Parenting of Spanish mothers and fathers playing with their children at home

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Abstract

The aims of this study were to compare the parenting behaviors of mothers and fathers when evaluated in a free play situation at home and to study how these behaviors were related to the sociodemographic variables of the family. The study included 155 mothers and 155 fathers from the same families in Spain. The children (90 boys and 65 girls) were typically developing and were aged between 10 and 47 months old. The parents completed a sociodemographic questionnaire, and parenting behaviors in four domains (Affection, Responsiveness, Encouragement, and Teaching) were assessed from self-recorded videotapes, in accordance with the Spanish version of the PICCOLO. Our results showed both commonalities and differences between the mothers and fathers. The mean scores for the four parenting domains followed a similar pattern in both mothers and fathers: the highest mean score was in the Responsiveness domain, followed by the Affection, Encouragement, and the Teaching domains. Regarding the second aim, no differences were observed in parenting according to the child’s gender and the only domain related to the child’s age was mother’s Teaching. Mothers with a higher educational level scored higher on all parenting domains, except for Responsiveness. Family income was positively related to maternal Affection, Encouragement, and the total PICCOLO score, and to the father’s score in the Teaching domain. This study provides evidence that Spanish mothers and fathers show very similar strengths for promoting children’s development during interactions. These results are relevant to inform social public policies and family programs.

Introduction

Parenting is a key topic in research on child development, both from a theoretical point of view and due to its relevance in professional interventions addressed at improving children’s developmental processes and family well-being. Although parenting is a wide-ranging concept including many different aspects of childrearing such as parental styles, food and care provision, and parents’ beliefs about childrearing, education and development, some authors have
used terms such as “parenting”, “positive parenting” or “developing parenting” to refer specifically to the characteristics of mother/father-child dyadic interactions that promote child development [1, 2]. In this study, we will refer to “parenting” in this sense. Studies on men’s parenting are not only increasing but are also going beyond conceptualizations centered on the consequences of paternal absence, men’s economic contribution to the family, the father as a source of discipline, and the influence of a male role model. New visions of fathering are focusing on the father’s involvement and the role that fathers play in their children’s development, behavior, and academic achievement [3, 4]. Most studies on the interactions between fathers/mothers and children have been carried out in the United States, so we found it interesting to be able to provide data from European countries, particularly in those where, as in Spain, the involvement of fathers in the daily lives of children has increased in recent years, but where the model of father as provider and support to the mother as the main caregiver still predominates [5].

With the gradual disappearance of the patriarchal system [6], the incorporation of women into the labor market, the arrival of birth control methods and the legalization of divorce [7] the participation of mothers and fathers in parenting tasks in present-day Spain is far more balanced than in the past. The latest studies show that the involvement of fathers has increased in recent years [8], but this has not led to a decrease in the involvement of mothers. The profile of the involved father is a man with a high level of education, not married and with a partner in full-time employment [9]. Although policies promoting the balancing of family and work commitments in Spain have been relatively weak, in 2021 the duration of paternity leave was raised to the same level as maternity leave in a bid to support equality in parenting. Nonetheless, mothers continue to dedicate more time to childcare [10] and to carrying out more routine parenting tasks, while the most rewarding and socially valued activities tend to correspond to the father [11].

As Cabrera [12] pointed out, mothers and fathers show differences related to the ways they spend time with children. Fathers engage in play activities more frequently than mothers, while mothers tend to engage in more caregiving activities [13, 14]. Some studies have found that fathers tend to engage in more rough-and-tumble play, especially with their sons [13, 15, 16] and that they are more likely to encourage risk taking [17]. A recent review by Valloton [18] about mothers’ and fathers’ play concluded that mothers and fathers play in a very similar way with little babies, with fathers tending to engage in more highly arousing behaviors. In later infancy and toddlerhood, physical play is more common for fathers and symbolic play is more common for mothers. In the third year, both mothers and fathers (but especially mothers) engage in more symbolic play with daughters, while fathers engage in more physical play with boys.

Particularly at early ages, studies involving children with ages ranging from a few days to 3 years old tend to show no significant differences between the characteristics of the mothers’ and fathers’ parenting interactions [19, 20]. More recently, a study by Cerezo [21] using state-space dynamic analysis of mothers’ and fathers’ interactions with their children aged between 6 to 10 months, showed many more similarities than differences, in a sample characterized by low-SES. They analyzed responsive, intrusive, and protective behaviors. The only significant difference was that fathers were more active, having more back-and-forth sequences with their children per unit of time, while mothers showed more repetitions of the same dyadic event. These findings are in line with other previous studies that reported that fathers tend to be more stimulating and activating when interacting with children [22].

However, some studies have found differences between mothers’ and fathers’ behaviors when interacting with their children [23, 24]. Some researchers have reported that fathers show less responsive behaviors and more intrusiveness than mothers when interacting with their children [25–29]. In contrast, other studies found no differences between mothers and

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fathers with respect to responsivity [19, 30]. The above-mentioned review [18] concluded that there is consistent evidence that fathers show less responsive behaviors when interacting with their children at early ages. With respect to intrusiveness, the majority of studies reviewed by Valloton [18] found no differences between mothers and fathers [19]. As Hallers-Haalboom [23] pointed out, studies with comparable methods have reached different conclusions with respect to gender differences in responsivity. So, more research is needed to test the hypothesis that fathers are less sensitive and more intrusive than mothers when interacting with their children at early ages.

When interacting with their children, fathers’ talk has been shown to be more directive and informative than mothers, and to include more questions [31]. Some authors have interpreted these characteristics as suggesting that fathers are more goal-oriented than mothers when interacting with their young sons and daughters [23]. Different studies have shown that fathers talk less to children than mothers [24], but not all studies have found this difference [32]. With respect to qualitative characteristics, a study of Italian fathers and mothers reported more lexical diversity and a larger Mean Length of Utterance (MLU) in mothers [33], but the majority of the studies conducted in the United States have shown more similarities than differences in measures of syntactic and lexical complexity [32, 34]. Other studies have mentioned that fathers could be more challenging linguistic partners for young children, by asking more wh-questions and making more requests for clarification [32, 34], by producing more talk that goes beyond the text during book-reading [35] and by using more metatalk in book-reading interactions [36].

