



Uncovering the links between parenting stress and parenting styles: The role of psychological flexibility within parenting and global psychological flexibility

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ABSTRACT

This study aimed to explore the role of psychological flexibility within parenting in the relationship between parenting stress and parenting styles (authoritative, authoritarian and permissive) in mothers of early and middle-aged children, as well as the moderator role of global psychological flexibility. The sample comprised 250 mothers of children between 2 and 12 years old, recruited online and in-person, who answered to self-report questionnaires assessing anxiety/depression symptoms, parenting stress, psychological flexibility within parenting, global psychological flexibility and parenting styles. The mediating model presented a very good fit for the data ($CFI = 0.95$, $RMSEA = 0.07$, $90\% CI = 0.046/0.094$) and has shown to be invariant across mothers of different age groups. Direct and indirect effects were found, with parenting stress affecting parenting styles directly, and indirectly, through psychological flexibility within parenting. The lower levels of psychological flexibility within parenting were translated into lower use of authoritative parenting style and into a higher use of authoritarian or permissive styles of parenting. Also, multigroup analyses showed that the model was variant as a function of global psychological flexibility ($\Delta\chi^2_{(10)} = 138.09$, $p < .001$) supporting the buffer effect of global psychological flexibility in these relationships. Our results are innovative by highlighting the important role of psychological flexibility within parenting as a self-regulatory skill in the mother-child relationship, as it influences the mothers' ability to regulate their emotions and behavior in a way that promotes a sensitive response to the child's needs and good parenting practices, even in the presence of stressful demands (parenting stress).

The impact parents have on a child's life is both significant and enduring (Lipps et al., 2012), as they play an important role in the promotion of the child's physical, cognitive and socioemotional development (Agarwal & Alex, 2017; Lamborn, Mounts, Steinberg, & Dornbusch, 1991). Parenting is a complex activity that includes different patterns of parental values, practices, and behaviors – also known as *parenting styles* (Baumrind, 1991) – which work individually and together to influence children's outcomes (Deater-Deckard, 2005; Mahapatra & Batul, 2016). Parenting styles can be influenced both by factors related to the child (e.g., child's health status) and to the parent (e.g., Cheah, Leung, Tahseen, & Schultz, 2009; Woolfson & Grant, 2006; Xu et al., 2005). Therefore, a better understanding of how the parent's characteristics can affect parental styles is pivotal to promoting the child's development and positive outcomes.

1. Parenting styles and its impact on child's outcomes

According to Baumrind (1971; 1991), parenting styles reflect different combinations of two important dimensions of parenting: parental responsiveness (parental warmth or supportiveness) and parental demandingness (or behavior control); these different combinations describe the manner in which parents reconcile the child's need for both limit-setting and nurturance. The authoritative parenting style is characterized by high levels of both responsiveness and demandingness. Parents who adopt this parenting style are attentive and receptive to their child's opinions and individual characteristics and explain the reasons for their norms and actions, providing a balance between freedom and responsibility (Baumrind, 1971, 1991; Ross & Hammer, 2002). High levels of demandingness and low levels of responsiveness are characteristic of the authoritarian parenting style. Parents who

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adopt this parenting style display low levels of warmth and nurturance, are not very sensitive to their child's needs and opinions, exert high levels of control, expect children to follow their specific and rigid rules and frequently use punishment to obtain compliance (Baumrind, 1971, 1991; Hutchison, Feder, & Winsler, 2016). Finally, the permissive parenting style is characterized by low levels of demandingness and high levels of responsiveness to the child's needs (Ross & Hammer, 2002). Parents adopting this style have few explicit rules, provide little to no structure or expectations, and consult their children to make decisions (Baumrind, 1971, 1991; Neyen, Volpe, Selby, & Houtz, 2017).

Existing research has shown important associations between parenting styles and children's outcomes. An authoritative parenting style is associated with more positive adaptation outcomes in children (Alizadeh, Talib, Abdullah, & Mansor, 2011; Steinberg, Blatt-Eisengart, & Cauffman, 2006; Williams et al., 2009) and adolescents (Calafat, Garcia, Juan, Becona, & Fernández-Hermida, 2014; Lamborn et al., 1991). Specifically, the children of parents with a strong authoritative style tend to be more self-reliant, independent, cooperative and achievement-oriented (e.g., Baumrind, 1991; Daglar, Melhuish, & Barnes, 2011). In contrast, authoritarian and permissive parenting styles have been associated with less positive developmental pathways in youth (e.g., externalizing and internalizing problems and less social and emotional competence; Bagerpur, Bahrami, Fathi-Ashtiani, Ahmadi, & Ahmadi, 2007; Schaffer, Clark, & Jeglic, 2009; Stormshak, Bierman, McMahon, & Lengua, 2000; Williams et al., 2009).

2. Parenting stress and parenting styles

The numerous and fluctuating challenges and demands (e.g., educational demands and developmentally changing needs) of parenthood make parenting a stressful experience (Crnic & Low, 2002), at least into some degree. Parenting stress is defined as the subjective experience of distress resulting from the perceived imbalance between the demands of parenting and the available resources (Abidin, 1992; Deater-Deckard, 2004). There has been increasing evidence that the levels of stress experienced by parents may negatively impact their parenting styles. Specifically, research has shown a negative and significant association between parenting stress and authoritative parenting and a positive and significant association between parenting stress and authoritarian and permissive parenting styles (Carapito, Ribeiro, Pereira, & Roberto, 2018; Graves, 2016). Similarly, there is evidence that higher levels of parenting stress were displayed by parents presenting with an authoritarian style than by parents with an authoritative or permissive style of parenting (Park & Walton-Moss, 2012) and that parenting stress is associated with lower maternal sensitivity (Dau, Callinan, & Smith, 2019), less responsiveness and warmth towards the child (Cheah et al., 2009), and more punitive practices (Xu et al., 2005), which are characteristic features of the authoritarian style. The few studies exploring the changeability of parenting stress over time in parents of young children have found that there is significant inter-individual variability in patterns of parenting stress, depending on several maternal and child factors (Stone, Mares, Otten, Engels, & Janssens, 2016; Williford, Calkins, & Keane, 2007), some of which being stable in nature (e.g., child's gender, child's medical condition). Given the well-established negative impact of maladaptive (authoritarian or permissive) parenting styles on the child's outcomes, it is important to better explore the mechanisms through which higher levels of parenting stress may result into maladaptive parenting styles, trying to identify some psychological processes that may be amenable to change and result into more adaptive parenting practices, even in situations where high parenting stress is inevitably present. One such psychological process may be psychological flexibility within parenting.

