

CHAPTER

COVID-19 ANXIETY, PARENTING AND CHILD EMOTION REGULATION: A CROSS-CULTURAL STUDY WITH BRAZILIAN AND PORTUGUESE PARENTS

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Abstract

Parental anxiety and parenting styles have been linked with children's emotional adjustment. Overall, the pandemic had relevant psychological impacts, such as anxiety symptoms, particularly on parents who struggled with the added burden on work-family life balance. This cross-cultural study aims to explore how COVID-19 anxiety and parenting styles impact children's emotion regulation in two different Portuguese-speaking countries. It was also ascertained additional validity evidence from the Emotion Regulation Checklist (ERC) in the Portuguese context. Data was collected online from a sample of 109 Portuguese and 190 Brazilian parents (80.9% women), whose children had a diverse age-range ($M = 8.38$; $SD = 4.30$). The applied protocol included the COVID-19 Anxiety Scale (CAS), the Parental Authority Questionnaire for Parents (PAQ-P), the ERC and socio-demographic questions. Hierarchical multiple regression models tested how COVID-19 anxiety and different parenting styles (authoritative, authoritarian or permissive) predict child emotional adjustment (emotion regulation or lability/negativity). In the Brazilian sample, parental COVID-19 anxiety ($\beta = .16$) and a more authoritarian parenting style ($\beta = .17$) predicted higher children's lability/negativity; even controlling the effects of children's age ($R^2 = .11$). In the Portuguese sample, where parental COVID-19 anxiety was quite lower [$M = 1.55$ versus 3.13 ; $t_{(279.821)} = -3.760$, $p < .001$], children's greater negativity was only predicted by a low authoritative parenting style ($\beta = -.30$; $R^2 = .22$). A better understanding of the impact of parents' COVID-related anxiety and parenting styles on children's emotional dysregulation in different cultural contexts stresses the importance of families' interventions in other potential epidemics within a contextual framework.

Keywords: COVID-19 Anxiety; Parenting Styles; Child's Emotional Regulation; Portuguese-speaking Parents

Introduction

COVID-19 pandemic among Portuguese and Brazilian families

In December 2019, a novel coronavirus infection caused by the SARS-CoV-2 agent was discovered in China. In just a few months, this infectious disease spread around the world, becoming a massive global health crisis and being officially declared a pandemic in March 2020 (World Health Organization [WHO], 2020). At the time, the absence of effective evidence-based treatments or vaccinations for the disease led most countries, including Portugal and Brazil, to adopt mitigation strategies to slow down the transmission rates and avoid overloading the local healthcare systems. These measures included quarantine in cases of suspected infection and physical isolation for what concerns infected or symptomatic people, but especially overall physical distancing and mandatory lockdown periods for the population (Hansel et al., 2020). All of these restrictive public health procedures, together with the characteristics of disease in itself (e.g., unpredictability of severity, related stigma), had relevant impacts on individuals' overall psychological well-being and mental health. Accordingly, there were identified higher levels of psychological symptoms in the worldwide general population, including sleep disturbance, post-traumatic stress, depression, and anxiety (Brooks et al., 2020; Luo et al., 2020; Prati & Mancini, 2021; Serafini et al., 2020; Torales et al., 2020; Vindegaard & Benros, 2020). These symptoms of mental anguish from general population were also found in the Portuguese and Brazilian contexts (Frade et al., 2021; Goularte et al., 2021; Paulino et al., 2020; Pires et al., 2021; 2022; Zhang et al., 2021).

In Portugal, COVID-19 ended up killing over 26 885 people and infecting 5 592 410 more until now (WHO, n. d.). In January 2021, the country registered its worst peak of infections, with the world's highest rate of daily new confirmed cases and deaths per million inhabitants. There was also an exponential increase in hospital admissions, almost duplicating in relation to the previous month (National Health Direction [DGS], n.d.). In several 2021 periods, Brazil became the third global country with the most registered cases of COVID-19 (37 639 324 until June 2023) and the second in the total number of deaths by the disease (703 399 up to the same period; WHO, n. d.).

