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Disciplinary behavior of mothers of preschool children: Effects of maternal efficacy beliefs, children's gender and age, and mothers' education

Comportamentos disciplinares em mães de crianças de idade pré-escolar: efeito das crenças de eficácia maternas, do sexo e idade das crianças e da escolaridade materna

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Abstract

Disciplining a child is one of the most challenging parental tasks. Efficacy beliefs contribute to make this experience more or less successful. The purpose of this study is to examine the predictive role of efficacy beliefs on maternal disciplinary behavior. A total of 128 mothers of pre-school aged children participated in this study. They were asked to complete the Parental Disciplinary Behavior Scale and the Efficacy Subscale of the Parenting Sense of Competence. Results showed that mothers use inductive behavior more frequently and perceive these behaviors as the most effective ones. Power assertion is explained by the child's age, the mother's educational level, her perception of parental self-efficacy and also by her maternal beliefs about the effectiveness of both power assertion and non-physical punishment. Non-physical punishment is explained by maternal beliefs regarding the effectiveness of both non-physical punishment and inductive behavior. Finally, induction is explained according to the child's gender and the maternal belief about the effectiveness of these inductive behaviors. These results are especially relevant to the field of parenting intervention, underlining the importance of addressing efficacy beliefs to promote behavioral change.

Keywords: Child discipline; Culture; Educational practices; Parenting; Self efficacy.

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Resumo

Disciplinar uma criança é uma das tarefas parentais mais difíceis. As crenças de eficácia contribuem para o (in)sucesso dessa experiência. Este estudo pretende analisar o papel preditivo das crenças de eficácia nos comportamentos disciplinares maternos. Participaram neste estudo 128 mães de crianças de idade pré-escolar, a quem foi pedido que respondessem a um Questionário de Comportamentos Disciplinares Parentais e à Subescala de Eficácia da Escala Ser Mãe/Pai. Os resultados mostram que as mães usam mais frequentemente os comportamentos indutivos, avaliando-os como mais eficazes. Os comportamentos de afirmação do poder são explicados pela idade da criança, nível educativo materno, percepção de auto-eficácia e crença na eficácia das estratégias de afirmação do poder e de punição não-física. Os comportamentos de punição não-física são explicados pelas crenças acerca da eficácia destes comportamentos e dos comportamentos indutivos. Finalmente, os comportamentos indutivos são explicados pelo género da criança e pelas crenças acerca da sua eficácia. No âmbito da intervenção na parentalidade, estes resultados sublinham a importância de intervir nas crenças de eficácia, para promover a mudança comportamental.

Palavras-chave: *Disciplina da criança; Cultura; Práticas educativas; Parentalidade; Autoeficácia.*

Throughout the socialization process, parents are regularly confronted with situations in which their children transgress rules and moral standards, or simply exhibit socially inappropriate behaviors. These situations are usually designated as disciplinary incidents (Baumrind, 1997; Kremer, Smith, & Lawrence, 2010) and lead parents to control and redirect children's behaviors by means of a disciplinary action.

Parental disciplinary behaviors

Parental disciplinary behaviors include a wide range of coercive and non-coercive responses to eliminate misbehaviors and encourage the adoption of socially adjusted behaviors in children. Thus, parental disciplinary behaviors represent a form of social control; they are an important component of parenting, which is present early in children's daily lives (Baumrind, 1997; Cruz, 2013).

Following the seminal work of Hoffman (1985), the categories of disciplinary behaviors usually reported in the literature are power assertion and induction. Literature reveals that most research on parental disciplinary practices, its determinants and effect on children's development and adjustment, have focused on power-assertive behaviors and particularly on physical punishment (Kim & Kochanska, 2015; Kremer et al., 2010). Power assertion involves the use of explicit coercion, encompassing physical punishment as well as non-physical punishment behaviors, such

as threat of punishment and reprimands, without focusing on underlying norms and reasons for the child to behave adequately. Induction includes the presentation of a rationale for the demands parents make on their children and the stimulation of children's reasoning about the consequences of their own behavior (Cruz, 2013; Sorbring, Rodholm-Funnemark, & Palmérus, 2003).