3. Psychological flexibility within parenting: A pathway between parenting stress and parenting styles?

Psychological flexibility within parenting is an application of the broader construct of psychological flexibility – a key process of change in Acceptance and Commitment Therapy (ACT) (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Pistorello, & Levin, 2012) – in the parent-child relationship. Psychological flexibility within parenting may be defined as the individual's ability to nonjudgmentally accept changes and negative thoughts and emotions (e.g., self-doubt, fear) in relation to their parenting experience, as well as to engage in value-based behaviors that promote sensitive responses to their child's needs and good parenting practices (e.g., to express support and set limits; Brassell et al., 2016; Burke & Moore, 2015).

Specifically, psychological flexibility within parenting seems to act as an individual emotion-regulation resource to deal with the negative private experiences related with the parenting role. All parents experience parenting stress to some degree as a result of parenting demands (Hakvoort, Bos, Van Balen, & Hermanns, 2012), which may translate into more frequent negative private experiences (negative emotions and thoughts) that they feel ashamed to experience. Parents with lower psychological flexibility within parenting tend to negatively evaluate their unpleasant inner experiences of parenting stress and tend to address them by using control, avoidance or suppression strategies (Burke & Moore, 2015). Although the avoidance of inner experiences is an intentional strategy that seems to be effective in the short term, it has the paradoxical effect of amplifying the individual's inner negative experiences in the long term (Hayes et al., 2012; Hayes, Strosahl, & Wilson, 1999), which may heighten the parents' levels of stress and, consequently, contribute to the use of more inconsistent and maladaptive parenting practices (Sairanen, Lappalainen, & Hiltunen, 2018; Shea & Coyne, 2011). In fact, there is some evidence that parents with lower levels of psychological flexibility within parenting reported a greater tendency towards using ineffective parental practices (e.g., severe discipline, inconsistent rules; Brown, Whittingham, & Sofronoff, 2015; Burke & Moore, 2015). A parent's inability to be psychologically flexible in the context of parent-child interactions may hinder the child's ability to accept their inner experiences and appropriately respond to environmental demands with goal-directed actions (Williams, Ciarrochi, & Heaven, 2012), which, consequently, will have a negative impact on the child's adjustment (Cheron, Ehrenreich, & Pincus, 2009; Moyer & Sandoz, 2015).

4. The present study

The present study addresses the relationship between parenting stress and parenting styles within a sample of mothers of children in early [2–5 years old] or middle [6–12 years old] childhood (Collins, 1984; Doherty & Hughes, 2009), and the role of psychological flexibility within parenting in this relationship. Despite the increasing involvement of fathers in the caregiving role, mothers still assume greater responsibility for domestic and caring work whilst participating in paid work (Wattis, Standing, & Yerkes, 2013) and, thus, are still more likely to assume the majority of childcare tasks, particularly the mothers of younger children (Ramos, Atalaia, & Cunha, 2016). To understand how maternal levels of parenting stress play a role in the use of different parenting styles is, therefore, of paramount importance to the design of tailored interventions to promote adaptive parenting practices.

Therefore, the first aim of our study is to explore the relationship between parenting stress and parenting styles (authoritative, authoritarian and permissive), and whether this relationship can occur directly and/or indirectly, through psychological flexibility within parenting. As several studies suggested a bidirectional association between worse maternal mental health and high levels of parenting stress (Cornish et al., 2006; McCloskey & Pei, 2019; Sakkalou, Sakki, O'Reilly, Salt, & Dale, 2018; Thomason et al., 2014), the maternal levels of psychological

distress (anxiety and depressive symptoms) were introduced as covariates in the path analysis model. Also, considering that the developmental challenges imposed on mothers may be different in early and middle childhood (Collins, 1984; Doherty & Hughes, 2009), we aimed to test the invariance of the model with respect to child's age group.

Furthermore, we are also interested in examining the role of global psychological flexibility in these relationships. Psychological flexibility is a context-dependent process (Hayes et al., 1999) that can vary according to the situations and according to what is most relevant to the individual (e.g., a parent may respond in a more flexible way to general emotional suffering than to parental emotional distress; Moyer & San-do, 2015). Although higher levels of global psychological flexibility were found to be associated with higher levels of psychological flexibility within parenting in one study (Brassell et al., 2016), further research is needed to better understand if the same pattern of relationships between parenting stress and parenting styles occur in mothers presenting high global psychological flexibility and low global psychological flexibility. The conceptual model is presented in Fig. 1.

5. Methods

5.1. Procedure

This study was a part of a broader cross-sectional study aiming to characterize the parenting experience during childhood. The study was approved by the Ethics Committee of Faculty of Psychology and Educational Sciences of University of Coimbra and data collection occurred between December 2017 and April 2018. Inclusion criteria to participate in the study included: a) being a mother of a child (between the ages of two and 12 years old – encompassing early [2–5 years old] and middle [6–12 years old] childhood); b) being 18 years or older; and c) being able to read and understand Portuguese. The sample was collected online ($n = 283$) and in one public basic education school in a central region of Portugal ($n = 51$). Although all participants recruited in person were part of the final sample, concerning online recruitment, 84 women were excluded because they did not complete at least one of the self-report questionnaires that comprised the assessment protocol for this study. The final sample comprised 199 women recruited online (79.6%) and 51 women recruited in-person (20.4%).

