

**CHILD TEMPERAMENT AND CHILD-CARE SUPPORT ARE  
RELATED TO BETTER MOTHER-CHILD RELATIONSHIP  
QUALITY**

**O TEMPERAMENTO DA CRIANÇA E O APOIO AOS CUIDADOS  
INFANTIS ESTÃO RELACIONADOS COM UMA MELHOR  
QUALIDADE DO RELACIONAMENTO MÃE-FILHO**

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**Abstract**

The current study aims to identify associates of mother-first-born-child relationship quality of an important period that is when expecting a second child. Based on Belsky's determinants of parenting model (Belsky, 1984), we suggested three domains to relate to mother-child relationship quality: maternal personal resources (well-being, effortful control), child characteristics (temperament, behaviour problems) and contextual factors (household chaos, child-care support, marital satisfaction). Forty-five mothers ( $M_{age}=34.78$  years;  $SD_{age}=3.86$  years) and their typically developing first-born children ( $M_{child\ age}=32.26$  months;  $SD_{age}=6.27$ ) were visited at home in the south of England, Sussex, UK, where mothers completed questionnaires and mother-child interactions were videotaped. Results demonstrated that easier child temperament, better maternal well-being, less household chaos and more child-care support were related to more positive mother-child relationship quality. Together the variables explained 23% of the variance in relationship quality. The child's easy temperament, chaos and child-care support provided unique variance in explaining the mother-child relationship. These results contribute to the literature on expecting a second child and yield several implications. The findings also provide guidance for future intervention programmes. In order to improve the mother-child relationship quality, child executive functioning may be a fruitful target for intervention, as well as increased support for child-care and decreased household chaos.

**Keywords:** mother-child relationship, household chaos, child-care support, child temperament

## Resumo

O presente estudo tem como objetivo identificar associações da qualidade do relacionamento mãe-primogênito durante o importante período de espera do segundo filho. Com base nos determinantes do modelo parental de Belsky (Belsky, 1984), sugerimos três domínios para caracterizar a qualidade do relacionamento mãe-filho: recursos pessoais maternos (bem-estar, esforço de controlo), características da criança (temperamento, problemas de comportamento) e fatores contextuais (caos doméstico, apoio ao cuidado dos filhos, satisfação conjugal). Quarenta e cinco mães ( $M_{idade} = 34,78$  anos;  $SD_{idade} = 3,86$  anos) e os seus filhos primogênitos com desenvolvimento típico ( $M_{idade\ da\ criança} = 32,26$  meses;  $SD_{idade} = 6,27$ ) foram visitados em casa no sul da Inglaterra, Sussex, Reino Unido, onde as mães preencheram questionários e as interações mãe-filho foram gravadas em vídeo. Os resultados mostraram que o temperamento mais fácil da criança, melhor bem-estar materno, menos caos doméstico e mais apoio no cuidado da criança estavam relacionados a uma qualidade mais positiva do relacionamento mãe-filho. No seu conjunto, as variáveis explicaram 23% da variação na qualidade do relacionamento. O temperamento fácil da criança, o caos e o apoio aos cuidados infantis forneceram variações únicas na explicação do relacionamento mãe-filho. Esses resultados contribuem para a literatura sobre a expectativa de um segundo filho e geram várias implicações. Os resultados também fornecem orientação para futuros programas de intervenção. A fim de melhorar a qualidade do relacionamento mãe-filho, as competências da função executiva da criança podem ser um alvo frutífero para a intervenção, bem como o aumento do apoio aos cuidados infantis e a diminuição do caos doméstico.

**Palavras-chave:** relação mãe-filho, caos doméstico, apoio ao cuidado da criança, temperamento da criança

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## Introduction

There are very few studies that have examined the mother-firstborn relationship when expecting a second born, considering the research showing that there are dramatic changes in mother-child relationships in this transition (e.g., Kojima et al., 2005; Teti et al., 1996), it is important to understand mother-firstborn relationships and the predictors of the quality of those relationships. Therefore, we investigated the associates of observed mother-child relationship quality when expecting a second child. Based on Belsky's determinants of parenting model (Belsky, 1984) we suggested three domains, maternal personal resources (well-being and effortful control), contextual factors (chaos, support, and marital satisfaction) and child characteristics (child temperament and behaviour problems).