Power assertion and induction differ also in the impact they exert upon children's development (Hoffman, 1985). Power assertion appears to be effective to elicit immediate compliance in children, possibly due to the high degree of coercive pressure used (Kuczynski, Kochanska, Radke-Yarrow, & Ginius-Brown, 1987). However, the use of power-assertion tends to undermine long-term internalization of social rules and may even have a counterproductive effect in case of excessive use of such disciplinary techniques. In particular, coercive discipline is associated with children's emotional and behavioral problems (Kim & Kochanska, 2015; MacKenbach et al., 2014; Marin, Piccinini, Gonçalves, & Tudge, 2012). On the other side, inductive discipline appears associated with higher levels of child development and adjustment, facilitating, for example, the development of internalized moral orientation (Patrick & Gibbs, 2012), and committed compliance (Kremer et al., 2010). Moreover, mothers who displayed more inductive discipline had children who exhibited lower levels of aggression (Bombi, Norcia, Giunta, Pastorelli, & Lansford, 2015) and fewer externalizing problems (Choe, Olson, & Sameroff, 2013).

When facing children's misbehaviors in their daily interactions, parents rarely resort to a single disciplinary behavior, often using a combination of several strategies, simultaneously or sequentially (Cruz, 2013). For instance, parents can explain to their children the negative consequences of their misbehavior while reprimanding them. This verbal punishment behavior contributes to a greater efficacy in the transmission of inductive messages (Hoffman, 1985). Moreover, given a repeated display of inappropriate behavior by the child, parents' behaviors can change according to their appraisal of the effectiveness of their own behaviors. For example, Kremer et al. (2010) reported that, in nearly three quarters of disciplinary incidents, parents displayed several disciplinary strategies until they succeeded in making the child comply. Therefore, the perception that parents have of the effectiveness of disciplinary behaviors should be considered when we intend to understand these behaviors.

Parental behavior depends on a number of individual and contextual factors, such as parents' perceived effectiveness and self-efficacy regarding disciplinary behaviors, parents' education, and children's gender and age (Barkin, Scheindlin, Ip, Richardson, & Finch, 2007; Coleman & Karraker, 2000; Marin et al., 2012).

Parents' perceived effectiveness and self-efficacy on disciplinary behaviors

Parental cognitions play a central role in parent-child interactions (Bornstein, 2015). It is expected that parental cognitions significantly predict parents' rearing behaviors. Following Coleman and Karraker (1997), two key concepts are distinguished: parental effectiveness beliefs associated with specific disciplinary behaviors and general sense of parental self-efficacy. The former refers to beliefs in the effectiveness of particular behaviors, and the latter refers to the perception of one's own global competence to deal with child-rearing situations.

In relation to effectiveness beliefs, it is assumed that parents will more frequently resort to

behaviors that they anticipate to bear more effective results with their children. The risk of using coercive discipline was found to be higher when parents believe that physical punishment was a necessary disciplinary practice in child rearing, both for parents in Non-Western countries as for American mothers (Akmatov, 2011; Cappa & Khan, 2011). Hence, there is some evidence that parents' perception of effectiveness of high coercive power-assertive behaviors is associated with their use. Additionally, parents who feel less effective tend to display more coercive power-assertive behaviors, whereas parents with a higher sense of self-efficacy engage in more positive parenting behaviors (Coleman & Karraker, 2000; Murdock, 2013). Thus, to modify highly coercive parental behaviors, parental efficacy beliefs should be considered. However, there seems to be a gap in the literature regarding the impact of parental beliefs on the effectiveness of less coercive forms of discipline, such as non-physical and inductive behaviors, on the use of these behaviors, which is the gap this study aims at filling.