Concerning online recruitment, the online survey was hosted by LimeSurvey® and the participants were invited to participate in the

study through advertisements posted on social networks (e.g., Facebook®). Participants were informed about the study's goals and about the participant's (e.g., voluntary participation) and researcher's roles (e.g., guarantee of confidentiality). Before accessing the assessment protocol, participants gave their informed consent to participate in the study (by clicking on the option "I understand and accept the conditions of the study"). The software prevented missing data (items are marked as required).

For in-person recruitment, authorization was first asked to the board of directors of the school. The researchers invited the teachers of the classes to collaborate in the study by assisting them in presenting and distributing the assessment protocol to parents. Participants received, through their children, an envelope containing information about the study (study goals and participant's and researcher's roles), an informed consent form and the assessment protocol. Participants were asked to complete the assessment protocol at home and return it a week later. Research assistants collected the questionnaires at the school on a date agreed upon by the teachers.

Regardless of the recruitment method, parents who had more than one child were instructed to focus on one of their children (between two and 12 years old) when answering the questionnaires. While participants recruited online were instructed to think about their younger child when answering the questionnaires, participants recruited in-person were instructed to focus on the child who received the questionnaires at school.

5.2. Participants

The sample comprised 250 mothers of children between 2 and 12 years old who were mostly married/living with a partner ($n = 215$, 86.0%). The mothers' mean age was 37.5 years old ($SD = 5.38$, range = 20 to 51). The majority of mothers were currently employed ($n = 223$, 89.2%), had a monthly average income of 1000–1500€ ($n = 70$, 28.0%) or 1501–2000€ ($n = 62$, 24.8%), and had completed higher education ($n = 118$, 47.2%). More than half of the mothers had more than one child ($n = 149$, 59.6%), with 14.0% ($n = 35$) having three or more children. Concerning the children's data, the majority of children were male ($n = 128$, 51.2%) and the children's mean age was 5.84 years old ($SD = 2.91$, range = 2 to 12). The proportion of children in early childhood ($n = 120$, 48.5%) and the proportion of children in middle childhood ($n = 130$, 52.0%) was similar.

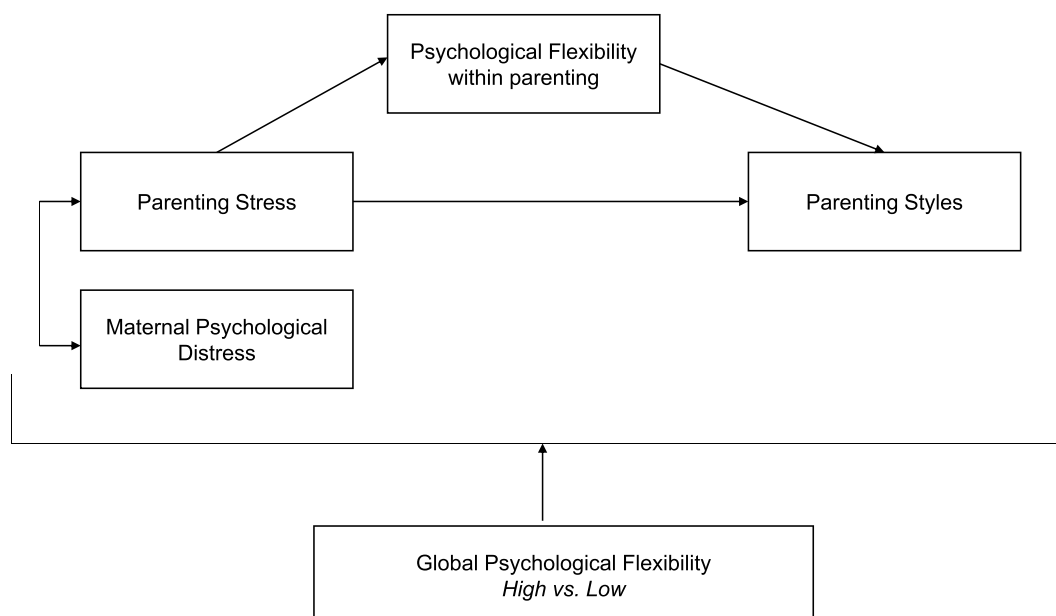


Fig. 1. Study conceptual model.

5.3. Measures

5.3.1. Sociodemographic information

A self-report form was developed to collect the mothers' socio-demographic (e.g., age, marital status, educational level, professional situation, income, and number of children) and children's data (e.g., gender, age).

5.3.2. Global psychological flexibility

The Portuguese version of the Acceptance and Action Questionnaire (AAQ-II; Bond et al., 2011; Pinto-Gouveia, Gregório, Dinis, & Xavier, 2012) was used to assess global psychological flexibility. Women were asked to rate each of the seven items describing the way they deal with their private negative experiences (e.g., "I'm afraid of my feelings") on a 7-point Likert scale (from 1 = *Never True* to 7 = *Always True*). Higher scores were reflective of higher psychological flexibility. The Portuguese version of the AAQ-II presented good psychometric properties (Pinto-Gouveia et al., 2012). In the present study, Cronbach's alpha was .93.

5.3.3. Anxiety and depression symptoms

The Portuguese version of the Hospital Anxiety and Depression Scale (HADS; Pais-Ribeiro et al., 2007; Snaith, 2003) was used to assess anxiety and depression symptoms. This scale is comprised of two subscales (Anxiety and Depression). Each subscale includes seven items to assess the presence of anxiety/depression symptoms in the previous week that are answered on a 3-point scale (e.g., "I feel tense or wound up"; "I feel as I am slowed down"). The total score for each subscale ranges from 0 to 21, with higher scores indicating more symptoms. A score of 11 or higher is indicative of probable presence ("caseness") of clinically relevant anxiety and/or depression symptoms. The Portuguese version of the scale presents good psychometric properties (Pais-Ribeiro et al., 2007). In our sample, Cronbach's alpha values were 0.84 (Anxiety) and 0.82 (Depression).