## **Mother-Child Relationship**

Positive mother-child relationship quality can be defined as high on warmth, sensitivity, good communication and responsiveness. Mother-child relationship quality in the early years has long term influences on children's development, sensitive parenting during infancy predicts improved emotion regulation in adulthood (Simpson et al., 2007), and early maternal caregiving predicted partner and peer attachment 20 years later (Zayas et al., 2011). It is also salient to understand this relationship during the transition to having another child.

Several studies have shown that mother-first-born child relationships during the transition are often disrupted, in terms of instability in the attachment (Touris et al., 1995), decreased security in attachment (Teti et al., 1996), less playful interactions (Kojima et al., 2005) and less warmth in the relationship (Taylor & Kogan, 1973). Most studies have focused on mother-child relationship quality after the birth of a second child, highly because of post-partum depression. However, pregnancy is a critical stage for maternal well-being; a systematic review demonstrated that women report increased depressive and anxiety-related symptoms in the second and third trimesters of pregnancy (Bennett et al., 2004). To our knowledge, mother-child relationship quality when expecting a second child has not been widely investigated, so it is important to understand protective and risk factors even before the new baby is welcomed. The transition period to having a second child is a family transition that can be stressful for all family members. Research also suggested that a spike is seen in first-born children having problematic behaviours, such as disruptive, aggressive, or noncompliant behaviours. (Volling, 2017). On the other hand, a good quality mother-child relationship might prevent this spike in problematic behaviours. Therefore, we aimed to understand the associates of mother-child relationship quality before the birth of a second child.

## **Determinants of Parenting**

Belsky's model of determinants of parenting suggests that parental functioning is determined by three domains, parental characteristics (e.g., mental health, psychological resources, and attachment history), child characteristics (e.g., age, gender, and temperament) and contextual factors (e.g., support, marital quality, and stress) (Belsky, 1984). According to the model, parental personality, child characteristics, marital relationship, as well as a social network and work environment directly influence parenting. Parental developmental history further influences personality, which then, in turn, predicts child development through parenting together with child characteristics. Belsky further proposes a hierarchy of these domains such that parental personal resources have the greatest influence on the mother-child relationship, followed by contextual resources and support, which is then followed by child characteristics, particularly temperament (Belsky, 1984). The theory suggests that parents' developmental history and marital relationship influence psychological well-being, which in return influences parenting, followed by support and child characteristics. In his later review, Belsky further emphasizes that better mental health of mothers predicts better quality parenting and is the most important predictor; a psychologically stable

parent can cope with difficult temperamental features of the child (Belsky & Jaffee, 2015). In fact, according to the model, difficult child characteristics and less favourable contextual factors can be buffered by parents' psychological well-being.

### **Maternal Personal Resources**

We proposed maternal personal resources as one domain with two important variables, maternal well-being and effortful control to be related with the mother-child relationship. Personal well-being is suggested to be the most effective buffer for the parent-child relationship by Belsky (1984). Better maternal mental health predicts higher parenting quality as reviewed by Belsky and Jaffee (2015). Previous research also demonstrates that mothers with depression tend to show less sensitive behaviours toward their children (Feldman et al., 2009) and more negative affect toward their infants (Campbell et al., 1992, Premo & Kiel 2016). Considering mothers expecting a second child, depleted resources (including sleep deprivation) may hinder their ability to regulate effortful control skills. Evidence also shows that parental effortful control has been linked with more warmth and interactive time spent with children (Bridgett et al., 2011). Therefore, we hypothesized that maternal well-being and effortful control skills would be related to mother-child relationship quality within our sample of pregnant mothers.

### **Child Characteristics**

Child characteristics such as difficult temperament have been linked with poorer mother-child relationship quality. Difficult temperament may include traits may like being highly active, having difficulty adapting to change, having intense emotional reactions and being easily frustrated. Children with difficult temperament may show negative behaviours, such as tantrums, which can make it harder for their caregivers to provide them with the care and support they need. For example, mothers demonstrate more disapproval towards 2-year-olds with difficult temperament (Gauvain, 1995). The first-born children in the present study were aged 2-4, which is an important period for children to learn and acquire self-regulation abilities (Thompson & Goodman, 2010). We expect temperament including self-regulation to play a significant role in the mother-child relationship. The age group also demonstrates more problematic behaviours (Belsky et al., 1996). Withdrawal behaviour predicts mother-child conflict, aggression and delinquency predict conflict with both parents and closeness with mothers predicts less withdrawal (Zhang et al., 2008). These links are bidirectional in nature (Harnish et al., 1995; Moss et al., 2008; Zhang et al., 2008). Therefore, we expected child behaviour problems to also play a role in mother-child relationship quality in the study.