But the pandemic was particularly challenging for families with young children. Some of the public health restrictions resulted in numerous family socioeconomic stressors, such as income reduction due to parental loss of jobs or layoff measures, which in some cases contributed to difficult access to children's essential goods (Calvano et al., 2022; Gassman-Pines et al., 2020). Besides this, the suspension of formal school and childcare activities, the children's confinement at home, and changes in their daily routines contributed to parents had additional struggles to conciliate their parental responsibilities with others, including remote work (Calejar et al., 2022; Dawes et al, 2021; Günther-Bel et al., 2020). In societies such as the Portuguese and Brazilian, with collectivist roots, the parents' social isolation resulting from the pandemic lockdowns may have become particularly hard in terms of children's care since a high level of participation from the extended family is usually a valued reality, namely from the grandparents' part (Bragato et al., 2022; Glaser et al., 2013).

COVID-19, parenting distress and child emotional adjustment

In the COVID-19 lockdown context, children were forced to interrupt social interactions with several significant figures, and so the family environment at home acquired a particular relevance for supporting their emotional needs. Nevertheless, parents were faced with several of the abovementioned stressors, which in some cases contributed to

the high levels of caregiving distress, burnout, and/or anxiety that were particularly identified during the pandemic. Thus, among other difficulties, this may result in less responsivity in child rearing. (Aguilar et al., 2021; Adadms et al., 2021; Johnson et al., 2021). Indeed, the COVID-related deterioration of parents' wellbeing and mental health was associated with the worst indicators of children's emotional and behavioral health throughout the pandemic period (e.g., higher levels of stress, anxiety, and low emotion regulation; Achterberg et al., 2021; Akgül & Ergin, 2021; Kerr et al., 2021; Martins et al., 2021; Spinelli et al., 2020; Spinelli et al., 2021; Toscano et al., 2022). In some cases, positive parenting was identified as a potential protective factor in these processes of parents and children spillover mental anguish (Bate et al., 2021; Cohodes et al., 2021; Zhou et al., 2021).

This chapter aims to provide a deeper understanding how a parental mental health, namely covid-related anxiety, and parenting styles may impact children's emotional adjustment throughout the COVID-19 pandemic. Thus, parental anxiety will be seen not as a trait but rather as particularly triggered by coronavirus-related information and thoughts. This conceptualization gains relevance because families were continuously flooded by overwhelming, contradictory, and sometimes misunderstanding pandemic-related information during the COVID-19 period (Gao et al., 2020; Hansel et al., 2020; Ni et al., 2020). Specifically, the present study seeks to explore how parental COVID-19 anxiety and authoritarian, authoritative or permissive parenting styles predict children's emotional regulation strategies during the pandemic.

Overall, this information will be helpful in managing parents and children's mental health and wellbeing during similar future epidemic events. Recent research underpins an increase like hood of its occurrence over the coming decades, due to the global environmental changes that greatly increase the risk of the virus migration from the typical zoonotic reservoirs to human contexts (Baker et al., 2022; Marani et al., 2021).

Method

Participants

This study included a sample of 109 Portuguese and 190 Brazilian parents (80.9% women), with a mean age of 38 years old ($SD = 7.99$). Most parents completed university studies (68.2%), namely a bachelor/graduation degree (53.6%). 64.2% of them were married or living together in a marital union, and 35.8% were separated/divorced. Children were balanced in terms of their sex, with 49.8% of girls and 50.2% of boys. Overall, they had a diverse range of ages ($M = 8.38$; $SD = 4.30$), and attending heterogeneous school years, mostly the nursery or kindergarten (31.7%). The majority had at least one brother/sister (64.2%). The majority of parents (62.5%) did not point up any noteworthy family events in their life cycle, despite the pandemic being crucial for 19.6% of those who did.

Significant differences were found in some of the subgroups' socio-demographic characteristics, namely a highest proportion of Brazilian *versus* Portuguese woman [$\chi^2_{(1)} = 6.324$, $p = .012$], and a more representativeness of separated/divorced parents in the Portuguese *versus* Brazilian sample [$\chi^2_{(1)} = 81.394$, $p < .001$]. The Portuguese children and their parents were on average oldest than Brazilian ($p < 0.001$).