With respect to parenting and the child’s gender, a meta-analysis [37] found very little evidence to support the notion that parents interact in a different manner with their sons and daughters. A more recent study [38] found that fathers of daughters were more attentively engaged with their child, sang more to them, and used more analytical language and language related to sadness and the body than fathers of sons; in contrast, fathers of sons engaged in more rough-and-tumble play, and used language more focused on achievement. With regards to mothers, some studies have shown that they tend to be more sensitive to their daughters, although when the child presents certain behavioral problems, they have stronger reactions to girls than to boys [39]. Other studies have found that mothers talk more to their daughters than to their sons [31] and that they are more restrictive of physical risk-taking with daughters than with sons [40]. With respect to parental autonomy-supportive and controlling behaviors, a meta-analytic study [41] including boys and girls aged from 0 to 18 years found minimal differences between parental interactions according to the child’s gender. Fathers tended to be more restrictive and controlling with their sons than with their daughters, but the effect size was very small, being larger in the youngest group.

In summary, the literature reports both similarities and differences between mothers’ and fathers’ parental behaviors, with a tendency to find more similarities than differences [42, 43] and also more similarities than differences linked to the child’s gender [37, 41]. In general, both mothers and fathers tend to be affectionate, responsive, encouraging and cognitively and linguistically stimulating when interacting with their children [12, 13, 44] and mothers and fathers both make additive and complementary contributions to a child’s development. Nevertheless, more research is needed on this topic, in order to increase the diversity of the samples, considering sociodemographic variables and the families’ social and cultural contexts.

Present study

The present study aimed to analyze maternal and paternal parenting during free-play situations at home with typically developing young children in order to compare mothers’ and father’s behaviors, searching for commonalities and differences. We used the same
observational tool to assess mothers’ and fathers’ parental behaviors. Although many studies consider this a prerequisite for comparability, this is a condition that not all studies have met [45]. On the other hand, in the present study we focus on free-play situations rather than assessing parenting in a structured task. Free-play situations have been shown to be a context that generates a wider variety of parental behaviors, with parents using more complex language, and allows gender differences to emerge between mothers and fathers when interacting with their sons and daughters at home [18]. Thus, the present study focused on the following aims:

1. To explore how Spanish mothers and fathers of the same typically developing child interact with their son or daughter during free-play situations at home (affective behaviors, responsiveness, autonomy stimulation and non-intrusive behaviors, and cognitive and linguistic stimulation).

2. To analyze the relation between mothers’ and father’s parental behaviors and some sociodemographic variables related to the child and the parents.

Materials and methods

Participants

Participants were 155 mothers and 155 fathers from the same families. All of them were living in Spain. The children (n = 155) were aged between 10 months and 47 months old (M = 28.6, SD = 9.2). Thirty-two per cent of children were younger than 2 years old (10 to 23 months), 43% were 2 years old (24 to 35 months), and 25% were 3 years old (36 to 47 months). Ninety were male (58%) and 65 were female (42%). All children had been born in Spain. Only 3.2% were pre-term and required specialized medical attention at delivery (n = 5). At the time of the evaluation all children were healthy and with normative development as determined by their primary care pediatric history. According to the Bayley Scales of Infant Development (BSID-III) [46] children’s percentile scores ranged from 37 to 100 (M = 76.9, SD = 20.5) for cognition, from 18 to 100 (M = 66.5, SD = 27.9) for language, and from 21 to 100 (M = 69.8, SD = 24.6 for motor development). Most of them (n = 121) were attending a nursery or a pre-school center.

Mothers were aged between 22 and 47 years old (M = 35.0, SD = 4.1) and 93.9% were from Spain. One per cent of the mothers had received only elementary schooling, 23% had completed secondary school, 45% had a university degree, and 31% had completed post-graduate studies. Most were in full-time (58%) or part-time employment (32%), whereas 10% were not in paid employment.

Fathers were aged between 25 and 53 years old (M = 37.2, SD = 5.3) and 95.9% were from Spain. Nine per cent of the fathers had received only elementary schooling, 35% had completed secondary school, 35% had a university degree, and 21% had completed post-graduate studies. Most of them were in full-time employment (96%); the rest were employed part-time (3%) or unemployed (1%).

Thirty-two per cent of the families spoke both Catalan and Spanish at home, 30% spoke Catalan, 22% Spanish, and 13% other languages.

Twenty-two per cent of the families had a monthly income between €1,602 and €2,451, considered an average income in Spain [47]. Eight per cent of families had a monthly income below €1,602, and 72% a monthly income above €2,451.

Instruments

A brief sociodemographic questionnaire was used to record sociodemographic variables related to the child (age, gender, attendance at a nursery or a preschool center), and to the parents (gender, age, educational level, working status and monthly family income).
The Spanish version of the Bayley Scales of Infant Development-III (BSID-III) [46] was used to assess the child’s development. Cognition, Language, and Motor scales were applied. The Bayley-III has demonstrated high reliability and validity in Spain [46, 48].

The Spanish version [49, 50] of the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes [1, 2] was used to assess parental behaviors. The PICCOLO is a reliable and validated 29-item measure of parent-child interactions for parents with children aged between 10 and 47 months old. The 29 items reflect parental behaviors linked to the child’s developmental outcomes and are scored according to their frequency as 0 (absent, not observed), 1 (rare, minor or emerging) and 2 (clear, definitive, strong and frequent). The items are grouped into four domains: (a) Affection (7 items), which involves the physical and verbal expression of affection, positive emotions, positive evaluation and positive regard; (b) Responsiveness (7 items), which includes reacting sensitively to a child’s cues and expressions of needs or interests and reacting positively to the child’s behavior; (c) Encouragement (7 items), which considers the parents’ support of their child’s efforts, exploration, independence, play, choices, creativity, and initiative; and (d) Teaching (8 items), which includes cognitive stimulation, explanations, conversation, joint attention, and shared play. The instrument generates a score for each dimension between 0 to 14 (and 0 to 16 for the teaching dimension) and a total score between 0 and 58. The psychometric properties of the PICCOLO have been found to be satisfactory for both the original and the adapted version [1, 2, 49, 50]. In this study, two trained observers coded 54 mother-child and 29 father-child interactions; inter-rater reliability scores were adequate, and the ICC ranged from .71 to .92. Regarding total scale consistency reliability ($n = 155$), Cronbach’s $\alpha$ value was .84 for mothers and .85 for fathers. With respect to the PICCOLO subscales, Cronbach’s $\alpha$ value ranged between .59 and .78 for mothers, and .58 and .73 for fathers.

Procedure

Ethical approval was obtained from the Bioethics Commission of the first authors’ university, according to the guidelines provided by the Council for International Organizations of Medical Sciences (CIOMS), the World Health Organization (WHO), and the World Medical Association (WMA) Declaration of Helsinki—Ethical Principles for Medical Research Involving Human Subjects.