### **Contextual Factors**

Finally, we proposed that the contextual factors of marital satisfaction, household chaos and child-care support would also be related to mother-child relationship quality. Applying the spillover hypothesis within families predicts that the quality of one

relationship can reflect on another relationship within a family (Nelson et al., 2009). Marital dissatisfaction and conflict are linked with poorer quality parent-child relationships (Krishnakumar & Buehler, 2000), whereas more positive marital behaviour predicted more supportive parent-child relationships 9 years later (Tanner Stapleton & Bradbury, 2012). Therefore, we expected marital satisfaction to be an important variable in our contextual factor domain. Household chaos can be described as high noise, low regularity and crowding within the home environment (Wachs, 2005). Household chaos is not only linked with negative life outcomes but also is related to less parental emotional availability (Whitesell et al., 2015). A very recent review on household chaos and family outcomes suggested that household chaos is related to worse parent-child relationship outcomes, such as less closeness and supportiveness, and more conflict (Marsh et al., 2020). Thus, we expected household chaos to be a significant variable in explaining mother-child relationship quality. Support is another important contextual factor and support sources were suggested to be effective to buffer the parent-child relationship (Belsky, 1984). Previous research has demonstrated that higher social support in pregnancy was related to more parental satisfaction and efficacy (Anglely et al., 2015). Additionally, support quantity and high social support satisfaction were positively linked with maternal sensitivity (Goldstein et al., 1996). Taken together, we hypothesized that child-care support, household chaos and marital satisfaction would be related to mother-child relationship quality.

### **The Present Study**

The study aimed to unveil the associates of mother-child relationship quality when expecting a second child. Based on Belsky's determinants of parenting theory, we hypothesized that better maternal personal resources (well-being and effortful control), child characteristics (easier temperament and fewer behaviour problems) and beneficial contextual factors (less household chaos, child-care support, and marital satisfaction) would be related to better mother-child relationship quality. In addition, we examined the independent contributions of each variable to mother-child relationship quality and further tested whether the hierarchy of determinants of parenting (Belsky, 1984) would be present in the sample.

### **Method**

#### *Participants and Recruitment*

Forty-five mothers ( $M_{age} = 34.78$  years;  $SD_{age} = 3.86$  years; *Range*: 25-47 years) and their first-born children ( $M_{child\ age} = 32.26$  months;  $SD_{age} = 6.27$ ; *Range*: 18-42 months) were the participants. Twenty-six of the children were boys and 19 were girls. Mothers and their typically developing children were recruited via nurseries and social media (Facebook groups) in the south of England and were invited to participate in the third trimester of pregnancy ( $M = 33.43$  weeks;  $SD = 4.45$ ). All of the mothers were cohabitating with the father of the first-born child. Mothers were highly educated; 93.7 % reported

having an undergraduate degree or higher. 44/45 participants indicated their ethnicity as White, which reflects the population from which the sample was drawn.

### *Procedure*

Prior to the home visit, mothers were asked to complete an online questionnaire. The visits were conducted by two researchers and lasted 90-120 minutes. The researchers were trained extensively, had DBS (Disclosure and Barring Service) checks (right to work with children) and had experience in the field. The mother-child relationship was measured by observation. Mother and child were invited to complete three play interactions all of which were videotaped; the researchers left the room. The play sessions were designed according to what is acceptable for this age range (Atzaba-Poria et al., 2014). All materials were provided by the researchers, a) Structured play (five mins), Mothers were asked to play with blocks to make a train, and two cups with a duck, hiding the duck under the cups and read a story with their child, b) Free play (five mins), Mother and child were provided with several toys (e.g., dolls, doctor set, cars, blocks, etc.) and were given no instructions, c) Clean-up session (two mins), Mothers and children were asked to put away the toys together, d) New-born play (five mins), Mother and child were given toys designed to elicit talk and play about the arrival of the newborn a doll, with a bathing and feeding set. Mothers were also asked to complete questionnaires. After the visit, the researchers rated child temperament based on their observations during the visit.

### **Ethical issues**

Ethical approval was gained before recruitment commenced. British Psychological Society (BPS) ethical guidelines were followed throughout the study and mothers provided informed consent.

