels of parental competence, which, in turn, was positively associated with children's socioemotional adjustment. In contrast, parental pre-mentalizing modes, as expected, were negatively associated both directly and indirectly with children's socioemotional adjustment. These associations were shown to be invariant for both fathers and mothers.

These findings provide further evidence for the assumption that parents who show genuine interest and curiosity about their children's mental states and recognize the opacity of their children's mental states also respond in a more appropriate way to the needs of their children. In addition, they show a greater capacity to care for and educate their children, and this, in turn, is associated with better socioemotional adjustment of the children. This is consistent with studies that found that low levels of PRF were associated with maladaptive maternal behavior (Grienberger et al., 2005). It seems that better PRF makes parents feel more secure in their parental role (Grienberger et al., 2005). Rostad & Whitaker (2016) suggested that parents with high levels of PRF can enjoy more positive interactions with their children and, consequently, they report greater satisfaction as parents. However, mothers who do not feel capable of behaving

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adequately—for example, when calming their child—will make fewer real attempts to do so and will give up sooner; this, in turn, will confirm their negative perception of their parenting skills, increasing their negative feelings (Farkas Klein, 2008). Similarly, Weaver et al. (2008) linked parental competence perceived by mothers with positive parenting elements such as parental support, sensitivity, warmth in the interaction, and bonding between mother and child. Parents being sensitive and attuned to the needs of their children is a key aspect of children's socioemotional adjustment, as it allows them to develop their own capacity for emotion regulation (Camoirano, 2017; Esbjørn et al., 2013; Heron-Delaney et al., 2016; Author Blinded, 2018b; Rostad & Whitaker, 2016; Smaling et al., 2017).

In the current study, as expected, PM showed both a direct and an indirect effect on socioemotional adjustment, suggesting that parents' inability to hold their child's mental states in mind affects both parental competence and children's emotional adjustment. This result can be explained by the findings of other studies in which pre-mentalizing modes were found to be associated with a reduction in maternal sensitivity, which, in turn, may negatively affect children's socioemotional adjustment (Grienenberger et al., 2005; Author Blinded, 2018c). Having an inaccurate sense of the child's needs may lead to more negative feelings of competence in the parenting role, which could ultimately affect parents' feelings about their child and their relationship with the child (Burkhart et al., 2017). PM, even in community samples as in the present study, thus appears to tap into maladaptive thoughts and feelings of parents that seem to have a broad negative impact on children's socioemotional adjustment, whilst the CM and IC dimensions seem to be predictive of more specific parenting behaviours and specific features of child socioemotional adjustment. For instance, studies have shown that CM and IC were related to the persistence of parents in a simulated baby task (Author Blinded, 2013), the development of secure attachment (Author Blinded, 2017a) and children's theory of mind development (Meins et al., 2002). Moreover, high levels of CM and IC have also been related to development of insecure attachment (Author Blinded, 2017a). Further research in at risk samples is therefore needed, as both CM and IC may play an even greater role in predicting child maladaptation as in community samples.

Regarding gender differences, in this study the mothers scored higher on the IC subscale of the PRFQ and parental competence, while fathers showed a higher level of pre-mentalizing modes. These results are with results of other studies (Arnott & Meins, 2007; Author Blinded, 2017c; Author Blinded, 2018b). Fathers might have more difficulties than mothers in establishing mind-minded interactions with their child,

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showing less interest in understanding their children's emotional states and being more focused on concrete play interactions with children compared with mothers (Arnott & Meins, 2007; Esbjørn et al., 2013; Lamb & Lewis, 2004; Steele & Steele, 2005; Stover & Kiselica, 2014). Another possible explanation could be that mothers tend to spend more time alone with the child than fathers and, therefore, mothers have more opportunities than fathers to develop their capacity to mentalize in relation to the child (Arnott & Meins, 2007; Author Blinded, 2017c; Author Blinded, 2018b).

The model proposed in this study was invariant across mothers and fathers. However, there was also evidence of a few differences between mothers and fathers in the association between PRF, parental competence, and child socioemotional adjustment. Specifically, relationships were slightly stronger in fathers, with the exception of the relationship between the PRFQ Pre-mentalizing subscale and children's socioemotional adjustment. Mothers' PRF explained very little of the variance in parental competence. This could be due to the high scores of mothers on the PRF, suggesting a "ceiling" effect, whereas there was more variability in levels of both PRF and parental competence in fathers. The association between pre-mentalizing modes and socioemotional adjustment was similar in mothers and fathers, which testifies to the potential maladaptive impact of parents' inability to reflect on their child's mental states and/or the biased nature of their thoughts and feelings about their child's inner world.