Families were recruited from pediatric centers, nurseries, and Community Family Centers, and they were informed that their participation would be voluntary and anonymous. They received a letter with information about the study, the sociodemographic questionnaire, and a brief guide about how to video record adult-child interactions during play at home. The parents provided signed informed consent prior to participation. Mothers and fathers were asked to record, separately, a play session lasting between 8 and 10 minutes with their child at home in their usual way, with the following instruction: “Interact and play with your child as you normally do”. The father and mother could be filmed on video either on the same or different day, within a maximum period of one week. They both chose what to play with their son or daughter. Some games and materials were suggested in the brief guide, for example, books, toy animals, kitchens, dolls, building blocks etc. Mothers and fathers of the same family usually selected different toys when playing with their children, as most of them recorded their videos on different days. Nevertheless, no differences were observed in the type of toys chosen by mothers and fathers, and most adults and children introduced different toys in the play session. Finally, videos were collected and scored according to the PICCOLO criteria by a group of psychologists and specialists in child development. Only videotapes that followed the researcher’s instructions (99%) were scored.
Data analysis
Differences in mean PICCOLO item scores between mothers and fathers of the same child were compared via the Wilcoxon signed-rank test for paired samples. Differences in mean domain and total PICCOLO scores between mothers and fathers of the same child were compared via Student’s *t*-test for paired samples, and effect size was calculated by Cohen’s *d*. In addition, the relation between mothers’ and fathers’ parenting scores was analyzed by computing Pearson’s correlation coefficients.

For categorical sociodemographic variables, mean parenting scores were compared via Student’s *t*-test (for comparing two means) or via robust Brown-Forsythe ANOVA (for more than two means). The relations between parenting scores and demographic variables were examined via Pearson product-moment correlation coefficients (for continuous variables), or via Spearman correlation coefficients (for ordinal variables). Missing data were handled by pairwise deletion. IBM SPSS (version 24.0 for Windows) was used for all statistical analyses.

Results
Mothers’ and fathers’ parenting
Table 1 presents the descriptive statistics (mean and standard deviations) of the PICCOLO item scores for mothers and fathers separately. Only one of the 29 items (item 5 of the affection domain, “Uses positive expressions with child—words such as “honey”, “kiddo” or an affectionate nickname”) showed a mean score lower than 1 in both mothers and fathers, which indicates that the corresponding behavior was rarely observed in either parent. The four items with the highest mean (*M* > 1.85) were the same for both mothers and fathers: three items from the affection domain (“Speaks in a warm tone of voice”, “Is physically close to child”, “Is engaged in interacting with child”), and one item from the responsiveness domain (“Pays attention to what child is doing”).

The mothers showed a higher mean score than the fathers (*p* < .05) for three items in the affection domain, three in the responsiveness domain, three in the encouragement domain, and five in the teaching domain (see Table 1).

Table 2 presents the descriptive statistics (mean and standard deviations) for the PICCOLO domain and total scores for mothers and fathers. Scores were computed by dividing the total score by the number of items in each domain (mean score). Thus, all mean scores ranged theoretically from 0 to 2. For both parents, all mean scores ranged between 1 and 2. In other words, both mothers and fathers tended to show positive parenting behaviors (affection, responsiveness, encouragement, and teaching) when interacting with their children.

Table 2 also shows that mothers presented higher mean scores in all domains and higher total PICCOLO scores than fathers. Using Cohen’s [51] benchmarks for interpreting effect sizes, the effect for the differences between mothers and fathers in mean affection, responsiveness, and encouragement scores can be considered as small (*d* ≈ .20), whereas the effect for the differences in the teaching domain and in the total PICCOLO score can be considered as medium (*d* ≈ .50).

The mean PICCOLO scores are shown in Fig 1. The mean scores for the four positive parenting domains followed a similar pattern in both mothers and fathers: that is, the order of the mean scores was the same. For both parents, the highest mean score corresponded to the responsiveness domain, followed by the affection and encouragement domains; and the lowest mean score was in the teaching domain.

The relationship between mothers’ and fathers’ parenting scores was analyzed by computing Pearson’s correlation coefficients, which showed statistically significant positive
correlations between parents in the affection domain ($r = .273; p = .001$), the teaching domain ($r = .408; p < .001$) and the total PICCOLO score ($r = .276; p < .001$). However, the correlation coefficient between mothers’ and fathers’ scores was not statistically significant in the responsiveness domain ($r = .089; p = .271$) or the encouragement domain ($r = .116; p = .149$).

### Parenting and sociodemographic variables

The only statistically significant positive correlation between child age and parenting was found for the teaching domain, $r = .158; p = .049$, in mothers, indicating that mothers’ teaching...
behaviors were more frequently observed with older children. However, none of the fathers’ parenting domains was significantly related to child age. With respect to child gender, Student’s t-test for independent samples found no statistically significant differences between boys (n = 90) and girls (n = 65) in PICCOLO mean domain and total scores, for either mothers or fathers. Nor were any statistically significant differences in the mothers’ and fathers’ parenting scores found between children who attended a nursery or a pre-school center (n = 121) and those who did not (n = 27).

With respect to mothers’ and fathers’ age, no statistically significant correlations were found with parenting scores. In relation to parents’ educational level, statistically significant Spearman correlation coefficients were found for mothers for the affection ($r_s = .197; p = .017$), encouragement ($r_s = .217; p = .009$), and teaching ($r_s = .187; p = .024$) domain scores and the total PICCOLO scores ($r_s = .270; p = .001$). Thus, mothers with higher educational levels presented more positive parenting behaviors (except for the responsiveness domain) during their interactions with their children. On the other hand, fathers’ educational level was not significantly associated with positive parenting interactions and behaviors.

Mean parenting scores were compared across three groups of mothers’ working status using robust Brown-Forsythe ANOVA, for more than two independent means. Differences between mean parenting scores for the three groups of mothers were not statistically

| Table 2. Differences between mothers and fathers in PICCOLO mean scores (N = 155). |
|--------------------------------|--------------------------------|--------------------------------|-------------|-------------|
| PICCOLO score               | Mothers | Fathers | t(154) | Cohen’s d |
|-----------------------------|---------|---------|--------|-----------|
| M                           | SD      | M       | SD     |            |
| Affection                   | 1.66    | 0.27    | 1.56   | 0.29       | 3.32 **    | .27        |
| Responsiveness              | 1.78    | 0.27    | 1.68   | 0.32       | 3.12 **    | .25        |
| Encouragement               | 1.59    | 0.38    | 1.49   | 0.39       | 2.52 *     | .20        |
| Teaching                    | 1.47    | 0.36    | 1.28   | 0.44       | 5.07 **    | .41        |
| Total                       | 1.62    | 0.24    | 1.50   | 0.27       | 4.83 **    | .39        |

Notes

*p < .05

** p < .01.

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Fig 1. PICCOLO domain and total mean scores for mothers and fathers.