### **Measures**

#### *Observer Ratings*

For the measurement of temperament, although we cannot know the children as much as mothers can, it is also true that mothers can be biased when they are evaluating their own children. For instance, when mothers were asked to evaluate their children explicitly, they tended to overestimate the positive features of their children and underestimate their negative features (Kendziora & O'leary, 1998). Parents may also distort self-reports owing to social desirability, which means they cannot admit problems of their children or negative features, because either they do not have the information or they may not just recall the relevant information (Willis et al., 1999). Therefore, we believe that observer ratings would be more reliable to use.

### *Relationship Quality*

The scale of Relationship Quality of Dyadic Relationship Scales from the fifth edition of The IOWA Family Interaction Rating Scales (Melby et al., 1995) was used to measure relationship quality (RQ). A trained coder evaluated the quality of the relationship between the mother and child from low (0) to high (9). A lower score indicates an unsatisfying, uninvolved or a conflicted relationship while a higher score indicates a satisfying, warm, happy relationship. All four of the videotaped sections were coded separately. The average of the scores from the four sections constituted the overall RQ of the mother-child dyads. The reliability of the four sections was excellent (Cronbach  $\alpha = .97$ ). The inter-rater reliability, the intra-class correlation for nine randomly selected families was  $r = .65$ .

### *Child Temperament*

The two researchers who conducted the home visits completed a subset of items from The Early Childhood Behavior Questionnaire (ECBQ) very short form with 21 items (Putnam et al., 2006) to assess the temperament of the first-born child on two subscales negative affect and effortful control. After each visit, the researchers indicated and agreed together how often the child showed each behaviour during the visit on a 7-point Likert scale (1 = *never*, 7 = *always*). The correlation between negative affect and effortful control was high  $-.74$ , therefore we combined them by reverse coding negative affect and created an easy temperament score, final reliability was excellent (Cronbach  $\alpha = .90$ ). A sample item is “When engaged in play with his/her favourite toy, plays for more than 10 minutes”.

## **Maternal Self-Reports**

### *Child Behaviour Problems.*

Child behaviour problems were measured using The Eyberg Child Behaviour Inventory (ECBI) (Burns & Patterson, 2000). The scale has 36 items in total and measures conduct problems, inattentive behaviour and oppositional defiant behaviour. In this study we used 34 items, we did not use the items related to siblings. Mothers rated each item on a 7-point Likert-type scale (1 = *never* to 7 = *always*), e.g., “Gets angry when does not get own way” and “Destroys toys and other objects”. The scores were summed to identify the intensity of the problems. Cronbach  $\alpha$  was  $.89$ .

### *Maternal Effortful Control*

Effortful control was measured using a 19- item subscale of the Adult Temperament Questionnaire short form (ATQ, (Evans & Rothbart, 2007). Mothers responded to each statement on a 7-point Likert-type scale (1 = *extremely untrue*, 7 = *extremely true*). A

sample item is “I can make myself work on a difficult task even when I do not feel like trying.” Cronbach  $\alpha$  was .63.

### *Maternal Well-Being*

The 21-item Depression Anxiety Stress Scales (DASS-21) (Crawford & Henry, 2003) was used to measure maternal well-being. Mothers rated how much each statement was true for them over the past week on a 4-point scale (0 = *did not apply to me at all*, 3 = *applied to me very much or most of the time*). Scores were summed and then multiplied by 2 as the measure suggested. Sample items were “I felt down-hearted and blue”, “I tended to overreact to situations” and “I felt I was close to panic”. The scale reliability was excellent (Cronbach  $\alpha$  =.86). Higher scores indicated more symptoms related to depression, anxiety, and stress.

### *Household Chaos*

Mothers completed the short version of the Confusion, Hubbub, and Order Scale (CHAOS) (Matheny et al., 1995). The 6-item scale measures household chaos on a 5-point scale (1 = *definitely untrue*, 5 = *definitely true*). An example item was “You cannot hear yourself think in our home.” Initially, the Cronbach  $\alpha$  was low .55, therefore we deleted one suggested item (“The children have a regular bedtime routine (same bed each night, a bath before bed, reading a story”) (reverse-scored)), new  $\alpha$  was .59.

### *Child-care Support*

The Family Support Scale (FSS) (Dunst et al., 1988) was used to assess sources of support and how helpful the support was perceived to be. Mothers indicated how helpful each source was in raising their child on a 5-point scale (1 = *not at all helpful*, 5 = *extremely helpful*). The eight sources (my parents, my relatives, my friends, my partner’s friends, my partner’s relatives, my partner’s parents, spouse or partner, other parents) as in the original scale were given, and “babysitter” was also added to the scale. Mothers were provided with a nonapplicable option if the given support source was not available for them and if so it was coded as a missing variable. The Cronbach  $\alpha$  was .75.