Overall, the fact that PRF was related to feelings of parental competence in a Spanish sample of parents provides preliminary evidence for the cross-cultural applicability of this concept, although further research in this area is definitely needed.

The results of this study should be interpreted cautiously because of some important limitations. First, this study was cross-sectional. Therefore, longitudinal studies are needed to increase our understanding of causal relationships, and possible bidirectional relationships in particular; which was not possible in the present study. Future studies are also needed in this context to explore whether child characteristics (gender, age, temperament) and sociodemographic characteristics of parents (educational background) could affect PRF.

Second, this study relied on self-report questionnaires only. Future research on the relationship between PRF and parental competence is needed using interview methods such as the Parent Development

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Interview (PDI, Slade et al., 2004) or the Maternal Mind Mindedness scale as scored on parent-infant play interactions (Meins & Fernyhough, 2015).

Third, this was not a representative sample of families attending kindergartens in the Basque country. Moreover, it is important to note that the participation of the fathers was lower than that of the mothers. This difference in participation may reflect the differential involvement still observed between fathers and mothers in parenting in Spain and in many other Western countries (Mota et al., 2019).

The homogeneity of the sample (families with similar sociodemographic characteristics) and the high levels of PRF observed in the sample suggest the possibility of selection bias. In future studies, it would be desirable to include high-risk families. It would also be interesting to extend the sample in order to analyze father–mother or father/mother–infant dyads.

Despite these limitations, these findings have important implications because they highlight the importance of PRF in parenting practice and children’s early socioemotional adjustment. We recommend that health professionals linked to primary care and pediatrics (nurses, doctors, psychologists) pay special attention to this construct in their daily work with families (Ordway et al., 2014) and develop their sensitivity towards the identification of fathers/mothers who use pre-mentalizing modes in the relationship with their children, in order to help prevent its potentially harmful effect on children’s socioemotional adjustment.

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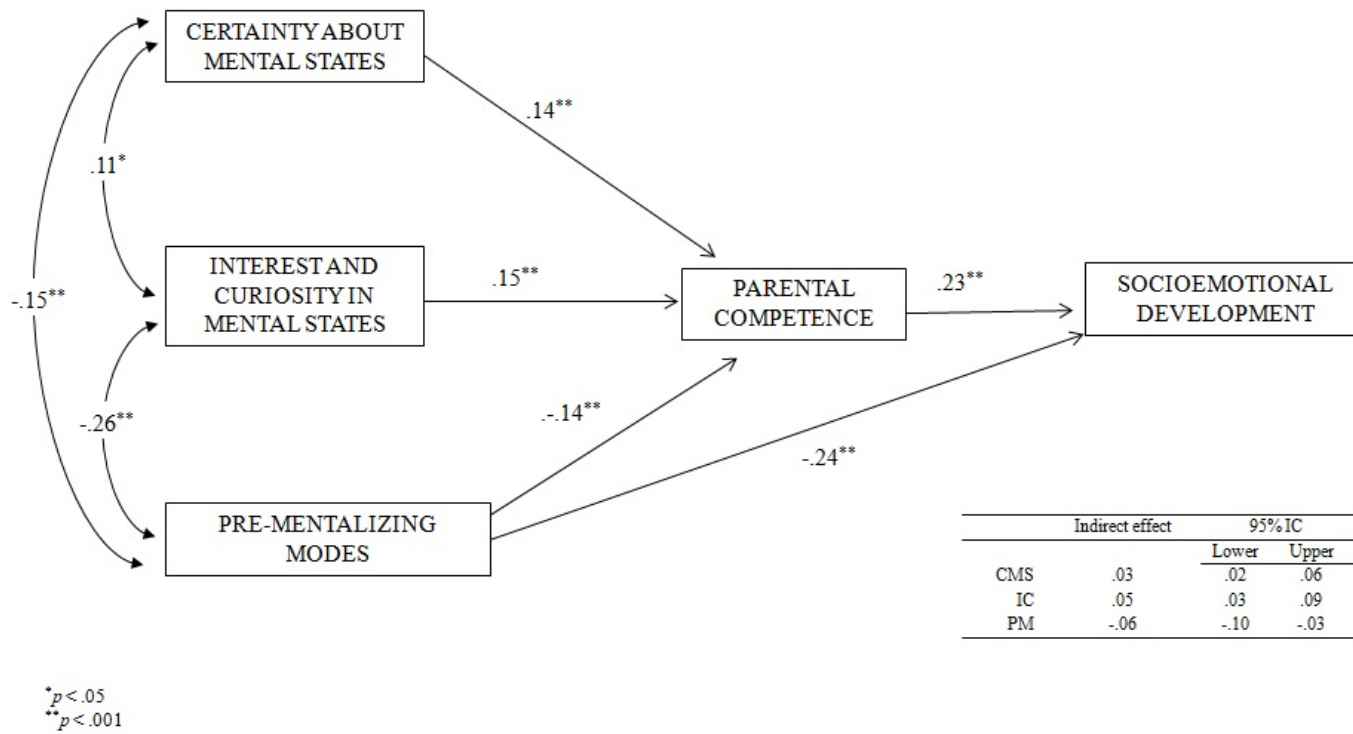