5.3.4. Parenting stress

The Portuguese version of the Parenting Stress Scale (PSS; Mixão, Leal, & Maroco, 2010) was used to assess the distress associated with the parental role (e.g., "Caring for my child sometimes takes more time and energy than I have to give"). This unidimensional scale comprises 18 items that are answered on a 5-point Likert scale (from 1 = *Strongly Disagree* to 5 = *Strongly Agree*). Higher scores were indicative of the presence of higher levels of parenting stress. The Portuguese version of the PSS scale showed adequate psychometric properties (Mixão et al., 2010). In our sample, Cronbach's alpha was .72.

5.3.5. Psychological flexibility within parenting

The Portuguese version of the Parental Acceptance Questionnaire (6-PAQ; Greene, Field, Fargo, & Twohig, 2015) was used to assess psychological flexibility in the context of mother-child interactions. The 6-PAQ is composed of 18 items assessing the mother's willingness to be in contact with their private inner experiences while engaging in value-based actions (e.g., "If someone criticizes my parenting, I must be a bad parent", "My parenting behaviors are based on what matters to me as a parent rather than how I feel in the moment"). Items are answered on a 4-point Likert scale (from 1 = *Strongly Disagree/Never* to 4 = *Strongly Agree/Almost Always*). Higher scores were indicative of higher levels of parental psychological flexibility. The Portuguese version of 6-PAQ showed adequate psychometric properties, suggesting the construct validity of the scale to assess psychological flexibility within parenting as a unidimensional construct. In our study, Cronbach's alpha was .86.

5.3.6. Parenting Styles

The Portuguese version of the Parenting Styles and Dimensions Questionnaire (PSDQ; Carapito et al., 2018; Robinson, Mandelco, Olsen, & Hart, 1995) was used to assess parenting styles. The PSDQ comprises 32 items describing different parental reactions to the child's behaviors

that are organized into a three-factor structure corresponding to the three dimensions of Baumrind's typology: Authoritative (e.g., "I explain the consequences of the child's behavior"), Authoritarian (e.g., "I use physical punishment as a way of disciplining my child"), and Permissive (e.g., "I find it difficult to discipline my child"). Items are answered on a five-point Likert response scale (from 1 = *Never* to 5 = *Always*). The Portuguese version of the PSDQ has shown adequate psychometric properties (Carapito et al., 2018). In our sample, the Cronbach's alpha values were 0.89 (Authoritative style), 0.76 (Authoritarian style) and 0.57 (Permissive style).

5.4. Data analyses

Data analyses were conducted using the Statistical Package for the Social Sciences (SPSS, version 22.0; IBM SPSS, Chicago, IL) and the AMOS 20 (IBM SPSS AMOS Version 20.0; IBM Corporation, Meadville, PA, USA). Descriptive statistics were conducted for sample characterization. Since two different data collection procedures were used, differences in study variables between mothers recruited online and in-person were analyzed through independent sample *t*-tests or MANOVAs.

Preliminary analyses were conducted to characterize the sample as a function of study variables. Mothers were classified as "Low Flexibility Group" and "High Flexibility Group" as a function of their scores on the AAQ-II (to assess global psychological flexibility). Mothers were classified in the "Low Flexibility Group" if they presented scores below the median score of the scale in the sample ($Mdn = 37$) and were classified in the "High Flexibility Group" if they presented scores equal or above the median score. Comparison analyses in the study variables as a function of flexibility group were performed through independent sample *t*-tests or MANOVAs. Moreover, Pearson correlations between study variables and between study variables and sociodemographic characteristics were computed. Cohen's guidelines for interpreting the magnitude of the correlations were used (i.e., small for correlations close to .10; medium for correlations close to 0.30; and large for correlations of 0.50 or higher).

To explore the direct and indirect effects of the relationship between parenting stress and parenting styles through psychological flexibility within parenting, a path analysis model was tested using the maximum likelihood estimation method. The sociodemographic variables that showed significant correlations with the study variables were introduced as covariates in the model, as well as psychological distress levels (i.e., anxiety and depression symptoms). The overall model fit was ascertained using the reference values for the main fit indices: the chi-squared goodness-of-fit statistic (p value > .05), the Comparative Fit Index (CFI; ≥ 0.95), the Root-Mean-Square of Approximation (RMSEA; ≤ 0.06) and the Standardized Root Mean Square Residual Statistic (SRMR; ≤ 0.08) (Hu & Bentler, 1999). Bootstrap procedures were used to test the significance of indirect effects, estimating 95% bias-corrected confidence intervals (95% CI). An indirect effect was significant if zero was not included within the lower and upper CIs. Given the cross-sectional nature of the study, an alternative model (in which parenting styles performed as independent variables, psychological flexibility within parenting performed as mediating variable, and parenting stress performed as dependent variable) was also tested, following the same procedures as described for the initial path model.

To investigate the structural invariance of the path model as a function of child's age group, multigroup analysis were performed. The unconstrained model (i.e., with no equality constraints imposed on the model parameters) was compared with a constrained model (a model in which structural weights and structural means are constrained to be equal across groups). A non-significant chi-square change ($\Delta\chi^2$) between the two models indicated that the path model was invariant across groups.

Finally, the same multigroup analysis procedure was used to test the structural invariance of the path model as a function of levels of global flexibility. If the model reveals to be variant across groups, the path

estimates for each model were independently reported.

6. Results

6.1. Preliminary analyses

Mothers were compared in terms of the study variables, as a function of the recruitment method (online vs. in-person). No significant differences were found for any study variable: Global Psychological Flexibility ($t_{248} = -0.19, p = .850$), Parenting Stress ($t_{248} = 0.30, p = .766$), Psychological Flexibility within Parenting ($t_{248} = 0.41, p = .680$), and Parenting Styles (Wilk's lambda = 0.97, $F_{(3, 246)} = 2.34, p = .074$). Therefore, both groups were combined and analyzed as a total sample.