### *Marital Satisfaction*

The Kansas Marital Satisfaction Scale (Grover et al., 1984), was used to measure marital satisfaction. Mothers rated how true three statements were for their feelings over the past month on a 5-point Likert scale (1 = *not at all*, 5 = *extremely*), e.g., “How satisfied are you with your marriage/your partner as a spouse and your relationship with your partner/spouse?”. The scale had high reliability (Cronbach  $\alpha$  = .94).

### Data Analysis Plan

In order to understand whether any demographics variables are related with the dependent variable; mother child relationship and therefore to be controlled simple correlations has been conducted. Later on to understand the unique associations we included the variables that were related to the mother-child relationship quality and put them all together as predictors in the multiple regression analysis. All of the analysis were conducted by using IBM SPSS 21 software and data was normally distributed.

### Results

The correlation tests indicated that demographic variables, child age, gender and maternal age were not associated with mother-child relationship quality. In order to test the hypothesis that better maternal resources, better child characteristics and better contextual factors relate to better mother-child relationship quality bivariate correlations were conducted (see Table 1). Three of the correlations among the independent variables were significant. More behaviour problems were related to more household chaos, easier child temperament was related to better maternal effortful control and mothers reporting more marital satisfaction also reported better well-being. Easier child temperament, better maternal well-being (fewer symptoms of depression, anxiety and stress), less household chaos, and more child-care support were linked with better mother-child relationship quality. On the other hand, maternal effortful control, child behaviour problems, and marital satisfaction were not directly associated with mother-child relationship quality.

Table 1.

#### Descriptive and Correlations Among Variables

Variable	1	2	3	4	5	6	7	8
Relationship Quality		.35**	-.05	.17	-.29*	-.34*	.32*	.11
Child Temperament Easy			-.07	.27*	-.06	-.13	.11	-.05
Child Behavior Problems				.05	.10	.40**	-.09	-.07
Maternal Effortful Control					-.22	-.15	.09	.18
Maternal Well-Being						.21	-.24	-.39**
Household Chaos							-.05	-.14
Child-care Support								.13
Marital Satisfaction								

MEAN (SD)	7.90 (1.01)	4.65 (1.18)	115.6 (20.24)	4.66 (.51)	7 (4.96)	1.85 (.55)	3.33 (.70)	4.30 (.59)
Range	4.75-9	2.42- 6.75	60-170	3.63- 5.68	0-22	1-3.20	1.86-4.6	3-5

Note: One tailed test was performed throughout. \*  $p < .05$ , \*\*  $p < .01$ .  $N = 4$

In order to understand each variables' contribution, a multiple regression analysis was conducted with the child's easy temperament, maternal well-being, household chaos, and support to mother-child relationship quality (see Table 2). The overall model was significant  $F(4, 40) = 4.32, p < .01$  and 23% of the variance was explained, meaning that easy temperament, maternal well-being, household chaos, and support explained 23% of the mother-child relationship quality. When all variables were in the model, child easy temperament ( $B = .28, p < .05$ ), child-care support ( $B = .24, p < .05$ ) and household chaos ( $B = -.23, p < .05$ ) were significant variables. However, maternal well-being was not significant.

Table 2.  
**Multiple Regression Model**

	Multiple Regression Model						
	<i>t</i>	<i>p</i>	<i>B</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>Adj R<sup>2</sup></i>
Overall Model				4.32	40	.005	.23
C-Temperament	2.11	.020	.28				
Maternal Well-being	-1.25	.109	-.17				
Household Chaos	-1.71	.047	-.23				
Child-care Support	1.79	.040	.24				

Note. One tail test was performed and standardized B values are reported.  $N = 45$

## Discussion

The study aimed to understand the associates of mother-child relationship quality when expecting a second child. We expected three domains, maternal personal resources (well-being and effortful control), child characteristics (temperament and behaviour problems) and contextual factors (chaos, child-care support and marital satisfaction) to relate with mother-child relationship quality. Importantly, we used observational methods to measure mother-child relationship quality and child temperament which provides objectivity, by reducing bias in self-reports. The results showed that better maternal mental well-being, easier child temperament meaning that better effortful control skills and lower negative affect, less household chaos and more child-care support were associated with better mother-child relationship quality. Furthermore, all of the variables together explained 23% of the variance, and we revealed that child temperament skills and child-care support and household chaos provided an independent explanation of mother-child relationship quality.

