

COVID-19 and Children's Mental Health: The Impact of Sociodemographic Variables, Educational Practices and Stressors

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Abstract: The COVID-19 pandemic has had a significant effect on families in different countries. This study aimed to evaluate the impact of sociodemographic variables, parental educational practices, and stressors of the COVID-19 pandemic on the emotional and behavioral problems of children aged 6 to 11 years. Mothers/fathers ($N = 132$) answered the Sociodemographic Data Questionnaire, the Inventory of Parenting Practices, the Strengths and Difficulties Questionnaire, and the Response to Stress Questionnaire COVID-19. Regression analysis indicated that parental clinical diagnosis and being a boy had an effect on externalizing problems, as well as did parental age on hyperactivity. Marital status influenced children's conduct difficulties, and educational level influenced emotional and internalizing difficulties. Coercive discipline was associated with all subscales of the emotional/behavioral problems. Finally, the stressors of the pandemic had an impact on conduct, emotional, peer-relationship externalizing and internalizing problems. It was shown that different factors accentuated children's vulnerabilities in the context of the COVID-19 pandemic.

Keywords: parenting, parent-child relations, behavior disorders, COVID-19

COVID-19 e a Saúde Mental Infantil: Impacto de Variáveis Sociodemográficas, Práticas Educativas e Estressores

Resumo: A pandemia de COVID-19 teve importante repercussão para famílias em diferentes países. Este estudo teve como objetivo avaliar o impacto de variáveis sociodemográficas, práticas educativas parentais e estressores da pandemia de COVID-19 nos problemas emocionais e de comportamento de crianças de seis a 11 anos. Mães/pais ($N = 132$) responderam remotamente ao Questionário de Dados Sociodemográficos, Inventário de Práticas Parentais, Questionário de Capacidades e Dificuldades e *Response to Stress Questionnaire COVID-19*. Análises de regressão indicaram que diagnóstico clínico parental e ser menino repercutiam nos problemas externalizantes, assim como idade parental, na hiperatividade. Já estado civil teve efeito sobre problemas de conduta infantil; e nível educacional sobre problemas emocionais e internalizantes. Destaca-se que a disciplina coercitiva se associou a todas subescalas dos problemas emocionais/comportamentais. Finalmente, os estressores da pandemia impactaram os problemas de conduta, emocionais, de relacionamento com pares, externalizantes e internalizantes. Evidenciou-se que fatores de distintas ordens acentuaram vulnerabilidades infantis no contexto da COVID-19.

Palavras-chave: parentalidade, relações pais-criança, distúrbios do comportamento, COVID-19

COVID-19 y Salud Mental Infantil: Impacto de Variables Sociodemográficas, Prácticas Educativas y Estresantes

Resumen: La pandemia de COVID-19 tuvo un impacto importante en las familias de diferentes países. Este estudio buscó evaluar como variables socio demográficas, prácticas parentales y factores estresantes de la pandemia influyeron en los problemas emocionales y conductuales de niños de 6 a 11 años. Madres/padres ($N = 132$) respondieron a cuestionarios sobre datos socio demográficos, prácticas parentales, capacidades y dificultades, y estrés relacionado con la COVID-19. Los análisis de regresión destacaron que el diagnóstico clínico parental y ser niño estaban relacionados con problemas externalizantes, mientras que la edad de los padres afectaba la hiperactividad. El estado civil influía en los problemas de conducta infantil, y el nivel educativo se asociaba con problemas emocionales e internalizantes. Se subrayó que la disciplina coercitiva estaba vinculada a todas las subescalas de problemas emocionales/comportamentales. Los estresores de la pandemia impactaron diversos aspectos, resaltando que factores de distintos órdenes acentuaron vulnerabilidades infantiles en el contexto de la COVID-19.

Palabras-clave: responsabilidad parental, relaciones padres-niños, trastornos de la conducta, COVID-19

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The impact of family dynamics on child development has been repeatedly investigated, given that it is through experiences and interactions within the family that children learn to relate to others and are exposed to their first notions of society, assimilating the habits, values, customs, and roles played in this system (Bhide et al., 2019). In this regard,

mothers and fathers have the role of caring for and educating their children (a term used to refer to children of different genders), paying attention to their autonomy, independence, and adaptive behavior (Bronfenbrenner, 2001).