Mothers were classified as a function of their levels of Global Psychological Flexibility (Low Flexibility group: $n = 117, 46.8\%$ vs. High Flexibility group, $n = 133, 53.2\%$). Table 1 presents the descriptives of the study variables for both groups. Mothers in the High Flexibility group presented significantly lower levels of Parenting Stress ($t_{248} = 6.56, p < .001$) and significant higher levels of Psychological Flexibility within Parenting ($t_{248} = -6.96, p < .001$). Concerning parenting styles, a significant multivariate effect was found (Wilk's lambda = 0.91, $F_{(3, 246)} = 8.22, p < .001$), with univariate tests showing that the Low Flexibility group presented a less frequent use of an authoritative style ($F = 6.23, p = .013$) and a more frequent use of authoritarian ($F = 16.53, p < .001$) and permissive ($F = 14.89, p < .001$) styles of parenting.

The correlations between the sociodemographic variables, maternal psychological distress, and the study variables are also presented in Table 1. Concerning sociodemographic variables, mothers with a higher educational level and income tend to use an authoritarian parenting style with a significant lower frequency. Concerning children's characteristics, mothers of female children were found to report a more frequent use of the authoritative parenting style. Therefore, these variables were introduced as covariates in the model. Moreover, higher levels of anxiety and depression symptoms were significantly and moderately correlated with higher parenting stress.

With regard to the study variables, higher levels of parenting stress were significantly and negatively associated with psychological flexibility within parenting and with the use of the authoritative parenting style, and positively and significantly associated with the use of maladaptive (authoritarian and permissive) styles of parenting. Higher psychological flexibility within parenting was also positively and moderately associated with the use of the authoritative parenting style, and negatively associated with the use of both permissive and authoritarian parenting styles.

Table 1

Descriptives and Pearson bivariate correlations between sociodemographic variables and the study variables.

	Global Psychological Flexibility		9.	10.	11.	12.	13.	14.	15.
	Low Flex. group M (SD)	High Flex. Group M (SD)							
1. Age	–	–	-.09	-.08	-.09	.01	-.03	-.06	-.10
2. Marital status	–	–	-.06	-.05	-.03	-.01	-.01	-.06	-.01
3. Professional status	–	–	.03	.03	.04	-.08	-.01	.09	.09
4. Educational level	–	–	-.09	-.09	.04	-.07	.09	-.15*	-.05
5. Income	–	–	-.20**	-.16*	-.08	-.05	.03	-.12*	-.04
6. Number of children	–	–	-.01	.01	.05	-.04	-.08	.08	.02
7. Child's age	–	–	.01	-.02	.01	-.02	.01	.11	-.08
8. Child's gender	–	–	-.03	-.04	-.07	.03	.21**	-.08	-.02
9. Psychological Distress - Anxiety Symptoms	9.46 (3.60)	4.82 (2.71)		.73***	.46***	-.43***	-.21***	-.39***	.29***
10. Psychological Distress - Depression Symptoms	7.38 (3.71)	3.32 (2.71)			.49***	-.47***	-.29***	.41***	.32***
11. Parenting Stress	41.87 (6.34)	36.87 (5.73)				-.60***	-.39***	.49***	.28***
12. Parental Psychological Flexibility	53.67 (6.46)	59.13 (5.94)					.50***	-.46***	-.46***
13. Parenting Styles - Authoritative	4.09 (0.58)	4.26 (0.48)						-.28***	-.12
14. Parenting Styles - Authoritarian	2.11 (0.47)	1.89 (0.40)							.44***
15. Parenting Styles - Permissive	2.28 (0.61)	2.00 (0.52)							–

Note. Marital status: 1 = Married/Living together, 0 = Single/Divorced; Professional status: 1 = Employed, 0 = Unemployed; Child's gender: 1 = Female, 0 = Male. * $p < .05$. ** $p < .01$. *** $p < .001$.

6.2. Relationship between parenting stress and parenting styles: The mediating role of psychological flexibility within parenting

An initial path model was tested to explore the direct and indirect relationships between parenting stress, psychological flexibility within parenting and parenting styles. Anxiety and depression were introduced as covariates in the model and were allowed to correlate between themselves and with parenting stress. Moreover, the residuals pertaining to the parenting styles were also allowed to correlate between themselves. The initial path model presented an acceptable fit to the data [$\chi^2_{(28)} = 100.96, p < .001$; CFI = 0.90; SRMR = 0.09; RMSEA = 0.10, $p < .001$, 90% CI = 0.081/0.124]. However, an examination of the modification indices suggested that income and education could be allowed to correlate to improve the model fit. The respecified model presented a very good fit to the data ($\chi^2_{(38)} = 59.84, p < .001$; CFI = 0.95; SRMR = 0.08; RMSEA = 0.07, $p = .082$, 90% CI = 0.046/0.094). Fig. 2 presents the standardized estimates of the path model.

As can be seen in Fig. 2, higher levels of parenting stress were directly associated with lower levels of psychological flexibility within parenting. Moreover, higher psychological flexibility within parenting was directly associated with the more frequent use of authoritative parenting style, and with the less frequent use of authoritarian and permissive parenting styles.

The effects of parenting stress on parenting styles were found to occur both directly and indirectly, through psychological flexibility within parenting, with the exception of the effect of parenting stress on permissive parenting style, which seems to occur only indirectly through psychological flexibility within parenting. Specifically, the indirect effects of psychological flexibility within parenting were found in the relationship between parenting stress and authoritative style [Estimate = $-.250$, 95% CI = $-0.345/-0.157$], authoritarian style [Estimate = 0.169 , 95% CI = $0.079/.263$] and permissive style of parenting [Estimate = 0.277 , 95% CI = $0.190/.394$]. Higher levels of parenting stress were associated with lower levels of psychological flexibility within parenting, which, in turn, translated into a less frequent use of an authoritative parenting style and a more frequent use of an authoritarian and/or permissive parenting style.