Procedure

The study was initially approved by the Ethics Commission from the university. Given the COVID-19 restrictions, participants were recruited online, with the support

from virtual platforms and online communities (e.g., parents' blogs) in a snowball strategy. Both Portuguese and Brazilian parents filled out the same online protocol, with respective cultural adaptations/validation measures. All participants gave their informed consent to take part in the study, after receiving information of the research's goals, the voluntarily of participation, the confidentiality, and the anonymity of the data.

Measures

COVID-19 Anxiety Scale (CAS)

The CAS is a unidimensional brief mental health screener, originally developed by Lee (2020), to assess distinct physiologically-based symptoms of anxiety related to COVID-19 (i.e., dizziness, sleep disturbances, tonic immobility, appetite loss, and abdominal distress). This five-items measure focuses on the anxiety symptoms triggered by coronavirus-related information and thoughts. Using a 5-point Likert scale (0 = not at all to 4 = nearly every day), participants rate how frequently they have experienced the COVID-19 anxiety symptoms over the last two weeks. A CAS summing score equal to higher than the cut-off point of 9 indicates dysfunctional levels of COVID-19 anxiety.

Due to its parsimoniousness and practical/clinical relevance, the measure was adapted and validated cross-culturally in at least 25 different countries, including the US and countries from South America, Asia, Europe, Australia, and South Africa, always with good validity evidence (Lieven, 2021).

In this study, the Portuguese (Magano et al., 2021) and the Brazilian (Padovan-Neto et al., 2023) versions were specifically applied with good reliability indicators, somehow like those presented in the original scale (Table 1).

Parental Authority Questionnaire for Parents (PAQ-P)

The Parental Authority Questionnaire (PAQ)-Pires was modified from the original form (Buri, 1991) in order to assess parents' perceptions of their parental authority and allow comparison with their children's assessments. The measure is composed of a total of 30 items, to access parenting styles according to the tripartite model from Baumrind's (1971) with 10-items each: authoritative (e.g., "I guide my children's activities and decisions through reasoning and discipline"), authoritarian (e.g., "Whenever I tell my children to do something, I expect them to do it immediately without any questions"), and permissive (e.g., "Most of the time I do what my children want when establishing family decisions"). Participants rate their agreement with each item using a 5-point Likert scale (1 = totally disagree to 5 = totally agree). Each dimension score is calculated by summing the corresponding items. High scores indicate high levels of the respective parenting style and when two SD above the mean standardized score imply a dominant parenting style.

As presented in Table 1, satisfactory indicators of the measures' reliability were found in both the Portuguese and the Brazilian parental samples.

Table 1.
Indicators of internal consistency from CAS and PAQ-P

Measures and Dimensions	Alpha de Cronbach (α)		
	Original version	Portuguese sample ($n = 109$)	Brazilian sample ($n = 190$)
CAS unidimensional	.93	.87	.85
PAQ-P			
Authoritative	.83	.86	.77
Authoritarian	.77	.85	.82
Permissive	.75	.75	.73

Emotion Regulation Checklist (ERC)

The ERC was developed by Shields and Cicchetti (1997) to assess different strategies of child emotion regulation (6 to 12 years old) regarding the perception of their parents or other significant caregivers (e.g., teachers, therapists). The original version composed of 23 items (excluding item 12), distributed in two different dimensions: i) adaptive emotional regulation, with 8 items that describe appropriate affective displays, empathy, and child emotional self-awareness (e.g., "*Is empathic toward others*"; "*Can say when is feeling sad, angry or mad, fearful or afraid*"); ii) lability/negativity, composed of 15 items expressing lack of flexibility, impulsiveness, mood lability, and dysregulated negative affect (e.g., "*Exhibits wide mood swings*"; "*Is prone to angry outbursts*"). Parents rated their perceptions on a Likert-type scale with four answer options (1 = never to 4 = always).

Among several other hetero-report measures of child emotional regulation, the ERC has been one of the most widely used both in empirical research and to evaluate intervention programs with children of diverse ages (Adrian et al., 2011). Accordingly, it was adapted and validated in several European countries (Lucas-Molina et al., 2022; Molina et al., 2014; Nader-Grosbois & Mazzone, 2015; Oseland, 2019), and in Iran and Brazil (Meybodi et al., 2018; Reis et al., 2016). For Portugal in particular, there is a preliminary and non-published version of the measure (Melo, 2005), although with some validity and reliability constraints. Thus, additional evidence of the ERC's validity with Portuguese parents is presented below in this paper, such as the respective reliability indicators.