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significant \((p > .05)\). The relationship between fathers’ employment and parenting was not analyzed, because the sample size of the part-time employed \((n = 4)\) and unemployed/homemakers \((n = 2)\) was too small, as most fathers were in full-time employment \((96\%)\). With respect to the amount of time that parents dedicate to childcare, the results showed that on workdays mothers dedicated more hours \((M = 6.85; SD = 2.93)\) than fathers \((M = 4.45; SD = 2.94)\). The \(t\)-test for paired samples indicated that the difference between means was statistically significant \((t_{(140)} = 10.31; p < .001)\) with a large effect size \((\text{Cohen’s } d = .87)\). On the weekend, mothers also spent more hours in childcare activities \((M = 11.62; SD = 0.97)\) than fathers \((M = 11.25; SD = 1.76)\), shown by a statistically significant difference \((t_{(140)} = 3.08; p = .002)\) with a medium effect size \((\text{Cohen’s } d = .26)\). Therefore, mothers spend more time on childcare activities than fathers, although this difference is more pronounced on workdays than on weekends.

With respect to family income, statistically significant Spearman correlation coefficients were found with mothers’ affection \((r_s = .184; p = .026)\), mothers’ encouragement \((r_s = .174; p = .036)\), and mothers’ total PICCOLO scores \((r_s = .213; p = .010)\). In fathers, only teaching domain scores were positively related to family income \((r_s = .234; p = .005)\).

**Discussion**

**Similarities and differences between mothers and fathers in parenting**

This study aimed to contribute to the understanding of parenting constructs across gender by including the same measure for mothers and fathers of very young typically developing children. Our first aim was to explore whether mothers and fathers differed in terms of parenting dimensions when they were evaluated in a free-play situation at home. Our results showed both mothers and fathers to be competent in the parental behaviors analyzed, as the mean scores for all parenting dimensions ranged between 1.47 and 1.78 for mothers and 1.28 and 1.68 for fathers, on a scale between 0 and 2. Mothers scored above 1.5 in Affection, Responsiveness and Encouragement and 1.47 in Teaching. Fathers scored above 1.5 in Affection and Responsiveness and 1.49 in Encouragement. Only the Teaching dimension scored below 1.28. These results indicated that the observed parental behaviors were frequent and well established for mothers and fathers during free-play interactions with their children, with Teaching behaviors being somewhat less frequent, especially for fathers. As in previous studies that have compared mothers and fathers by measuring parental positive behaviors with the same tool \([52, 53]\), in our sample mothers scored higher than fathers in a variety of parental behaviors. Mothers scored significantly higher on 14 of the 29 PICCOLO items, in all four PICCOLO domains, and in the total PICCOLO score.

In the Affection domain, mothers praised the child and used positive expressions with him/her significantly more frequently than fathers and were also more physically close to the child. These results are consistent with those of a review by Abkarian \([54]\), who found that mothers tended to praise their child more, recognizing his/her contributions (“Nice!”). They also corroborate other findings \([55]\) were fathers tend to engage in a more distal style of interaction than mothers, who tend to be closer to the child and to establish body contact with him/her. But these results must be carefully considered, as the size effect of the differences between mothers and fathers in the Affection domain was low.

With respect to Responsiveness, it is relevant that mothers and fathers scored high in all items within the Responsiveness domain, with all the mean scores being above 1.5 out of 2. So, our results are in line with those studies concluding that mothers and fathers are, in general, responsive to the child’s signals of attention and interest \([19, 30]\). In this domain, significant differences were found in three items: “Changes pace or activity to meet child’s interests or
needs,” “Is flexible about child’s change of activities or interests,” and “Responds to child’s emotions.” Our results are in line with those showing that mothers are more responsive to an infant’s cues of interest and emotions and that they are more likely to follow the child’s lead [27], although the size effect of these differences was low.

With respect to the Encouragement domain, the items showing significant differences were “Encourages child to handle toys”, “Supports child in making choices” and “Offers suggestions to help child”, and the size effect of the differences in this subscale was also low. Few studies have compared mothers and fathers with respect to positive behaviors encouraging the child’s initiative, effort, and autonomy. Some studies [1, 2, 51] using PICCOLO, of parents with a low socioeconomic status in the United States, found that fathers scored lower than mothers in Encouragement, and, in fact, in all PICCOLO domains. It is relevant to mention that this dimension of parenting has been more frequently studied in terms of directive behaviors, control, and intrusiveness. Although behaviors encouraging the child’s initiative, effort and autonomy should be considered as the opposite to intrusiveness, it is difficult to compare the results of studies focusing on directiveness and intrusiveness with those analyzing positive behaviors of promotion of the child’s autonomy, as in our case. Previous studies about directiveness and intrusiveness found that fathers were more likely than mothers to show intrusive behaviors, such as offering their infant an object while he/she was playing with another one, and to change the way the infant was playing with the object [28]. Kazura [26] found that fathers were more directive than mothers when playing with their children. Our results are somewhat in line with those mentioned, but we must take into account that the size effect of the differences in encouragement was low.

More differences between mothers and fathers were found in the Teaching domain, related to the cognitive and linguistic stimulation of children. Mothers scored significantly higher on five items, specifically “Suggests activities to extend what child is doing”, “Repeats or expands child’s words or sounds”, “Labels objects or actions for child”, “Engages in pretend play with child” and “Talks to child about characteristics of objects”. Both similarities and differences have been identified in previous studies with respect to the language that mothers and fathers use with their child. Among the differences, whereas fathers tend to address the child with more directives and demands for clarification [56] and more open questions [32], mothers tend to repeat or expand the child’s utterances and, in general, better attune their speech to the child’s language skills. Our data, showing more repetitions and expansions, labels, references to the object’s characteristics, and suggestions seem to be consistent with those of Majorano [33] in Italian mothers and fathers. Nevertheless, there were no significant differences in other parental behaviors in relation to the language addressed to the child, such as “Explains reasons for something to child” or “Asks for information”. This data would suggest, as other studies have found, that the strengths of fathers when interacting with their children could be those behaviors involving being more challenging for the child, such as questions or talk that goes beyond the context [32, 34–36]. Concerning symbolic play, our results are consistent with those studies reporting that mothers tend to engage more than fathers in pretend play with their young children [18]. We must consider that both mothers and fathers scored lower for teaching behaviors than in the other domains. Some parenting behaviors from the Teaching subscale were not very frequent in mother/father-child interactions. These results are consistent with the data obtained when a mothers’ sample was analyzed for the validation of the Spanish version of the PICCOLO [49]. Among the different parenting behaviors analyzed using the PICCOLO, teaching behaviors were less frequent than responsive, affective and encouraging behaviors. This was also the case for a sample of Spanish mothers and fathers with a child with intellectual disability [13]. This indicates that the parental behaviors included in this domain should be given special attention in Early Intervention Programs and, in
general, in family interventions oriented to promote positive parenting and the child’s development in Spain.