In contrast to particular effectiveness beliefs, the impact of parental self-efficacy on parenting has been widely examined in the literature. Parental self-efficacy refers to the perceptions that parents have about the ability to raise a child and influence their development in a positive way (Coleman & Karraker, 1997). Parental self-efficacy is negatively associated with coercive behaviors among mothers of pre-school children (Chau & Giallo, 2014; Khoury-Kassabri, Attar-Schwartz, & Zur, 2014; Murdock, 2013), coercive and inconsistent discipline among mothers of children with Attention Deficit and Hyperactivity Disorder (ADHD) (Beaulieu & Normandeau, 2012), increased child abuse potential and dysfunctional disciplinary style among Hispanic and Anglo-American parents (Rodriguez, 2008). Therefore, parents who feel less effective tend to display more coercive power-assertive behaviors. On the other hand, there is also some evidence that parents with a higher sense of self-efficacy engage in more positive parenting behaviors, being able to promote a warmer and more stimulating learning environment for the child (Chau & Giallo, 2014; Coleman & Karraker 2000; Murdock, 2013) and

use appropriate discipline (Beaulieu & Normandeau, 2012).

Parents' education

Contextual factors, such as social class and parental education have been predominantly associated with power assertion. The existing evidence shows that parents with lower education levels use power-assertive behaviors with their children more frequently (Barkin et al., 2007; Cruz, 2012; Marin et al., 2012; Sheehan & Watson, 2008; Sturge-Apple, Suor, & Skibo, 2014). Some of the main reasons for this association have been advanced in the literature. The first one concerns the presence of stressful life conditions that lead to the over use of negative control strategies (Bornstein, 2015). A second possible reason regards the greater consideration given to children's conformity to the detriment of their autonomy and self-direction by working-class parents (Tudge et al., 2013).

Children's gender

There is some evidence that power assertion is more frequently used by parents of male children, which is probably explained by the lower levels of self-control (Marin et al., 2012) and by the higher levels of activity and impulsivity usually shown by boys (Olino, Durbin, Klein, Hayden, & Dyson, 2013). Gender differences on parental disciplinary behaviors have also been noted by school-aged children. Except when they have a different gender sibling, both boys and girls believe that boys receive more physical punishment than girls (Sorbring et al., 2003). As far as we can ascertain, there is no evidence of child gender differences in parental disciplinary behaviors other than physical punishment.

Children's age

According to the attributional approach, the use of parental disciplinary behaviors across children's age is partially explained by age-related

changes in parents' attributions of competence and responsibility to the child which are also related to parents' affective responses. Mothers reported more negative affect in response to school-aged children than to preschoolers, and negative affect was a strong predictor of power assertion responses (Dix, Ruble, & Zambarano, 1989). However, a different study identified that parents were less likely to use spanking with school-aged children than with preschool-aged children (Choe et al., 2013), whereas non-physical punishment was more likely to be used with the older-age group (Barkin et al., 2007).

The current study

Most research on parental disciplinary behaviors does not focus on non-punitive behaviors. Additionally, no results or inconsistent results have been reported regarding the impact of parents' effectiveness beliefs, the mother's education level, and the children's gender and age on non-punitive behaviors. Hence, the purposes of this study were to examine the impact of effectiveness beliefs about using disciplinary behavior and general sense of parental self-efficacy, children's gender and age, and mothers' education in the prediction of disciplinary behaviors among mothers of preschool-aged children. The first hypothesis is that the effectiveness beliefs about specific disciplinary behaviors will have a positive effect on their use by mothers. The second hypothesis is that the mothers' sense of self-efficacy will have a negative impact on their power-assertive behaviors and a positive impact on their inductive behaviors. The associations between sociodemographic characteristics and non-punitive disciplinary behaviors will also be explored.

Method

Participants

Participants included 128 mothers of preschool-aged children (44.5% females), aged between 3.16 and 6.16 years-old ($M = 5.10$, $SD = 0.69$).

Participants were recruited in public ($n = 4$) and private kindergartens ($n = 4$) from the north of *Portugal*, namely the districts of *Porto* (62.5%), *Braga* (20.3%), *Viana do Castelo* (14.8%), and *Aveiro* (2.3%).