The structural invariance of the path model across children's age groups was tested. The unconstrained model presented a good fit to the data ($\chi^2_{(61)} = 96.45, p = .003$; CFI = 0.95; RMSEA = 0.048, $p = .537$, 90% CI = 0.029/.066). The constrained model, in which structural weights and structural means are constrained to be equal across groups, also presented a good fit to the data ($\chi^2_{(71)} = 107.47, p = .003$; CFI = 0.95; RMSEA = 0.046, $p = .650$, 90% CI = 0.027/.062). The comparison

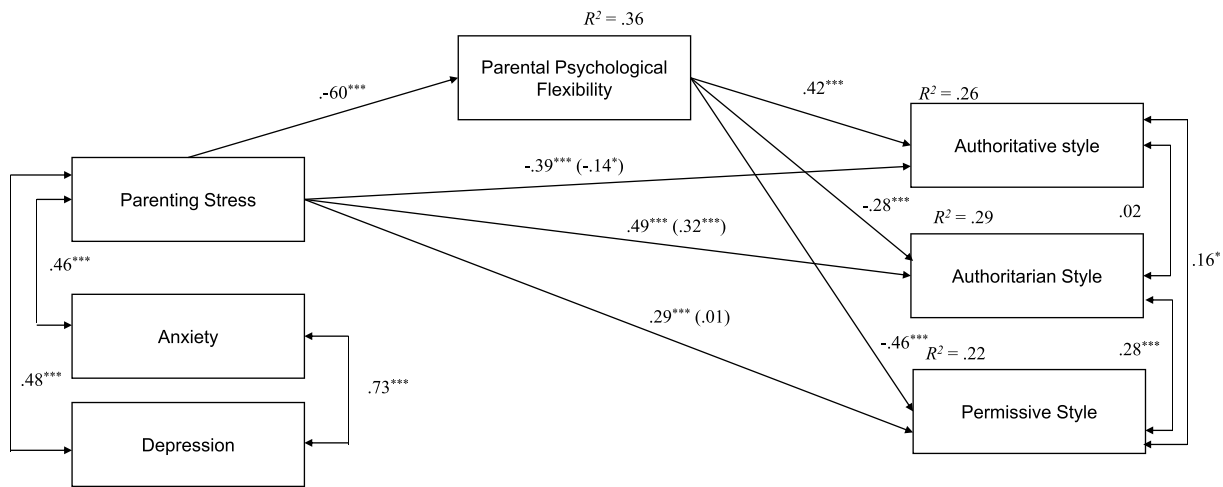


Fig. 2. Relationships between parenting stress and parenting styles: The mediating role of psychological flexibility within parenting. * $p < .05$; ** $p < .01$; *** $p < .001$. *Note.* Standardized path coefficients are presented. In the relationship between parenting stress and parenting styles, the total effects are presented outside the parentheses and the direct effects are presented inside the parentheses. The sociodemographic covariates introduced in the model were significantly associated with the study variables and authoritative parenting style: *Estimate* = .21, $p < .001$; educational level and authoritarian parenting style: *Estimate* = -0.181 , $p = .003$; income and educational level: *Estimate* = 0.388, $p < .001$, with the exception of the correlation between income and authoritarian parenting style (*Estimate* = -0.109 , $p = .066$).

of the unconstrained and constrained models suggested that the difference between the two models was not significant ($\Delta\chi^2_{(11)} = 11.02$, $p = .356$), which means that the relationships between the variables in the path model were invariant across age groups.

Finally, given the cross-sectional nature of the study, an alternative model was tested, in which the relationship between parenting styles and parenting stress through psychological flexibility within parenting was explored. The alternative model presented a poor model fit to the data ($\chi^2_{(27)} = 125.93$, $p < .001$; CFI = 0.86; SRMR = 0.15; RMSEA = 0.12, $p < .001$, 90% CI = 0.100/0.143). In the alternative model, the use of a more authoritative ($B = 0.407$, $p < .001$), and less authoritarian ($B = -0.203$, $p < .001$) or permissive ($B = -0.330$, $p < .001$) styles of parenting were associated with higher psychological flexibility within parenting. Moreover, higher psychological flexibility within parenting was significantly associated to lower parenting stress ($B = -0.338$, $p < .001$). However, only the direct effect of authoritarian parenting style on parenting stress was significant ($B = 0.234$, $p < .001$; Authoritative: $B = -0.108$, $p = .066$; Permissive: $B = -0.077$, $p = .196$). The indirect effect of psychological flexibility within parenting in the relationship between the three dimensions of parenting styles and parenting stress was found (Authoritative: *Estimate* = -0.158 , 95% CI = $-0.258/-0.093$; Authoritarian: *Estimate* = 0.079, 95% CI = 0.027/.142; Permissive: *Estimate* = 0.128, 95% CI = 0.063/.209).

6.3. The mediating role of psychological flexibility within parenting in the relationship between parenting stress and parenting styles: The moderating effect of global psychological flexibility

The moderating effect of Global Psychological Flexibility in the mediating model was tested through a multigroup analysis, comparing the path model across mothers presenting high global psychological flexibility (High Flexibility Group) and mothers presenting low global psychological flexibility (Low Flexibility Group). The unconstrained model, in which all parameters vary freely, presented a good fit to the data ($\chi^2_{(61)} = 93.70$, $p = .005$; CFI = 0.94; RMSEA = 0.046, $p = .604$, 90% CI = 0.026/.064), while the constrained model presented a poor fit ($\chi^2_{(71)} = 232.59$, $p < .001$; CFI = 0.69; RMSEA = 0.096, $p < .001$, 90% CI = 0.082/.110); the comparison between the unconstrained and the constrained models was significant ($\Delta\chi^2_{(10)} = 138.09$, $p < .001$) suggesting that the models vary across groups.