Along with the abovementioned differences, we found some similarities between mothers’ and fathers’ parental behaviors. As mentioned earlier, the four items showing the highest scores were the same for mothers and fathers. These items were three from the Affection domain (“Speaks in a warm tone of voice”, “Is physically close to child”, “Is engaged in interacting with child”), and one from Responsiveness (“Pays attention to what child is doing”). This means that these were the most well-established behaviors among mothers and fathers when interacting with their children in free-play situations. Additionally, the order of the PICCOLO subscales, from the highest to the lowest score, was the same for mothers and fathers: Responsiveness, Affection, Encouragement and Teaching. Other studies using PICCOLO reported the same sequence between parenting dimensions with typically developing children [1] and a very similar order (Affection, Responsiveness, Encouragement and Teaching) with children with intellectual disability [13]. In this respect, our results are consistent with those showing more similarities than differences between mothers’ and fathers’ parental behaviors [44, 57].

With respect to the relationship between mothers’ and fathers’ parenting scores, significant correlations were found for the affection and the teaching domains, and for the total parenting scores. But there were no significant correlations between mothers and fathers in Responsiveness and Encouragement. Other studies found positive correlations between fathers and mothers in sensitivity and intrusiveness [23, 30]. Some studies indicate that parents can become similar in their parental behaviors as a consequence of cohabitation [58], probably because parents can rely on each other in searching for successful parental strategies [29]. So, our results show both commonalities and differences between the mothers and fathers of our sample. We interpret this as consistent with Cabrera’s [12] model of parenting and the transactional models of human development [59], in so far as the parental skills of fathers and mothers would not necessarily be the same for both members of the couple and may to some extent compensate for each other within a family.

### Sociodemographic variables related to parenting

The second aim of this study was to analyze how mothers’ and fathers’ parenting behaviors were related to certain sociodemographic variables of the child and the parents. When interpreting our results, it must be considered that, in our sample, most of the mothers (76%) and fathers (56%) had completed university studies, and that 72% of the families had above-average incomes. The mothers’ and father’s educational level and family income have been clearly linked to the quality of parent-child interactions [60, 61]. Halle [62] found that mothers with higher educational levels performed more achievement-related behaviors in their interactions with their children. Parents’ educational level has been linked to better verbal engagement with children [63] and to more cognitive stimulation [59]. Family income has been shown to have an impact on the frequency and quality of early literacy experiences at home [64]. Research has also linked mothers’ and fathers’ education and family income to a warm social climate at home and warm behaviors toward the child [59]. Such data are relevant to inform public policies.

These characteristics of our sample could explain the relatively high scores on the parenting measures, for both mothers and fathers, when compared with the original study of parenting assessed using the PICCOLO in a low-income sample from the United States [1], and with a study in Turkey [65]. Nevertheless, in our study, only maternal educational level (not paternal) was related to parenting. One possible explanation for this lack of relation between the fathers’
educational level and parenting could be that the families that agreed to participate generally had a particular sensitivity towards parenting and education and more egalitarian models of family roles. Additionally, almost all the mothers were employed (58% full-time and 32% part-time), and the fathers even more so (96% full-time and 3% part-time). It is well known that maternal employment is one of the principal causes of social changes in men’s and women’s roles within the family, including the father’s involvement in childrearing [66]. As paternal involvement in childrearing increases, fathers take more responsibility in the tasks of childcare and education [67] and develop a better repertoire of positive parenting behaviors with their children [68], and the role of fathers becomes less stereotypical [33].

It is important to note that the mother’s working status (full-time versus part-time) did not affect the analyzed positive parental behaviors. These results are in line with those studies concluding that a mother’s number of working hours does not negatively affect some aspects of parenting such as the amount of time spent with her child or her knowledge about her child’s characteristics [69]. Nursery attendance was not a factor affecting parental behaviors.

In our study, the age of the child was not related to parental scores in the assessment, with the exception of the score for the mother’s Teaching domain. This indicates that some parental behaviors included in the Teaching scale are more frequent when interacting with older children (2 and 3 years old). This is relevant for parental programs.

With respect to the parent’s age, research suggests that the emotional stability of older parents is linked to more involvement in parenting and better coping with the stresses linked to parenthood [52]. However, in our sample, there were no differences in parental behaviors according to the parents’ age, maybe due to the fact that in Spain, the mean maternal and paternal age is relatively high, at above 30 years [47]. The mean age of the mothers was 35 years and the mean age of the fathers was 37 years in our sample. With respect to the child’s gender, our results are in line with those not reporting significant differences in parental interactions [37, 41].

Conclusions

The main conclusion of our study is that both Spanish mothers and fathers are competent at interacting with their young children in affectionate, responsive, encouraging, and didactic and stimulating ways, performing the positive parenting described in the PICCOLO [2] relating to Affection, Responsiveness, Encouragement and Teaching. Nevertheless, the mothers scored higher than the fathers in all parenting dimensions. This could be explained, at least in part, by the fact that, in Spain, mothers still spend more time than fathers in childcare activities, especially on workdays, as was the case in our sample. In most Western countries, mothers are still the primary caregiver, spend more time on parenting and take more responsibility for family tasks and childrearing than fathers [45].

Our data suggest that mothers and fathers show both similarities and differences in their parental interactions with their children, and that they can compensate for this in each particular family [12]. Our results are in line with the well-established conclusion in the literature that both mothers and fathers can be good parents [70], and show that, in our sample, Spanish mothers and fathers are competent at interacting with their children in ways that promote positive development.

Consistent with previous studies [59, 60], our results show that the mothers’ educational level and family income are associated with the quality of parent-child interactions. However, in our study, the fathers’ educational level was not associated with parenting ability. This may be due to the non-probabilistic nature of the sampling and the possible predominance of fathers who were particularly strongly involved in the upbringing of their children and highly
aware of the importance of such involvement. Beyond such limitations, we consider that our study contributes valuable data and complements other studies in the field conducted in samples with different characteristics and from different countries.