The quality of parent-child relationships affects children's well-being and can mitigate negative outcomes in potentially stressful situations. In general, children rely on their parents as sources of information and support for emotional co-regulation when they feel threatened (Grossmann et al., 2008). As a result, research has been conducted to investigate the implications of the COVID-19 pandemic on parent-child relationships and their mental health (Bate et al., 2021; Penner et al., 2022).

The COVID-19 pandemic, a major public health crisis, has had a major impact on the daily lives of families in different countries, leaving many vulnerable in financial, employment, and academic terms (Ji et al., 2020). School closures, in particular, have forced many mothers and fathers to stay home with their children full-time, balancing domestic, educational, and professional responsibilities. Adapting to this new arrangement has led to increased levels of parental stress, which often negatively affects parent-child relationships and, consequently, children's well-being (Lee et al., 2021). Thus, it is important to systematically understand the potential effects of the COVID-19 pandemic, considering different factors that may have affected and continue to affect families, and children in particular.

Evidence on children's mental health during the pandemic has indicated an increase in externalizing and internalizing problems in children due to affected self-efficacy and parental competence, affecting the quantity and quality of family interactions (Khoury et al., 2021). Externalizing problems involve opposition, aggression, impulsivity, and defiance, while internalizing problems are related to depression, anxiety, social withdrawal, somatic complaints, fear, excessive worry, sadness, shyness, and insecurity (Achenbach et al., 2016). Such problems are known to be associated with parenting practices, which can be either protective or risk factors for their occurrence, as they can be classified as positive (affective availability, meeting basic needs, and adequate control management) or negative (lack of affection, communication, and ineffective control and punishment) (Bhide et al., 2019).

For Prime et al. (2020), pandemic-related stress may have depleted the mental health resources of mothers and fathers, leading to more negative educational practices. In this regard, a cascading effect can be observed, namely: stressors arising from the COVID-19 pandemic, understood as factors responsible for triggering and maintaining stress, have generated levels of parental psychological distress, affecting the quality of family relationships and, consequently, children's mental health.

On the other hand, studies have also reported a reduction or no change in child development (Penner et al., 2021), thus showing the heterogeneity of the impacts from the COVID-19 pandemic on children. Furthermore, the changes resulting from this period seem to have exacerbated existing

psychosocial problems among families living in situations of greater vulnerability (Linhares & Enumo, 2020). Thus, sociodemographic variables should be considered when assessing the impacts on emotional and behavioral problems in children.

Several studies have associated sociodemographic variables with emotional and behavioral outcomes in the context of the COVID-19 pandemic. For example, job loss and low income, compounded by lower educational levels, were associated with greater use of negative parenting practices (W.J. Han & Hart, 2022). In this regard, educational parenting practices seem to have been particularly affected by increased stress (Penner et al., 2022; Rodriguez et al., 2021) and maternal and paternal depressive symptoms (Bate et al., 2021; Corapci et al., 2021; Hukkelberg & Ogden, 2021) during the pandemic, accentuating the coerciveness that led to greater manifestation of externalizing and internalizing problems in children. On the other hand, when such practices remained positive, they acted as moderators between the stress experienced and externalizing problems (Liu et al., 2024).

Considering the diversity of impact factors reported in the literature on emotional and behavioral problems in children due to the COVID-19 pandemic, the variability of results, and the scarce literature that considers different variables together, it is relevant to explore possible risk factors in Brazil, given that the social distancing policies implemented at the beginning of the pandemic may have long-term effects on children (Ye, 2020), as international studies have already pointed out (Corapci et al., 2024; Lee et al., 2021; Penner et al., 2022). Such knowledge is important for understanding the different outcomes of the pandemic linked to the children's population, paying attention to the continued effects of the stress experienced during this important stage of development. Furthermore, although the World Health Organization declared the end of the Public Health Emergency of International Concern (PHEIC) for COVID-19 in May 2023 (World Health Organization [WHO], 2023), the report recommends that research assessing its impacts continue to be conducted.

Based on the above, the objective was to evaluate the impact of sociodemographic variables, parental educational practices, and stressors from the COVID-19 pandemic on emotional and behavioral problems in children aged 6 to 11 years. To expand the discussion, the results will be understood from the perspective of the Bioecological Theory of Human Development (BTHD) (Bronfenbrenner, 2001), considering that the factors involved in human development do not have independent effects, acting synergistically so that the results are perceived as a consequence of this interaction.