Figure 1. Structural model corresponding to the final model proposed by the study.

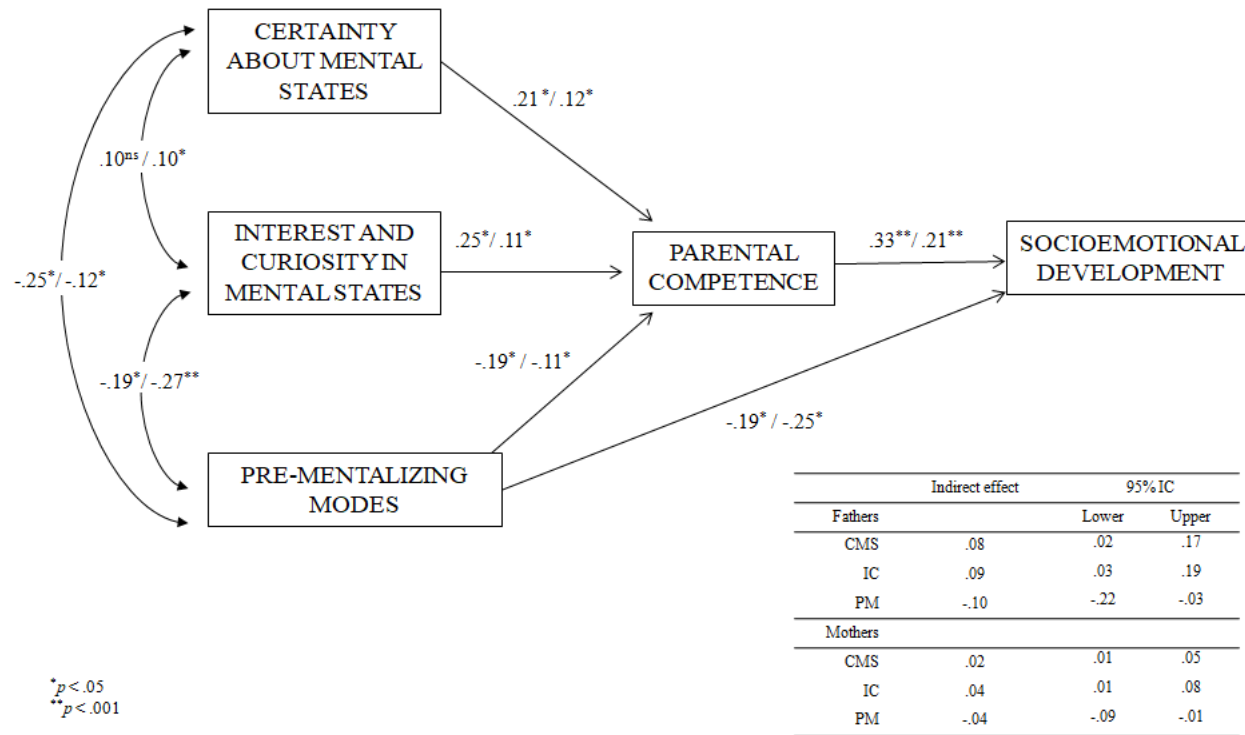


Figure 2. Model of the study for fathers (left) and mothers (right)

Table 1.