A practical derivative of our study is that it supports the desirability of incorporating male parents into family intervention programs [13], both in those aimed at families with children with delayed or developmental disorders and the general population. In our study, Spanish fathers were found to perform positive parental behaviors during free-play interactions. These results may be of interest to inform social and family public policies.

Limitations and future directions for research

This study has several limitations that should be taken into consideration. The first is the selection of the sample. More studies are needed in order to include a wider sample of the Spanish population, showing more variability with respect to educational level, family income, and some other relevant variables such as parents’ ideas about co-parenting and gender roles. Such studies will be necessary to inform public policies and family intervention programs. Second, this is a descriptive and transversal study and there were no observational measures of parenting over time. Mothers’ and fathers’ parenting behaviors may change as times passes depending on factors such as the age of the child, family structure, employment situation of the parents and other socio-demographic factors. Third, we stress that in this study we did not analyze whether the parental behaviors of mothers and fathers predict children’s subsequent cognitive, linguistic, or socioemotional development. Although children’s development was assessed in this study, both at the time when parental behaviors were recorded and ten months later, the relationship between parenting and child development was not specifically explored. Future studies should continue to examine the effect of mothers’ and fathers’ parenting on child development applying longitudinal designs, in line with some previous research [71, 72]. We are currently analyzing the relationships between parental behaviors and child development in the sample of the present study. Studying how mothers and fathers can contribute to child development is a very relevant topic, which justifies the interest in increasing the number of studies about parenting of mothers and fathers in European countries. Finally, we have recently begun to transcribe caregiver-child interactions. This new focus opens up a whole new area for research analyzing the quantity and quality of Child Directed Speech. The aim is to identify the aspects of input that contribute the most to children’s language acquisition during early development, examining the child’s role in interaction, and conducting dyadic analyses.

Supporting information

S1 Data.

(SAV)

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References
1. Roggman LA, Cook GA, Innocenti MS, Jump-Norman VK, Christiansen K. Parenting interactions with children: Checklist of observations linked to outcomes (PICCOLO) in diverse ethnic groups. Infant Ment Health J. 2013; 34(4):290–306. https://doi.org/10.1002/imhj.21389

2. Roggman LA, Cook GA, Innocenti MS, Jump-Norman VK, Christiansen K. PICCOLO, Parenting Interactions with Children: Checklist of Observations linked to Outcomes. Baltimore: Brookes Publishing. 2013. https://doi.org/10.5195/ijt.2013.6129 PMID: 25945213

3. Cabrera NJ, Tamis-LeMonda CS. Handbook of father involvement. 2nd ed. New York: Routledge. 2013.

4. Pancsofar N. Fathers’ language input and early child language development. In: Fitzgerald H, von Flitzing K, Cabrera N., et al, editors. Handbook of Fathers and Child Development: Prenatal to Preschool. Berlin/Heidelberg: Springer. 2020. p. 393–409.

5. Prieto C, de Guzmán SP. Gender Labour Inequalities, Temporal Availability and Social Regulation. Rev Esp Inv Sociol. 2013; 141:113–131.

6. Flaquer L. La estrella menguante del padre. Barcelona: Ariel. 1999.

7. Law n° 30/1981 of July 7, amending the regulation of marriage in the Civil Code and determining the procedure to be followed for cases of annulment, separation and divorce. «Boletín Oficial del Estado» No. 172 of July 20, 1981:16457–16462. https://www.boe.es/eli/es/l/1981/07/07/30

8. Domínguez-Folgueraz M, Jurado-Guerrero T, Botía-Morillas C. Against the odds? Keeping a nontraditional division of domestic work after first parenthood in Spain. J Fam Issues. 2018; 39(7):1855–1879. https://doi.org/10.1177/0192513X17729399

9. Maroto-Navarro G, Pastor-Moreno G, Ocaña-Riola R, Benítez-Hidalgo V, García-Calcente MDM, Gutiérrez-Cuadra MDP, et al. Male and female involvement in the birth and child-rearing process. J Clin Nurs. 2013; 22(21–22):3071–3083. https://doi.org/10.1111/jocn.12153 PMID: 24007478

10. Borràs V, Ajenjo M, Moreno-Colom S. More time parenting in Spain: a possible change towards gender equality?. J Fam Stud. 2018; 27(1):1–16. https://doi.org/10.1080/13229400.2018.1440618

11. García-de-Diego JM, García-Faloridi L. Sexual Division in Parenting: A Normative Context That Hinders Co-Responsibility. J Fam Issues. 2021. https://doi.org/10.1177/0192513X211039873

12. Cabrera NJ, Fitzgerald HE, Bradley RH, Roggman L. The ecology of father-child relationships: An expanded model. J Fam Theory Rev. 2014; 6(4):336–354. https://doi.org/10.1111/jfr.12054

13. Vilaseca R, Rivero M, Ferrer F, Bersabé R.M. Parenting behaviors of mothers and fathers of young children with intellectual disability evaluated in a natural context. PLoS One. 2020; 15(10): e0240320. https://doi.org/10.1371/journal.pone.0240320 PMID: 33048940

14. Roggman LA, Boyce LK, Cook GA, Christiansen K, Jones D. Playing with daddy: Social toy play, early head start, and developmental outcomes. Fathering. 2004; 2:83–108. https://doi.org/10.3149/fth.0201.83
15. Fletcher R, St. George J, Freeman E. Rough and tumble play quality: Theoretical foundations for a new measure of father-child interaction. Early Child Dev Care. 2013; 183(6): 746–759. https://doi.org/10.1080/03004430.2012.723439

16. Paquette D, Dumont C. The father-child activation relationship, sex differences, and attachment disorganization in toddlerhood. Child Dev Res. 2013;102860. https://doi.org/10.1155/2013/102860

17. Hagan LK, Kuebli J. Mothers’ and fathers’ socialization of preschoolers’ physical risk taking. J Appl Dev Psychol. 2007; 28(1):2–14. https://doi.org/10.1016/j.appdev.2006.10.007

18. Vallotton CD, Foster T, Harewood T, et al. Fathers and young children at play: A scoping review of studies of fathers’ play with sons and daughters from birth to preschool. In: Fitzgerald H, von Fitzling K, Carrera N., et al., editors. Handbook of Fathers and Child Development: Prenatal to Preschool. Berlin/ Heidelberg: Springer. 2020. p. 357–391.