With regard to family composition, 98.4% of the mothers and 92.2% of the fathers lived with the child. As for the education level, 48.4% of the mothers and 38.1% of the fathers had university degrees, 27.3% of the mothers and 21.2% of the fathers completed the 12th grade, and 24.2% of the mothers and 40.7% of the fathers completed nine years of education or less. Mothers' and fathers' education level is correlated ($r = 0.74$, $p.001$). The majority of the children lived within a nuclear family (89.1%); 38.3% of the children were an only child, 51.6% had one sibling and 10.2% had two siblings.

Instruments

Sociodemographic information: A questionnaire about family demographics was filled by the mothers.

Parental disciplinary behaviors: The Parental Disciplinary Behaviors Scale (PDBS) was specifically developed to assess disciplinary behaviors in this study. The PDBS consists of 16 items related to coercive and non-coercive behaviors, with a five-point response scale (1 = never, 5 = always) designed for parents to assess the frequency with which they use these behaviors when children "misbehave".

A principal components analysis (with varimax rotation) of the 16 items was made, from which four dimensions were extracted: (1) a dimension including four items on the use of non-physical punishment behaviors ($\alpha = 0.68$; factor loadings range from 0.56 to 0.78) characterized by a moderate coercion level (removing privileges, time-out, and threats of punishment); (2) a dimension including four items related to the use of inductive disciplinary behaviors ($\alpha = 0.69$; factor loadings range from 0.57 to 0.82), characterized by a very low coercion level, yet of a confrontational nature (explaining the rules, explaining the consequences

and asking the child about the reasons for their behavior); (3) a dimension including three items related to the use of power-assertive behaviors ($\alpha = 0.66$; factor loadings range from 0.67 to 0.84), characterized by a high coercion level (slapping and hitting); and, (4) a dimension that includes four items related to the use of non-confrontation behaviors ($\alpha = 0.53$; factor loadings range from 0.50 to 0.70), characterized by a very low coercion level and absence of confrontation. Example items are: (1) I leave my child alone to think about what he/she has done; (2) I explain to my child the consequences of what he/she has done; (3) I slap my child; and (4) I ignore my child's misbehavior because it is the best strategy. The last dimension was not included in subsequent analyses due to its low internal consistency. Composite scores for the three dimensions were computed by averaging the respective items.

Beliefs about the effectiveness of disciplinary behaviors: A second part of the PDBS was specifically developed for this study in order to evaluate the perception of parents about the effectiveness of each of the disciplinary behaviors listed in the 16 items. A 3-point response scale (1 = Not effective; 2 = Effective; 3 = Very effective) was used. A pilot study with five mothers of pre-school children confirmed that mothers easily understood what they were being asked for in all listed items.

The above-mentioned dimensions were used in the analysis of maternal beliefs about the effectiveness of disciplinary behaviors, yielding an *alpha* coefficient of 0.74 for non-physical punishment, 0.64 for power assertion and 0.70 for induction. Likewise, composite scores were built based on the means of the corresponding items.

Parental self-efficacy: The Portuguese version of the Efficacy subscale of the Parenting Sense of Competence (Johnston & Mash, 1989) was used. Efficacy is an instrumental dimension that reflects competence, problem-solving skills, and the ability to play the parental role and can be understood as the competence perceived by parents regarding parenting (Johnston & Mash, 1989). This subscale consists of seven items that are answered on a 6-point scale (1 = strongly agree, 6 = strongly

disagree). Higher scores indicate more positive parenting experiences. Johnston and Mash (1989) found a reasonable amount of internal consistency ($\alpha = 0.76$). In Portugal, in a sample of socially at-risk mothers and clinically referred mothers, after withdrawing one item, an α coefficient of 0.87 was found (Cruz & Abreu-Lima, 2013). In the present study, this coefficient was 0.67.

Procedures

This study was approved by the Ethics Committee of the Faculty of Psychology and Education Science of the University *do Porto*. After obtaining authorization from school boards to conduct the study, mothers were informed by preschool teachers about the study. Those who volunteered to participate were asked to sign an informed consent form and to fill in the questionnaires at home. A total of 267 mothers were recruited, from which 128 returned fully completed questionnaires, corresponding to a 47.9% response rate.