Sociodemographic characteristics of the study sample.

Parameter	Mothers (n = 433)	Fathers (n=113)
Age – <i>M (SD)</i> in years	36.23 (3.85)	37.85 (3.96)
Spanish nationality (%)	95.8	96.3
Marital status (%):		
Two-parent families	88	95.6
Single	11.3	2.6
Separated/Divorced	0.5	1.8
Widowed	0.2	-
Educational level (%):		
Less than primary education	0.1	0.9
Primary studies	3	2.7
Secondary studies	25.2	39.1
Higher education (University, Master's degree and doctorate)	68.5	54.6
Other	3.2	2.7
Employment status (%):		
In employment	82	93.7

Unemployed	9.8	4.5
Sick leave	1.9	1.8
Only studies	0.9	-
Other situation	5.4	-
<hr/>		
Children		
Age – <i>M (SD)</i> in months	15.77 (7.11)	16.27 (7.02)
Gender		
Male (n) %	228 (52.7)	57 (50.4)
Female (n) %	205 (47.3)	56 (49.6)
<hr/>		

Table 2

Descriptive statistics, relationships between variables and gender differences.

	1			2			3			4			5			Mean (SD)			<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M			
1. CMS	1	1	1													3.88 (1.04)	3.72 (.94)	3.92 (1.06)	-1.87	.06	-
2. PM	-.15**	-.25**	-.12*	1	1	1										1.56 (.59)	1.70 (.65)	1.53 (.57)	2.78*	.01	.28
3. IC	.11*	.09	.10*	-.26**	-.19*	-.27**	1	1	1							5.82 (.78)	5.61 (.87)	5.87 (.75)	-3.26**	.00	.32
4. Competence	.18**	.28**	.14**	-.20**	-.29**	-.15**	.20**	.31**	.15*	1	1	1				73.08 (8.68)	70.44 (8.89)	73.77 (8.50)	-3.66**	.00	.38
5. Soc D	.17**	.17	.16**	-.29**	-.28**	-.28**	.10*	.20*	.06	.28**	.38**	.25**	1	1	1	1.44 (.78)	1.48 (.70)	1.43 (.79)	.77	.44	-

Note: The *t* analyses refer to the parents' gender comparison. Total = T; F = Fathers; M = Mothers; CMS = Certainty about mental states; PM = Pre-mentalizing modes;

IC = Interest and curiosity in mental states; Competence = Parental competence; Soc D = Socio-emotional development.

p* < .05. *p* < .001.

Table 3.

Goodness of fit indices of the models of the study hypothesis

	χ^2	<i>Df</i>	<i>P</i>	χ^2/df	RMSEA	90% CI	GFI	CFI	$\Delta\chi^2$
						RMSEA			
Model 1	.00	0	-	-	.18	.156, .201	1.00	1.00	-
Model 2	39.04	3	.00	13.01	.15	.109, .192	.97	.79	39.04**
Model 3	5.47	2	.06	2.73	.056	.000, .116	.99	.98	33.57**

Note: χ^2 = chi-square; *df* = degrees of freedom; *p* = probability; RMSEA = Root Mean Square Error of Approximation; RMSEA (90% CI) = RMSEA confidence interval; GFI = Goodness of fit index; CFI = Comparative fit index; $\Delta\chi^2$ = chi-square difference of Wald test with Model 1 as reference model.

***p* < .001.

Table 4.

Goodness of fit indices of the gender-based model of the study

	χ^2	<i>Df</i>	<i>P</i>	χ^2/df	RMSEA	90% CI	GFI	CFI
						RMSEA		
Fathers	.78	3	.67	.39	.00	.000, .142	.99	1.00
Mothers	6.43	2	.04	3.21	.07	.013, .137	.99	.96

Note: χ^2 = chi-square; *df* = degrees of freedom; *p* = probability; RMSEA = Root Mean Square Error of Approximation; RMSEA (90% CI) = RMSEA confidence interval; GFI = Goodness of fit index; CFI =