19. John A, Halliburton A, Humphrey J. Child-mother and child-father play interaction patterns with preschoolers. Early Child Dev Care. 2012; 183:483–497. https://doi.org/10.1080/03004430.2012.711595

20. Yago S, Hirose T, Okamitsu M, Okabayashi Y, Hiroi K, Nakagawa N. et al. Differences and similarities between father-infant interaction and mother-infant interaction. J Med Dent Sci. 2014; 19:7–16. https://doi.org/10.11480/610102 PMID: 24658960

21. Cerezo A, Sierra-García P, Pons-Salvador G, Trenado RM. Parental and infant gender factors in parent-infant interaction: State-space dynamic analysis. Front Psychol. 2017; 8: 1724. https://doi.org/10.3389/fpsyg.2017.01724 PMID: 29062290

22. De Wolff M, van IJzendoorn M. Sensitivity and attachment: a meta-analysis on parental antecedents of infant attachment. Child Dev. 1997; 68:571–591. https://doi.org/10.1111/j.1467-8624.1997.tb04218.x PMID: 9306636

23. Hallers-Haalboom ET, Mesman J, Groeneveld MG, Endendijk SR., van der Pol LD, et al. Mothers, fathers, sons and daughters: parental sensitivity in families with two children. J Fam Psychol. 2014; 28:136–147. https://doi.org/10.1037/a0036004 PMID: 24635666

24. Kwon KA, Bingham G, Lewsader J, Jeon HJ, Elicker J. Structured task versus free play: The influence of social context on parenting quality, toddlers’ engagement with parents and play behaviors, and parent-toddler language use. Child Youth Care Forum. 2013; 42:207–224. https://dx.doi.org.proxy1.clsu.edu/10.3149/jms.0901.41

25. Barnett MA, Deng M, Mills-Koone WR, Willoughby M, Cox M. Interdependence of parenting of mothers and fathers of infants. J Fam Psychol. 2008; 22(4):561–573. https://doi.org/10.1037/0893-3200.22.3.561 PMID: 18729670

26. Kazura K. Father’s qualitative and quantitative involvement: an investigation of attachment, play, and social interactions. J Mens Stud. 2000; 9:41–57. http://dx.doi.org.proxy1.clsu.edu/10.3149/jms.0901.41

27. Menashe-Grinberg A, Atzaba-Poria N. Mother-child and father-child play interaction: The importance of parental playfulness as a moderator of the links between parental behavior and child negativity. Infant Ment Health J. 2017; 38(6):772–784. https://doi.org/10.1002/imhj.21678 PMID: 29088502

28. Power TG. Mother- and father-infant play: A developmental analysis. Child Dev. 1985; 56:1514–1524. https://doi.org/10.2307/1130470

29. Schoppe-Sullivan S, Mangelsdorf S, Brown G, Sokolowski MS. Goodness-of-it in family context: infant temperament, marital quality, and early co-parenting behavior. Infant Behav Dev. 2007; 30: 82–96. https://doi.org/10.1016/j.infbeh.2006.11.008 PMID: 17292782

30. Tamis-LeMonda CS, Shannon JD, Cabrera NJ, Lamb ME. Fathers and mothers at play with their 2- and 3-year-olds: Contributions to language and cognitive development. Child Dev. 2004; 75(6):1806–1820. https://doi.org/10.1111/j.1467-8624.2004.00818.x PMID: 15566381

31. Leaper C, Anderson KJ. Sanders P. Moderators of gender effects on parents’ talk to their children: A meta-analysis. Dev Psychol. 1998; 34(1):3–27. https://doi.org/10.1037/0012-1649.34.1.3 PMID: 9471001

32. Rowe ML, Coker D, Pan BA. A comparison of fathers’ and mothers’ talk to toddlers in low-income families. Soc Dev. 2004; 13(2):278–291. https://doi.org/10.1111/j.1467-9507.2004.000267.x

33. Majrano M, Rainieri C, Corsano P. Parents’ child-directed communication and child language development: A longitudinal study with Italian toddlers. J Child Lang. 2013; 40: 836–859. https://doi.org/10.1017/S0305000912000323 PMID: 22883628

34. Tamis-LeMonda CS, Baumwell L, Cristofero T. Parent-child conversations during play. First Lang. 2012; 32: 413–38. https://doi.org/10.1177/0142723711419321

35. Duursma E. Who does the reading, who does the talking? Low-income fathers and mothers in the US interacting with their young children around a picture book. First Lang. 2016; 36: 465–484. https://doi.org/10.1177/0142723716448849
36. Malin JL, Cabrera NJ, Rowe ML. Low-income minority mothers’ and fathers’ reading and children’s interest: Longitudinal contributions to children’s receptive vocabulary skills. Early Child Res Q. 2014; 29:425–432. https://doi.org/10.1016/j.ecresq.2014.04.010 PMID: 25520542

37. Lytton H, Romney DM. Parents’ differential socialization of boys and girls: A meta-analysis. Psychol Bull. 1991; 109:267–296. https://doi.org/10.1037/0033-2909.109.2.267

38. Mascaro JS, Rentscher KE, Hackett PD, Mehl MR, Rilling JK. Child gender influences paternal behavior, language, and brain function. Behav Neurosci. 2017; 131(3):262–273. https://doi.org/10.1037/ bne0000199 PMID: 28541079

39. Garner PW, Robertson S, Smith G. Preschool children’s emotional expressions with peers: The roles of gender and emotion socialization. Sex Roles. 1997; 36:675–691. https://doi.org/10.1023/ A:1025601104859

40. Morrongiello BA, Hogg K. Mothers’ reactions to children misbehaving in ways that can lead to injury: Implications for gender differences in children’s risk taking and injuries. Sex Roles. 2004; 50(1–2):103–118. https://doi.org/10.1023/B:BERS.0000011076.43831.a6

41. Endendijk J, Groeneveld M, Bakerman-Kraenburg M, Mesman J. Gender-differentiated parenting revisited: meta-analysis reveals very few differences in parental control of boys and girls. PLoS One. 2016; 11(7):e0159193. https://doi.org/10.1371/journal.pone.0159193 PMID: 27416099

42. Asbourne L, Daly KJ, Brown JL. Responsiveness in father-child relationships: The experience of fathers. Fathering. 2011; 9:69–86. https://doi.org/10.1017/S0305000912000323

43. Fagan J, Day R, Lamb ME, Cabrera NJ. Should researchers conceptualize differently the dimensions of parenting for fathers and mothers? J Fam Theory Rev. 2014; 6:390–405. https://doi.org/10.1111/jfrt.12044.

44. Lamb ME, Lewis C. Father-Child Relationships. In: Cabrera NJ, Tamis-LeMonda CS, editors. Handbook of Father Involvement. 2nd ed. New York: Routledge. 2013:119–134.