Table 2 presents the standardized parameter estimates for each

Table 2

Path model coefficients: Direct and indirect effects and correlates in the Low Flexibility Group and in the High Flexibility Group.

	Low Flexibility Group		High Flexibility Group	
	Estimate	p value	Estimate	p value
<i>Direct effects</i>				
Parenting Stress → PFP	-.570	<.001	-.474	<.001
Parenting Stress → Authoritative PS	-.058	.518	-.198	.023
Parenting Stress → Authoritarian PS	.252	.005	.359	<.001
Parenting Stress → Permissive PS	-.171	.096	.159	.071
PFP → Authoritative PS	.510	<.001	.321	<.001
PFP → Authoritarian PS	-.363	<.001	-.150	.088
PFP → Permissive PS	-.492	<.001	-.364	<.001
<i>Correlates</i>				
Parenting Stress <-> Anxiety Symptoms	.33	<.001	.30	<.001
Parenting Stress <-> Depressive Symptoms	.39	<.001	.34	<.001
Anxiety Symptoms <-> Depressive Symptoms	.640	<.001	.56	<.001
Authoritative PS <-> Authoritarian PS	.135	.111	.04	.631
Authoritative PS <-> Permissive PS	.240	.008	.073	.401
Authoritarian PS <-> Permissive PS	.235	.010	.344	<.001
<i>Indirect effects</i>				
Parenting Stress → PFP → Authoritative PS	-.291	-.423/-	-.152	-.265/-
Parenting Stress → PFP → Authoritarian PS	.207	.124/	.071	-.044/
Parenting Stress → PFP → Permissive PS	.280	.180/-	.173	.077/
		.438		.308

Note. PFP = Parental Psychological Flexibility. PS = Parenting Style. Standardized coefficients are presented.

group. For the Low Flexibility Group, the model presented and acceptable fit to the data ($\chi^2_{(27)} = 43.29$, $p = .024$; CFI = 0.94; RMSEA = 0.072, $p = .175$, 90% CI = 0.026/.111). For the High Flexibility Group, the

model presented a good fit to the data ($\chi^2_{(27)} = 35.40, p = .129$; CFI = 0.96; RMSEA = 0.049, $p = .488$, 90% CI = 0.000/.089).

An analysis of Table 2 shows some differences across groups. First, the direct effect of Parenting Stress on the Authoritative style of parenting only occurs in the High Flexibility Group. Second, the direct effect of Psychological Flexibility within Parenting in the Authoritarian style of parenting only occurred in the Low Flexibility Group. Third, the indirect effect of Psychological Flexibility within Parenting in the relationship between Parenting Stress and the Authoritarian style of parenting was only found in the Low Flexibility Group.

7. Discussion

The results of this study represent an innovative contribution to expand the current understanding of the relationships between maternal parenting stress and parenting styles, particularly by highlighting the role of psychological flexibility within parenting in these relationships, as well as the moderating role of global psychological flexibility. Some specific considerations of these findings can be made.

First, higher maternal levels of parenting stress were directly associated with higher use of parenting practices characteristic of an authoritarian style and with lower use of practices characteristic of an authoritative parenting style. It is possible that when confronted with challenging circumstances concerning the child's behaviors, expectations or needs, mothers displaying higher levels of parenting stress have greater difficulty during the parent-child interaction, namely, by trying to exert higher levels of control over the situation (e.g., being more commanding) and by showing less dyadic pleasure and warmth (e.g., being less rewarding towards and less interactive with the child; Crnic, Gaze, & Hoffman, 2005), which are characteristic features of the authoritarian parenting style and opposite features to those of the authoritative parenting style.

Moreover, the effect of parenting stress on parenting styles also seems to occur indirectly, through psychological flexibility within parenting. Our results showed that higher levels of parenting stress were associated with lower levels of psychological flexibility within parenting, which was, in turn, positively associated with the use of maladaptive styles of parenting (authoritarian and permissive) and negatively associated with the use of an authoritative parenting style. In the presence of high levels of stress, mothers may experience parenthood-related negative private experiences (e.g., negative perceptions of the self as a mother, self-doubt; frustration; anger; and fear) that they may find painful and undesirable. Those mothers who have more difficulty accepting their negative private experiences may engage in experiential avoidance strategies (i.e., strategies to avoid or suppress the negative private experiences associated with stress) which are characteristic of lower levels of psychological flexibility within the parenting context. The interactive behavior of mothers displaying lower levels of psychological flexibility within parenting is guided by an attempt to avoid such negative experiences in the context of their interactions with their child (e.g., avoid interactions that may increase their stress levels), rather than by their parenthood-related values (Burke & Moore, 2015). Therefore, their pattern of parenting behaviors may translate into a higher engagement in maladaptive parenting styles marked by higher levels of control (characteristic of an authoritarian parenting style) or by higher avoidance of stressful interactions, such as the establishment of rules or limits (characteristic of a permissive style). In fact, these results are congruent with prior evidence suggesting that lower psychological flexibility within parenting was associated with a greater propensity to use ineffective parental practices, such as severe discipline or inconsistent rules (Brown et al., 2015; Burke & Moore, 2015).

In fact, our results are particularly innovative by highlighting the important role of parental psychological flexibility within parenting on parenting behaviors. On the one hand, they point to the dynamic and changing nature of psychological flexibility within parenting, suggesting

that the mothers' ability to nonjudgmentally accept their parenthood-related private negative experiences and to engage in value-based actions (Burke & Moore, 2015) may be context-dependent, and vary as a function of mothers' levels of stress. When higher levels of parenting stress are present, mothers may have more difficulty in being psychologically flexible in the parenting role. On the other hand, our results also show the significant direct relationships found between psychological flexibility within parenting and parenting styles. Psychological flexibility within parenting can be seen as an emotion-regulatory skill in the parent-child context, as it influences the parent's ability to regulate their emotions (by nonjudgmentally accepting their negative parenting-related emotions and thoughts) and to engage in value-based actions rather in avoidance or control strategies, in a way that promotes a sensitive response to the child's needs and good parenting practices (Burke & Moore, 2015). The mother's commitment to actions and behaviors that reflect their values regarding parenting – namely, the importance of promoting the child's development and a positive mother-child relationship – will favor engagement during mother-child interactions that promotes an adequate balance between responsiveness (parental warmth or supportiveness) to the child's needs and demand-iness, which is a characteristic feature of adaptive (authoritative) parenting styles (Baumrind, 1991).