Data analysis

First, a principal component analysis with *oblimin* rotation was conducted to obtain additional validity evidence from the ERC in the Portuguese context. Then, for each of the parental samples—Portuguese and Brazilian—Pearson correlations between the study's major variables and descriptive statistics were computed. Finally, hierarchical multiple regression analyses were conducted to test the effects of parental COVID-19 anxiety on the children's emotion dysregulation (step 1) by controlling the effects of negative parenting (step 2) and relevant background variables, such as the children's age, parental schooling, and parents' marital status (step 3).

The linear regression assumptions were met, such as the inclusion of a minimum of 77 participants for an acceptable effect size with the four hypothesized predictors (parental COVID-19 anxiety in step 1 and the three parenting styles in step 2, respectively; Sopher, 2023).

Results

Emotion Regulation Checklist (ERC) additional validity evidences

By considering both conceptual and statistical criteria (i.e., eigenvalues, variance, scree plot, reliability indicators; Watkins, 2018), results from Table 2 point to a three-dimensional solution from ERC with our Portuguese parental sample, instead of the alternative and poorly adjusted bidimensional structure.

Table 2.
Descriptive and Principal Component Analysis from ERC with a Portuguese parental sample ($n = 109$)

Items (brief description)	Component Loadings			Descriptive Statistics			
	Negativity	Regulation	Lability	<i>M</i> (<i>SD</i>)	<i>Sk</i>	<i>Ku</i>	<i>Min-Max</i>
22-Intrusiveness	.84	-.01	.02	1.82 (0.89)	0.93	0.10	1-4
19-Negative response to peers' overtures	.83	-.01	-.03	1.69 (0.95)	1.26	0.54	1-4
24-Negative emotions on play engagement	.77	-.03	-.09	1.88 (0.83)	0.73	0.08	1-4
16-Sadness/listless	.73	-.10	.23	1.49 (0.88)	1.88	2.62	1-4
12-Whiny or clingy with adults	.73	.08	.02	1.84 (0.93)	0.89	-0.09	1-4
10-Pleasure with others' distress	.72	-.04	.11	1.59 (0.91)	1.53	1.41	1-4
13-Disruptive energy/exuberance	.71	.03	.25	1.75 (0.88)	1.00	0.19	1-4
18-Flat affect	.70	-.18	.21	1.80 (1.03)	0.99	-0.31	1-4
21-Empathic	-.05	.76	-.12	3.49 (0.77)	-1.47	1.62	1-4
7-Positive response to peers' overtures	-.42	.68	.35	3.49 (0.68)	-1.33	1.97	1-4
1-Cheerful	.10	.67	-.43	3.45 (0.67)	-1.39	2.82	1-4
3-Positive response to adults' overtures	-.21	.63	.03	3.43 (0.71)	-1.32	2.00	1-4
15-Able to express negative feelings	.00	.63	-.33	3.20 (0.92)	-0.78	-0.56	1-4
9-Able to delay gratification	-.04	.47	.02	2.92 (0.88)	-0.49	-0.42	1-4
23-Negative emotions appropriate	.22	.45	.11	2.66 (0.88)	-0.17	-0.65	1-4
4-Easily transitions between activities	.04	.40	.26	2.66 (0.93)	-0.34	-0.67	1-4
6-Easily frustrated	.13	.04	.72	2.35 (0.87)	0.13	-0.62	1-4
14-Angry about limit-setting	.22	.04	.63	2.43 (0.83)	0.03	-0.53	1-4
8-Outburst angry/tantrums	.42	-.04	.61	1.86 (0.96)	0.73	-0.62	1-4
2-Wide mood swings	.31	-.08	.61	2.08 (1.04)	0.44	-1.07	1-4
20-Impulsiveness	.15	.14	.53	2.33 (0.90)	-0.09	-0.93	1-4
5-Quick recover from distress/upset	<u>.34</u>	<u>.36</u>	-.48	2.65 (0.87)	-0.04	-0.68	1-4
11-Able to modulate high excitement	Excluded from the final model			2.71 (0.83)	-0.19	-0.48	1-4
17-Overly exuberant				2.38 (0.93)	0.02	-0.88	1-4
Explained variance (%)	31.5	13.6	8.7				
Cronbach's α	.91	.73	.77				