Results

The criteria for normal distribution were generally met, which considering the size of the sample, led to the decision of using statistical

parametric tests. Thereafter, descriptive and correlational analyses were performed. Induction stood out as the most frequent disciplinary behavior ($M = 4.06$, $SD = 0.64$), followed by non-physical punishment ($M = 2.84$, $SD = 0.65$) and by power assertion ($M = 1.84$, $SD = 0.57$). Regarding the perception of effectiveness of these behaviors, it was found that induction was seen as the most effective parental disciplinary behavior ($M = 3.73$, $SD = 0.66$), followed by non-physical punishment ($M = 3.22$, $SD = 0.80$), and lastly by power assertion ($M = 2.01$, $SD = 0.74$).

All parental disciplinary behaviors correlated positively and moderately with the perception of effectiveness specifically assigned to them, meaning that mothers evaluate the behaviors they use as effective. Further analyses show that mothers who use non-physical punishment also tend to resort to power assertion and induction. On the other hand, no association was found between power assertion and induction (Table 1).

Regarding the effectiveness assigned to each type of behavior, mothers who consider non-physical punishment as effective tend to have the same perception regarding power assertion ($r = 0.31$, $p < 0.001$) and induction ($r = 0.37$, $p < 0.001$). Additionally, mothers who use more power assertion tend to evaluate induction as an ineffective technique and vice-versa (Table 1).

Table 1
Correlations among predictor and outcome variables

Variables	Power-assertive behaviors	Non-physical punishment behaviors	Inductive behaviors
Power-assertive behaviors	-		
Non-physical punishment behaviors	0.19*	-	
Inductive behaviors	-0.03	0.37***	-
Power assertion effectiveness	0.57***	0.28***	-0.02
Non-physical punishment effectiveness	-0.01	0.67***	0.35***
Induction effectiveness	-0.22**	0.06	0.59***
Sense of self-efficacy	-0.08	-0.04	-0.01
Child's gender ¹	-0.03	0.14	0.31**
Child's age (months)	0.27**	-0.02	0.00
Mother's educational level	-0.31**	0.10	0.03

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ¹0: Female; 1: Male.

The use of inductive practices varies significantly depending on the children's gender, $t(126) = -3.61, p = 0.000$. Mothers of boys ($M = 4.23, SD = 0.58$) presented more inductive behaviors than mothers of girls ($M = 3.84, SD = 0.65$). Mothers tended to resort mostly to power assertion the older their children were. The higher the education level of mothers, the less they tend to resort to power-assertive behaviors.

Regression analysis

Three hierarchical linear regression models, one for each disciplinary behavior, were performed using the forced entry method to test the study's hypothesis, including effectiveness beliefs about disciplinary behavior, general sense of parental self-efficacy, children's gender and age, and mothers' education as predictors.

The regression model regarding power assertion explained 43% of the variance. The child's age, mother's education, sense of efficacy and effectiveness attributed to power assertion and to non-physical punishment behaviors were significant predictors of the outcome variable, as presented in Table 2. Power assertion disciplinary behaviors were mostly performed by mothers of older children, with

lower education and lower sense of self-efficacy, and by mothers who considered power assertion as effective and non-physical punishment behaviors as less effective.

After entering all predictors, the regression model for non-physical punishment explained 46% of the variance. The effectiveness attributed both to non-physical punishment, and to inductive behaviors were significant predictors of the outcome variable (Table 2). Non-physical punishment behaviors were mostly performed by mothers who considered these punishment behaviors effective, and by mothers who considered inductive behaviors less effective.

Finally, the regression model regarding inductive behaviors explained 36% of the variance. The child's gender and mothers' effectiveness attributed to inductive behaviors were significant predictors of the outcome variable, as presented in Table 2. Inductive behaviors were mostly performed by mothers of boys, and by mothers who considered these behaviors effective.