45. Van Holland De Graaf J, Hoogenboom M, De Roos S, Buicx F. Socio-demographic Correlates of Fathers’ and Mothers’ Parenting Behaviors. J Child Fam Stud. 2018; 27: 2315–2327. https://doi.org/10.1007/s10826-018-1059-7 PMID: 29937680

46. Bayley Bayley N. III. Escalas Bayley de Desarrollo Infantil. 3rd ed. Madrid: Pearson. 2015.

47. INE-Instituto Nacional de Estadística [internet]. Life Conditions Survey. 2021. Available from https://www.ine.es/jaxiT3/Tabla.htm?t=9947

48. Castro VJ, Cobos RCR. Análisis de escalas para La evaluación del Desarrollo Infantil usadas en América: una revisión de literatura. Rev. Mov Cient. 2017; 10:72–82. https://doi.org/10.33881/2011-7191. mct.10206

49. Vilaseca R, Rivero M, Bersabé RM, Cantero MJ, Navarro-Pardo E, Ferrer F, et al. Spanish validation of the PICCOLO (Parenting interactions with children: checklist of observations linked to outcomes). Front Psychol. 2019; 10:680. https://doi.org/10.3389/fpsyg.2019.00680 PMID: 30971993

50. Rivero M, Vilaseca R, Ferrer F, Guiller A. Assessing Parenting Interactions With Children: Spanish Validation of PICCOLO With Fathers. Front. Psychol. 12:747716. https://doi.org/10.3389/fpsyg.2021. 747716 PMID: 34721229

51. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.

52. Anderson S, Roggman LA, Innocenti MS, Cook GA. Dads’ parenting interactions with children: checklist of observations linked to outcomes (PICCOLO-D). Infant Ment Health J. 2013; 34: 339–351. https://doi. org/10.1002/imhj.21390

53. Verhoeven M, Junger M, Van Aken C, Deković M, Van Aken MAG. Parenting during toddlerhood. Contributions of parental, contextual, and child characteristics. J Fam Issues. 2007; 28:1663–1691. https://doi.org/10.1177/0192513X07302998

54. Akbanyan GG, Dworin JP, Akbarian AK. Fathers’ Speech to Their Children: Perfect Pitch or Tin Ear? Fathering. 2003; 1(1):27–50. https://doi.org/10.3149/fth.0101.27

55. Botke J, Lamm B, Eickhorst A, Keller H. Father-infant interaction, paternal ideas about early child care, and their consequences for the development of children’s self-recognition. J Genet Psychol. 2007; 168:365–379. https://doi.org/10.3200/GNTP.168.4.365-380

56. Tamis-LeMonda CS, Baumwell L, Cabrera NJ. Father’s role in children’s language development. In: Cabrera NJ, Tamis-LeMonda CS, editors. Handbook of Father Involvement. 2nd ed. New York, NY: Routledge. 2013:135–150.

57. Steenhoff T, Tharnar A, Væver MS. Mothers’ and fathers’ observed interaction with preschoolers: Similarities and differences in parenting behavior in a well-resourced sample. PLoS One. 2019; 14(8): 1–25. https://doi.org/10.1371/journal.pone.0221661
58. Osnat E, Bonnie B. Interrelatedness of marital relations and parent-child relations: a meta-analytic review. Psychol Bull. 1995; 118:108–132. https://doi.org/10.1037/0033-2909.118.1.108 PMID: 7644602

59. Fitzgerald HE, Bradley R. Paternal family relationships, child risk, and child outcomes. Fam Sci. 2012; 3 (3–4):141–144. https://doi.org/10.1080/19424620.2012.779421

60. Davis-Kean PE. The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. J Fam Psychol. 2005; 19(2):294–304. https://doi.org/10.1037/0893-3200.19.2.294 PMID: 15982107

61. Gracia P. Parent-child leisure activities and cultural capital in the United Kingdom: The gendered effects of education and social class. Soc Sci Res. 2015; 52:290–302. https://doi.org/10.1016/j.ssresearch.2015.02.005 PMID: 26004463

62. Halle T, Kurtz-Costes B, Mahoney J. Family influences on school achievement in low-income, African American children. J Educ Psychol. 1997; 89:527–537. https://doi.org/10.1037/0022-0663.89.3.527

63. Hart B, Risley TR. Meaningful differences in the everyday experience of young American children. Baltimore, Maryland: Paul H Brookes Publishing. 1995.

64. Storch SA, Whitehurst GJ. The role of family and home in the literacy development of children from low-income backgrounds. In: Britto PR, Brooks-Gunn J, editors. The role of family literacy environments in promoting young children’s emerging literacy skills: New directions for child and adolescent development. San Francisco, CA: Jossey-Bass/Pfeiffer. 2001:53–71.

65. Bayoğlu B, Unal Ö, Elibol F, Karabulut E, Innocenti MS. Turkish Validation of the PICCOLO (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes). Infant Ment Health J. 2013; 34(4):330–338. https://doi.org/10.1002/imhj.21393

66. Gregg P, Washbrook E. The Effects of Early Maternal Employment in Child Development in the UK. The Centre for Market and Public Organisation, University of Bristol, UK. Working Paper. 2003; Series No. 03/070.

67. Cabrera NJ, Tamis-LeMonda CS, Bradley RH, Hofferth S, Lamb ME. Fatherhood in the twenty-first century. Child Dev. 2003; 74:127–136. https://doi.org/10.1111/1467-8624.00126

68. Pedersen FA, Suwalsky JTD, Cain RL, Zaslow MJ, Rabinovich BA. Paternal care of infants during maternal separations: Associations with father-infant interaction at one year. Psychiatry. 1987; 50(3): 193–205. https://doi.org/10.1080/00332747.1987.11024352 PMID: 3659208

69. Roeters A, Van der Lippe T, Kluwer E. Parental work demands and the frequency of child-related routine and interactive activities. J Marriage Fam. 2009; 71:1193–1204. https://doi.org/10.1111/j.1741-3737.2009.00663.x

70. Fitzgerald HE, von Klitzing, Cabrera N, et al., editors. Handbook of Fathers and Child Development. New York: Springer. 2020.

71. Knauer HA, Ozer EJ, Dow WH, Fernald LCH. Parenting quality at two developmental periods in early childhood and their association with child development. Early Child Res Quart. 2019; 47:396–404. https://doi.org/10.1016/j.ecresq.2018.08.009

72. Prime H, Wade M, Gonzalez A. The link between maternal and child verbal abilities: An indirect effect through maternal responsiveness. Dev Sci. 2020; 23(3):1–14. https://doi.org/10.1111/desc.12907 PMID: 31571333