Note. Bartlett's Test: $\chi^2_{(231)} = 1225.235, p < .001$; KMO = .804

Somehow corresponding to the original ERC's version, the emotional regulation dimension, with adequate internal consistency, is composed of eight items that broadly represent children's empathy, and their adaptive modulation and expression of emotions. The items originally included in the overall dimension of lability/negativity are now included in two different and more parsimonious subscales. The negativity component, with eight items and very good internal consistency, reports an unadjusted affective display. The six items that compose the lability factor, with adequate reliability, are particularly associated with the children's impulsiveness and the most extreme emotional dysregulation.

In light of these results, in the analyses that follow and regarding the Portuguese parental sample, the proposed ERC's tridimensional solution was used. For the Brazilian sample, the ERC's bidimensional structure was applied, already validated in the country (Reis et al., 2016) and whose reliability indicators in our parental sample were also quite acceptable ($\alpha = .73$ and $.78$, respectively, for regulation and lability/negativity factors). For both parental samples, the total scale score was also calculated, with good internal consistency, both for the Portuguese ($\alpha = .87$) and the Brazilian ($\alpha = .81$) parents.

Descriptive and relationships between COVID-19 anxiety, parenting styles and child emotion regulation

As presented in Table 3, Brazilian parents had, on average, higher levels of COVID-19 anxiety and tended to be more authoritarian. In clinical terms, they also had a higher percentage of representatives with dysfunctional COVID-19 anxiety (81.5%) when compared with Portuguese parents, who represent only 18.5% of the total from this group. Portuguese parents were, on average, more permissive with lower scores regarding their children's emotional regulation. As detailed above and briefly indicated in Table 3, Portuguese children tend to be older, and their parents are more frequently separated/divorced, although there are no significant differences in the Portuguese parents' educational level when compared with Brazilians.

Table 3.

Descriptive statistics and correlations between the study key variables, in the Portuguese (n = 109) and in the Brazilian (n = 190) parental samples

		CAS	Parenting Styles (PAQ-P)				Child Emotion Regulation (ERC)				Background variables		
Portugal	Brazil	1	2	3	4	5	6	7	8	9	10	11	12
	<i>M</i>	3.13***	44.57	27.31*	19.81***	34.12***	68.66	28.59	----	----	7.18***	Coded as dummy	
	<i>SD</i>	4.17	4.36	7.31	5.53	4.17	8.30	6.37	----	----	3.47		
1.Anxiety		-	-.05	-.12	.24**	-.12	-.15*	.15*	----	----	.08	-.05	-.08
2.Authoritative		.08	-	-.08	-.22**	.19**	.16*	-.08	----	----	.12	-.04	.08
3.Authoritarian		.16	.16	-	-.12	-.17*	-.17*	.16*	----	----	.00	-.22**	-.08
4.Permissive		.15	-.05	.03	-	-.14	-.15*	.11	----	----	-.09	-.07	.01
5.Regulation		-.05	.55**	-.14	.03	-	.74**	-.36**	----	----	-.23**	.10	.02
6.TRegulation		.01	.43**	-.05	.00	.54**	-	-.88**	----	----	.05	.14	.07
7.Lab/Neg (Br)		----	----	----	----	----	----	----	----	----	-.21**	-.13	-.09
8.Lability (Pt)		-.15	-.16	-.02	.11	-.19	-.78**	----	-	----	----	----	----
9.Negativity (Pt)		.05	-.27**	.00	-.05	-.14	-.85**	----	.55**	-	----	----	----
10.CAge		.03	-.02	-.10	.10	-.20*	-.01	----	.14	-.20*	-	-	----
11.PSchool level		-.13	.03	-.27**	-.25**	.08	-.08	----	.15	.09	-.02	-	----
12.PMarital status		-.04	.00	.16	.09	-.04	.17	----	-.06	-.28**	-.09	-.20*	-
	<i>M</i>	1.55***	43.83	25.81*	23.62***	25.26***	68.04	----	13.40	13.85	10.49***	Coded as dummy	
	<i>SD</i>	3.05	5.17	7.02	5.63	3.76	9.86	----	3.73	5.77	4.78		

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Values above the diagonal respect to the Brazilian sample and below to the Portuguese sample. Parental School level coded as dummy variable, where 0 = 12 years of school (less or equal) and 1 = university studies. Parental Marital status coded as dummy variable, where 0 = married/in a marital union and 1 = separated/divorced.