We investigated all possible domains based on Belsky's model (Belsky, 1984) that may contribute to mother-child relationship quality. Belsky predicts that maternal

personal resources will be most important to predict mother-child relationship, however, we demonstrated that child easy temperament and child-care support were the strongest variables. Thus, while finding partial support for Belsky's overall model, we did not confirm his hypothesized ordering of parental well-being > support > child characteristics. In fact, we showed that parental well-being is no longer a determinant when support, chaos and child temperament were in the model.

The results were consistent with previous literature suggesting that child temperament is related to the mother-child relationship (Wittig & Rodriguez 2019). Our findings support and extend this work to observed maternal behaviour. Child-care support was operationalised as the number of support mothers perceive and how helpful each resource is in terms of child-care. We demonstrated that child-care support were associated with mother-child relationship quality even after controlling for chaos, child temperament and maternal well-being. Previous literature has examined social support in general (Angley et al., 2015), and demonstrated an association with parenting. The results of the study show us the importance of practical child-care support when explaining mother-child relationship quality. There is however some evidence from previous research to support our finding. Material support such as helping in child-care and household jobs was helpful in the transition to siblinghood for mothers coping with first-born needs (Jordan, 1989). The current research extends the literature to show that child-care support is related to mother-child relationship quality during pregnancy before sibling arrival.

Finally, household chaos was a significant variable after controlling for child-care support, maternal well-being and child temperament skills consistent with previous research (Marsh et al., 2020). However, since the reliability of the scale was low, the results should be interpreted carefully, and future studies should use a higher reliability scale. On the other hand, maternal well-being was not a significant contributor. *Post hoc* power calculations by using G\*Power 3.1 (Faul et al., 2009) demonstrated good power of .80 with a medium effect size of the study ( $f=.30$ , (Cohen, 1977). Another important point to consider is that the sample was well-adjusted. Future studies should aim to include a more representative sample of mothers. A very recent study demonstrated that lower parental effortful control and executive functioning predicted more negative parenting in homes with a moderate level of household chaos (Geeraerts et al., 2020). The more positive mother-child relationship could also be linked with better effortful control skills as well as less chaos in the house. Future studies with a larger sample size would enable more complex analyses like moderation.

The study has some limitations that imply further improvement for research on this topic. First of all, the sample size was relatively small. The sample of the study was also socially advantaged considering the fact that 93.7 % of the mothers were highly educated. Future studies should aim to include larger and more diverse samples. Another issue is that the study aimed to have two-time points originally, to include a second-time point 4 months after the second child's birth. However, because of the COVID-19 pandemic, we had to stop home visits. It would be illuminating to test change in mother-child relations and predictors across at least two-time points. It is worth to mention current research

aimed to have paternal data too, but the contribution rate was very small, future studies need to target fathers to have a complete picture. However, the current study does highlight the period of a second pregnancy, a critical and stressful time period for understanding mother-child relationships. Moreover, understanding correlates may help to develop interventions to improve mother-first-born relationships which seem to be disrupted in this transition.

The study is novel in the context of the sample: mothers expecting second children and contributed to the literature on mother-child relationship quality when expecting a second child. Considering the disruption in the mother-first-born relationship (e.g., Kojima et al., 2005; Taylor & Kogan, 1973; Teti et al., 1996) and first-born children's adjustment problems (Volling, 2017), by highlighting the relationship in this time, families can prepare to have the second child into the family better. Some practical suggestions for intervention emerge from the findings of the current study. Improving child temperament like boosting effortful control skills, providing more child-care support for families, and reducing household chaos may improve mother-child relationship quality. Temperament is conceptualised as stable across time and situation, but in fact, studies show that children's effortful control skills can be fostered (Chang et al., 2015; Gauvain, 1995). Effortful control can be a fruitful target to intervene such as playing games to improve executive functioning and attention, waiting for a desirable item, rewarding waiting times, and praising for waiting and controlled behaviour are all concrete ways to foster effortful control. For example, children's effortful control skills were improved by interventions designed to improve proactive parenting and mothers' verbal scaffolding at age 3, promoted children executive processing and problem solving skills in later years (Chang et al., 2015; Landry et al., 2002). Finally, providing resources for child-care support may also improve mother-first-born interaction when they are together. Improving mother-child relationship quality may also benefit child outcomes as well as foster more harmonious family functioning.

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