Discussion

The purpose of the present study was to analyze the impact of mothers' beliefs about the effectiveness of disciplinary behaviors and mothers'

Table 2
Hierarchical linear regression models of parental disciplinary behaviors

Predictor variables	Power-assertive behaviors				Non-physical punishment behaviors				Inductive behaviors			
	β	t	$r^2_{adj.}$	F	β	t	$r^2_{adj.}$	F	β	t	$r^2_{adj.}$	F
			0.43	14.75***			0.46	16.46***			0.36	11.27***
Child's gender ¹	-0.03	-0.49			0.01	0.18			0.17	2.25*		
Child's age	0.19	2.78**			-0.01	-0.19			0.03	0.43		
Mother's educational level	-0.15	-2.14*			0.07	0.96			-0.03	-0.37		
Sense of self-efficacy	-0.19	-2.77**			-0.03	-0.37			-0.05	-0.65		
Power assertion effectiveness	0.59	7.47***			0.06	0.72			0.07	0.08		
Non-physical punishment effectiveness	-0.16	-2.03*			0.72	9.09***			0.13	1.46		
Induction effectiveness	-0.06	-0.78			-0.21	-2.75**			0.51	6.32***		

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ¹0: Female; 1: Male.

sense of self-efficacy on the frequency with which disciplinary behaviors are used with their preschool-aged children. A first aspect to be noted was that the three disciplinary behaviors were explained by different sets of predictors, as discussed below.

Power assertion was explained both by sociodemographic variables and efficacy beliefs. In relation to sociodemographic variables, children's age and mothers' education had a significant impact on the use of disciplinary behaviors. The increase in the frequency of power assertion between ages 3 and 5 may be related to an increase in the mother's expectations regarding the children's appropriate behavior. It is likely that as the child gets older, mothers consider that they become more able to behave "properly" and become less tolerant towards misbehavior (Dix et al., 1989). Additionally, less educated mothers appear to make greater use of power assertion, which is supported by research suggesting that parents with lower education levels use harsher practices (Barkin et al., 2007; Cruz, 2012; Marin et al., 2012; Sturge-Apple et al., 2014). Low education levels are usually associated with a number of stress factors that make up the daily lives of families and promote the use of more coercive disciplinary strategies (Bornstein, 2015). On the other hand, it is likely that these mothers use a rearing approach which is more focused on solving short-term disciplinary incidents and, in fact, power assertion strategies seem to be more effective at this level (Kuczynski et al., 1987).

Regarding efficacy beliefs, there was a significant impact of both maternal beliefs about the effectiveness of disciplinary behaviors and maternal sense of self-efficacy on power-assertive behaviors. The more the mothers believed that these behaviors were effective, and the lower their sense of self-efficacy was, the more likely they were to resort to these coercive strategies. These results are consistent with the literature on parenting beliefs about the effectiveness of physical punishment (Akmatov, 2011; Cappa & Khan, 2011) and its negative relationship with self-efficacy (Beaulieu & Normandeau, 2012; Murdock, 2013; Rodriguez, 2008), suggesting that the use of more coercive discipline strategies is related to two

cognitive processes. The first involves believing that power assertion is an effective child rearing practice. Although power assertion is the least used strategy by the mothers in this study, it is likely that the belief in its efficacy has strong cultural roots in Portugal (Ribeiro, Malta, & Magalhães, 2011). The second consists of the self-assessment made by parents as being ineffective or incompetent. It is possible that parents who assess themselves as less competent interpret children's misbehavior as a threat to their competence, overreacting to restore their sense of personal competence as parents. Since this study did not include a measure of children's behavior, we do not know whether this perception of lower efficacy is enhanced by the frequency of children's misbehavior. For instance, the difficult temperament of the child is a challenge to the sense of parental competence and can contribute, at least in some cases, to a decrease in parental sense of self-efficacy (Karraker & Coleman, 2005).

The use of non-physical punishment was not explained by sociodemographic variables. Likewise, this behavior was not explained by mothers' sense of self-efficacy. This result indicates that the use of non-physical punishment by mothers is quite pragmatic since it depends mainly on the evaluation of its effectiveness. Furthermore, the evaluation of inductive behavior as effective was a negative predictor. Thus, mothers who resort more frequently to non-physical punishments tend to think that these disciplinary behaviors are an effective strategy to deal with the child's misbehavior and that the use of inductive strategies, on the other side, is not effective.