As expected, in the Brazilian sample, the children's emotional regulation was correlated with more positive parenting and, in the case of the ERC's total scale, also with less parental COVID-19 anxiety. Following this tendency, children's higher lability/negativity were both associated with more authoritarian parenting and higher parental COVID-19 anxiety. In the Portuguese sample, children's higher emotional regulation was correlated with more authoritative parenting, and their negativity with less parental authoritarianism. In contrast to Brazil, there were no significant correlations between children's emotional regulation (adjusted or unadjusted) and parental COVID-19 anxiety regarding Portugal. Even so, results from the two models testing how parental COVID-19 anxiety and their parenting styles may impact children's emotion regulation are presented below for Brazilian and Portuguese parents, respectively.

Children's age was overall correlated with their emotional regulation and dysregulation in both samples. Similar to parental school level, but in this case regarding specific parenting styles. Accordingly, these background variables were considered covariates in the models that follow. In the specific case of the Portuguese sample, the

parent's marital status was also considered a covariate due to its association with the children's negativity.

COVID-19 anxiety and parenting styles as predictors of child emotional regulation

Table 4 presents the results from the overall hierarchical linear regression models conducted with the Portuguese sample. Accordingly, there was no effect of parental COVID-19 anxiety on children's emotional regulation. Instead, emotional regulation was explained in 41% by more authoritativeness and less authoritarianism, controlling the effects of children's age (less regulation for younger children). In the same direction, children's higher negativity was predicted by less parental authoritativeness, even controlling the effects of parents' marital status (higher negativity in separated/divorced). This model explains 22% of variations in this child's unadjusted emotional regulation strategy.

Table 4.

Parental COVID-19 anxiety and parenting styles as predictors of child emotional regulation: hierarchical linear regression models from the Portuguese sample (n = 109)

Predictors	ERC Total Scale		Negativity		Lability		Emotion Regulation	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.00		.00		.02		.00	
COVID-19 Anxiety		.01		.05		-.15		-.05
Step 2	.20***		.08*		.04		.36***	
COVID-19 Anxiety		-.01		.08		-.16		-.07
Authoritative Parenting		.45***		-.29**		-.14		.59***
Authoritarian Parenting		-.12		.03		.02		-.23**
Permissive Parenting		.03		-.08		.13		.08
Step 3	.05		.13**		.05		.05	
COVID-19 Anxiety		-.01		.07		-.16		-.06
Authoritative Parenting		.46***		-.30**		-.14		.59***
Authoritarian Parenting		-.18		.08		.02		-.25**
Permissive Parenting		-.01		-.02		.13		.10
Children's Age		-.01		-.22*		-.16		-.22**
Parental School Level		-.11		.06		-.14		.00
Parent's Marital Status		.18		-.30**		.02		-.03
Overall F	4.62***		3.96***		1.82		9.93***	
Total R ²	.24		.22		.05		.41	

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Parental School Level coded as dummy variable, where 0 = 12 years of school (less or equal) and 1 = university studies. Parental Marital Status coded as dummy variable, where 0 = married/in a marital union and 1 = separated/divorced.

As indicated in Table 5, in the Brazilian sample, parental COVID-19 anxiety and more authoritarian parenting predicted children's higher lability/negativity, even controlling the effects of children's age and explaining 11% of the variations in this child's unadjusted emotional regulation strategy. There was no effect of parental COVID-19 anxiety on children's adaptive emotional regulation, and so this variable was predicted by higher authoritative parenting.

Table 5.