Second, our results are also supportive of the moderator effect of global psychological flexibility in the relationships between parenting stress, psychological flexibility within parenting and parenting styles. On the one hand, our results showed that mothers presenting lower global psychological flexibility presented high parenting stress, lower psychological flexibility in parenting and a more frequent use of maladaptive parenting styles. On the other hand, different patterns of relationships were found, with the indirect effects of psychological flexibility within parenting in the relationship between parenting stress and authoritarian parenting style being only found in the mothers presenting low global psychological flexibility, but not in the mothers presenting high global psychological flexibility. Conversely, the direct effects of parenting stress on the authoritative style of parenting were only found in the mothers presenting high global flexibility. Taken together, these results suggest that global psychological flexibility, i.e., the usual way individuals respond to their emotional suffering in general (their general ability to accept their negative emotions and thoughts and to guide their behavior according to their values) may impact the mothers' interactions within the parenting context. In fact, mothers presenting high global psychological flexibility may present increased likelihood of displaying more adaptive parenting practices, suggesting that global psychological flexibility may act as a buffer in promoting the use of more adaptive parenting practices, namely because it prone individuals to a more accepting attitude towards themselves and to a value-based action in the different domains of living, which can be disseminated to the parenting context. This hypothesis should be further explored.

On a final note, and although not being the major focus of our study, the role of maternal psychological distress should not be disregarded. Congruently with prior studies (Cornish et al., 2006; Sakalou et al., 2018), there is a significant association between psychological distress and parenting stress, which may negatively impact the parenting experience and accentuate the negative private experiences that mothers experience under stressful situations in the parent-child context. It is possible that the presence of psychopathology (anxious and/or depressive symptoms) may be associated with characteristics (e.g., cognitive rigidity, excessive worry) (Hong, 2007) that may compromise a mother's use of individual and interpersonal resources (e.g., emotion regulation abilities, ability to seek support) and ability to cope with parenting-related demands, which can translate into increased levels of stress in the parent-child context.

The present study has some limitations that need to be acknowledged. First, the cross-sectional design of the study, which compromises the establishment of causal relationships within the study variables.

Specifically, the results found that the use of a more authoritarian style directly resulted into higher parenting stress. It is possible that the children of authoritarian parents tend to react with higher distress and show lower compliance with the strict rules imposed (Baumrind, 1991; Daglar et al., 2011), which may result into higher levels of stress in parents. Moreover, psychological flexibility within parenting was found to mediate the relationship between parenting styles and parenting stress. On the one hand, it is possible that the use of a more authoritative style of parenting, as opposed to an authoritarian or permissive style, may contribute to the child being more cooperative and attuned with the parents' goals (e.g., Baumrind, 1991; Daglar et al., 2011), which may result into the mothers' greater ability in regulating their emotions within the mother-child interactions. On the other hand, psychological flexibility is related to more adaptive psychological functioning, and there is some evidence that supporting psychological flexibility in parents may empower them to better cope with conditions of stress and uncertainty (Coyne, Gould, Wilson, Baffuto, & Biglan, 2020), possible resulting in lower levels of parenting stress. Therefore, this suggests the potential bidirectional nature of the relationships between the study variables. Further studies with a longitudinal design should be conducted to provide additional evidence concerning the relationships found in the present study. The assessment of the study variables over time will help to clarify the nature of the relationships found in the present study, by allowing to examine if parenting stress at one time can affect parenting styles at other time, through psychological flexibility within parenting. Second, the sample is comprised of only mothers, and the majority of mothers were married/living with a partner, highly educated, currently employed and living in an urban area. Although the use of both recruitment methods aimed to maximize sociodemographic diversity, these sociodemographic characteristics may not be entirely representative of the population, which may compromise the generalization of the results to other samples (e.g., fathers) with different sociodemographic profiles. Third, a larger part of our sample was recruited online, we cannot exclude the possibility of self-selection bias (i.e., only mothers who are more aware of and interested in the topics of parenthood may be more prone to fill out the questionnaires). Moreover, we have included in the study only the women who completed the assessment protocol. Both these limitations may also compromise the representativeness of the sample. Fourth, the low internal consistency of the permissive parental style dimension should be taken into consideration, leading us to interpret the results concerning this dimension in a cautious way.

Despite being exploratory, our results allow us to reflect on some implications for clinical practice. First, our results showed that parenting stress may be a risk factor for maladaptive parenting practices, which can have a negative effect on children's adjustment (Schaffer et al., 2009; Williams et al., 2009). Parents with higher levels of psychological stress associated with the parenting role should be the target of psychosocial interventions aiming to promote more adaptive parenting practices. Second, our results highlighted that the absence of psychological flexibility within the parenting role may be an important mechanism through which parenting stress may negatively influence parenting practices. Therefore, designing and testing the efficacy of psychosocial interventions aiming to promote psychological flexibility within parenting – that is, that promote the nonjudgmental acceptance of the parents' negative private thoughts and emotions about their parenting experience, while promoting engagement in valued-based actions (Burke & Moore, 2015) – is one important clinical implication of the current study. Finally, the mothers presenting lower global psychological flexibility seem to be at higher risk of displaying maladaptive parenting practices, suggesting that they may be an important target group for assessment and parenting interventions.

Declaration of competing interest

The authors report no conflicts of interest.

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