Inductive behaviors were predicted by the child's gender, these behaviors being more likely to be used by mothers of boys. No data are available in the literature to support these results, since gender differences have been identified primarily in power assertion and not in induction. It is known that boys tend to present a temperament characterized by lower levels of self-control (Marin et al., 2012) and by higher levels of activity and impulsivity (Olino et al., 2013). These temperamental traits may explain the use of more inductive behaviors by the participants in this study. Since most

mothers in this study have on average a high level of education, and are therefore less prone to use coercive behaviors, it is possible that they resort to more inductive strategies as an alternative way to control the behavior of boys. There is some evidence that mothers use inductive behaviors more frequently in response to the aggressive behavior of school-aged children (Sheehan & Watson, 2008). It is noteworthy that mothers of boys in the current study also tend to perceive inductive behaviors (and non-physical punishment) as more effective. Since girls present higher levels of self-regulation, the need to use inductive behaviors that promote the internalization of norms is not as crucial to them, contrary to what happens with boys. The results also evidence the relationship between the evaluation of the effectiveness of inductive discipline and the higher frequency of these behaviors.

The results of the present study contribute to a better understanding of the factors that underlie the use of disciplinary behaviors, both coercive and non-coercive. The first hypothesis was confirmed – maternal beliefs about the effectiveness of disciplinary behaviors are the strongest predictor of their use. This means that when mothers consider a behavior to be effective they become more likely to use it. These data are relevant in the context of parental intervention, since promoting positive parenting requires the promotion of a positive discipline. As the beliefs mothers have about the effectiveness of disciplinary action explain the disciplinary behaviors they use, parenting interventions should include, in addition to the change of disciplinary practices, a parallel focus of cognitive nature, *i.e.*, on the change of effectiveness beliefs.

Regarding the second hypothesis, it was partly confirmed. Mothers' sense of self-efficacy appeared as a predictor only for the most coercive disciplinary behaviors. Unlike Beaulieu and Normandeau (2012), we found no evidence of an association between parental self-efficacy and inductive behaviors. However, it should be noted that the participants of that study were mothers of children with ADHD, this condition being an additional challenge to parental disciplinary action

and their sense of self-efficacy. The negative effect of self-efficacy in the frequency of power assertion emphasizes the importance of including the perception of parental competence as a focus of intervention in parenting programs. In fact, evaluation protocols of the effects of parenting interventions usually comprise, in addition to parental and children's behavioral measures, parental sense of self-efficacy measures.

The results of this study should be considered taking into account three limitations. First, most of the mothers enrolled in the study present higher education levels than the average for the Portuguese population and were more available to participate in the research. Therefore, these results should be replicated with less educated samples, which, according to literature, resort more frequently to physical punishment. Second, the present research used mothers as a single source of information. Other methodological procedures, for example the observation of behavior or other information sources, would support the validity of these findings. Finally, a measure of children's characteristics is missing in this study. The literature has evidenced children's effects on their parents, for example, the temperamental characteristics of the child explain the observed differences in parental behavior (Karraker & Coleman, 2005). Disciplinary incidents tend to be solved more easily when children have an easy temperament than when they have a difficult temperament. Thus, the characteristics of children, determining the disciplinary practices of parents, can also have an indirect effect on their effectiveness beliefs and sense of self-efficacy and should be considered in future studies.

In short, the results point to the consistency between maternal disciplinary behaviors and beliefs about the effectiveness of those behaviors, suggesting additionally the negative effect of the sense of self-efficacy on more coercive behaviors. These results are especially relevant for the domain of parental intervention, stressing the importance of parenting programs focusing both on changes in parental effectiveness beliefs and on changes in parental rearing behaviors.

Contributors

C. CARVALHO collaborated in the definition of the study's objectives, in the literature review, in the definition of the methodological plan design and in the conduction of the analysis and discussion of the results. She was also responsible for the recruitment of the participants, for data collection and data entry. O. CRUZ collaborated in defining the study's objectives and design. She supervised the analysis and discussion of the results and reviewed the manuscript before the submission.

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