Parental COVID-19 anxiety and parenting styles as predictors of child emotional regulation: hierarchical linear regression models from the Brazilian sample (n = 190)

Predictors	ERC Total Scale		Lability/Negativity		Emotion Regulation	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.02		.02		.01	
COVID-19 Anxiety		-.13		.14		-.09
Step 2	.06**		.04*		.06*	
COVID-19 Anxiety		-.13		.15		-.09
Authoritative Parenting		.10		-.03		.14
Authoritarian Parenting		-.19		.19*		-.15*
Permissive Parenting		-.14		.11		-.11
Step 3	.01		.05*		.07**	
COVID-19 Anxiety		-.13		.16*		-.05
Authoritative Parenting		.11		-.01		.17*
Authoritarian Parenting		-.16*		.17*		-.13
Permissive Parenting		-.12		.08		-.13
Children's Age		.03		-.21**		-.26***
Parental School Level		.09		-.06		.09
Overall F	2.80*		3.53**		4.49***	
Total R ²	.09		.11		.13	

Note. * $p < .05$, ** $p < .01$, *** $p < 0.001$. Parental School Level coded as dummy variable, where 0 = 12 years of school (less or equal) and 1 = university studies

Discussion

Few previous studies point to a relationship between parents' higher distress during COVID-19 and their children's low emotional and behavioral health (e.g., Aguiar et al., 2021; Adadms et al., 2021; Johnson et al., 2021). However, despite the fact that parental mental health anguish was demonstrably linked with info-whelming, overexposure to fake news/data or coronavirus-misleading information disseminated by different social media platforms, the indicators employed in previous studies were not pandemic-specific (Dubey et al., 2020; Gao et al., 2020; Hansel et al., 2020; Ni et al., 2020). Accordingly, this chapter is intended to amplify the scarce piece of evidence about the impact of parental anguish on children's emotional adjustment during the pandemic while contributing theoretically on parental anxiety triggered by repeated and disruptive thoughts concerning the pandemic (i.e., COVID-19 anxiety). Including additional background-family variables enabled it to better understand and recognize cultural differences from a contextual and ecological perspective. Given that the current study was conducted in two distinct Portuguese-speaking countries, namely Brazil and Portugal, the specific cultural context and government policies may have impacted the family way of life throughout the outbreak and how lockdowns were handled. Indeed, Brazilian parents reported much higher levels of COVID-19 anxiety than Portuguese parents, consistent with previous data of the general population in both countries, where Brazil occupied the second place in a total of 25 analysed countries and Portugal was in the last four positions. Furthermore, Brazil's CAS scores were nearly twice as high as Portugal's (Lieven, 2021). Additionally, and in contrast to Portuguese parents' findings, Brazilian parents' COVID-19 anxiety combined with stricter-authoritarian parenting predicted the children's emotional dysregulation during the pandemic, namely their higher levels of lability or negativity. Since the younger child's age also predicts higher lability or

negativity, it is noteworthy that this effect is maintained even when the children's ages are taken into account. According to an intra-individual lifespan perspective, it is expected that older children are better able to reflect on and control their emotional states and acquire effective self-regulation strategies due to their increasing neurobiological maturation and overall development (physiological, cognitive, and behavioral) (Sanchis-Sanchis et al., 2020), useful to better deal with the high stressors imposed by the pandemic. Moreover, a pandemic scenario that is perceived as a serious threat may trigger the individual's preexisting vulnerabilities, leading to the emergence of psychopathological symptoms or an anxiety disorder. Our results particularly point to the interpersonal and environmental context in which the pandemic may have modulated the Brazilian (*versus* Portuguese) parents' anxiety and the subsequent children's emotional dysregulation. First, as briefly mentioned in the Introduction, Brazil was one of the most severely impacted countries by the pandemic, which raises the possibility that a person will become infected. Still, knowing several sick relatives and/or having COVID-related deaths in the family are also relevant contextual risk factors that have historically hindered people's psychological wellbeing during the pandemic period (Luo et al., 2020; Torales et al., 2020; Vindegaard & Benros, 2020). Political denials regarding COVID-19 in Brazil and a consequent lack of funding for research and public health initiatives to fight the virus have worsened the country's fatality rates and may also intensify people's concerns about the illness over time. (de Almeida et al., 2022; Sott et al., 2022). A huge amount of misleading information was soon disseminated on this topic due to negationist beliefs and a socially polarizing climate in aftermath of the outbreak. It was mainly spread on social media platforms like Facebook and WhatsApp, in which Brazilian families rank among the top users worldwide. (Gramacho et al., 2021). In the end, the flood of these inaccurate, incorrect, or misleading infodemic contents might have negative impact on individual mental and general health (Biancovilli et al., 2021), which may help explain the greater levels of COVID-19 anxiety from Brazilian parents in our sample. Portuguese parents, on the other hand, were less exposed to the aforementioned political and social backdrop, which in and of itself may have contributed to their lowest levels of parental COVID-19 anxiety and to the lack of effects on their children's emotional dysregulation. Despite being rated moderate to high levels of distress and anxiety in the Portuguese general population, especially from those with caring responsibilities and/or living with children and adolescents (Frade et al., 2021; Morgado et al., 2021), there were also found international evidence that point to improvements on the quality of parents-child relationships during and after the lockdown periods (Vian et al., 2022), which may help to explain part of our results. The pandemic outbreaks provided some families with an opportunity for reconnection and appreciation. Recognizing an unusual opportunity to spend more time together and support one another closely as a means to overcome the COVID-19 concerns, they were able to cope with the situation in a positive way. (Günther-Bel et al., 2020; Pires, et al, 2022).

Despite the abovementioned empirical contributions, this study also had an important methodological relevance as it ascertained additional ERC validity evidence (Shields & Cicchetti, 1997) in a sample of Portuguese parents. This measure is one of the multi-informant scales widely used in international research about parenting and child regulation (Adrian et al., 2011; Borelli et al., 2010; Kim-Spoon et al., 2013), being validated for several European and other worldwide countries, including Italy, Belgium, Brazil, Iran, Norway and Spain (Meybodi et al., 2018; Molina et al., 2014; Nader-Grosbois & Mazzone, 2015; Oseland, 2019; Reis et al., 2016; Lucas-Molina et al., 2022). In Portugal it was translated and preliminary validated with a parental sample from the

north region of the country (Alves & Cruz, 2015; Melo, 2005), although with some discriminatory issues in several items and a low adjustment to the proposed bidimensional structure, like other mentioned international validation studies. Thus, in this chapter is proposed an alternative ERC's tridimensional arrangement, in which the broad lability/negativity dimension is subdivided in two more parsimonious subscales. This finding supports the cultural-contextual perspective by showing that the cultural contexts in which families live have an impact on how children's emotional regulation is measured. These settings shape how youngsters express their emotions in ways that are more socially acceptable (Ford & Mauss, 2015; Southam-Gerow & Kendall, 2002). Thus, more robust evidence from ERC's tridimensional *versus* bidimensional structure are in need, especially in the Portuguese context and this chapter constitutes a relevant starting point on this work.

In terms of limitations, aside from the ERC's unique adjustment structure for Portugal and Brazil, respectively, it is important to note that the other measures are self-reported and therefore more vulnerable to some degree of social desirability and memory recall bias. In addition, the Portuguese and Brazilian groups were not completely equivalent regarding their socio-demographic characteristics. To reduce the inconsistencies between these groups, background variables that were indicated to have an impact on the study's key variables were statistically controlled in the models provided.

According to our understanding, the results are a novel demonstration of how negative parenting and parental anxiety, particularly triggered by disruptive thoughts related to COVID-19, predict poor child emotional adjustment during the pandemic. This is especially true in countries like Brazil, where there was a weak investment in public health to fight the virus and a rapid spread of misinformation and infodemic content. If we trust that some of the emotional negative impacts of the pandemic may endure over time, as they did in other comparable prior incidents, such as the Ebola and the 2003 SARS-CoV outbreaks, then all of this empirical reflection is critical (Brooks et al., 2020; Hansel et al., 2020; Torales et al., 2020). Therefore, even after the official pandemic has ended, the knowledge provided is still relevant for researchers and clinicians that want to improve on the therapeutic interventions for children and their families who have been greatly affected by the COVID-19 mental health repercussions. Finally, and contrary to what happened with the unexpected reality from COVID-19, the shared insights may be useful to plan and adjust different family psychological interventions to future epidemic events, particularly since it is undeniably demonstrated that there is a high probability of its occurrence in the next few decades.

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