Method

Participants

This is an explanatory, cross-sectional study, whose sample was accessed by convenience and referral. A total

of 132 mothers/fathers participated, with the majority of respondents being females ($n = 124$). The inclusion criteria were that parents should live with at least one of their children aged between 6 and 11 years old and have access to the internet. The choice of the children's age group was based on the understanding that transitions, such as entering primary school and the end of childhood and beginning of puberty, are associated with a greater need for external resources to adapt to new situations in everyday life (Bronfenbrenner, 2001). The sociodemographic characteristics of the sample can be seen in Table 1.

Table 1
Sociodemographic Characteristics of the Sample

Mother/Father	<i>n</i>	%
Gender		
Female	124	93.90
Male	8	6.10
Marital Status		
In a steady relationship	105	79.50
Not in a steady relationship	27	20.50
Education		
Incomplete elementary education	10	7.60
Complete elementary education	10	7.60
Complete secondary education	39	29.50
Incomplete higher education	24	18.20
Complete postgraduate education	49	37.10
Physical/mental illness diagnosis		
No	101	76.50
Yes	31	23.50
Child		
Gender		
Female	65	49.20
Male	67	50.80
Schooling		
Pre-school	17	12.90
From 1 st to 5 th grade	94	71.20
From 6 th to 9 th grade	21	15.90
Physical/mental illness diagnosis		
No	107	81.10
Mother/Father	<i>n</i>	%
Gender		
Female	124	93.90
Yes	25	18.90

The parents' ages ranged from 23 to 61 years ($m = 38.89$ years; $SD = 7.47$). They had completed high school or higher education (84.8%) and were in a steady relationship (79.5% were married or in a common-law relationship). The majority lived in the southern region of the country (98.5%), with only one case from the southeast and another from the northeast. As regards income, seven earned up to R\$ 900; 19 earned from R\$ 900 to R\$ 1,800; 16 earned from R\$ 1,800 to R\$ 2,700; 21 earned from R\$ 2,700 to R\$ 4,500; and 68 earned more than R\$ 4,500. One person did not provide that information. As for the children, 50.8%

were boys and 71.2% were attending from the 1st to the 5th grade in elementary school.

Instruments

Sociodemographic Data Questionnaire: an instrument developed by the first and last authors, consisting of closed questions to characterize the sample using data such as gender, age, education, employment status, family income, marital status, family configuration, and number of children.

Inventory of Parenting Practices - IPP (Benetti & Balbinotti, 2003): an instrument that aims to identify the parenting practices used in daily interactions with children. It has 16 assessment items in its short version, consisting of affirmative statements in which mothers or fathers must estimate the frequency of their practices on a Likert scale (0 = very often to 4 = never). In the study of the instrument's development with the Brazilian population (Benetti & Balbinotti, 2003), good factor adequacy indices were obtained, covering four dimensions: affection (demonstrations of affection and availability for dialogue; $\alpha = .76$), education (assistance with educational demands; $\alpha = .82$), coercive discipline (use of power and force; $\alpha = .55$) and social (social interactions in different contexts; $\alpha = .58$). In the present study, the coercive discipline dimension was adjusted with the exclusion of the item "When talking is not enough, I spank my child" due to its ambiguity, which affected its adherence to the dimension. Thus, Cronbach's alpha ranged from .67 to .78 (affection = .78, education = .73, coercive discipline = .67, and social = .76). The higher the scores for each dimension and the overall score, the greater the use of the parenting practice in question.

Strengths and Difficulties Questionnaire - SDQ - version for parents/legal guardians (Goodman, 1997; validated in Brazil by Fleitlich et al., 2000): an instrument that assesses mental health problems in children and adolescents (aged 4 to 16), consisting of 25 items divided into five subscales: emotional problems, hyperactivity, conduct problems, peer-relationship problems, and prosocial behaviors. Responses can be false, somewhat true, or true, and each item receives a specific score. The sum of the items on each subscale and the total sum allow the child to be classified into three categories: normal, borderline, or abnormal development. On the prosocial behavior subscale, the higher the score, the fewer the complaints. In the others, the higher the score, the greater the number of complaints.

According to Goodman et al. (2010), there is theoretical and empirical support for classifying the subscales into externalizing problems (hyperactivity and conduct problems) and internalizing problems (emotional problems and difficulties in peer relationships). A review of SDQ in the Brazilian context, including studies that investigated its internal consistency, showed Cronbach's alpha indices in total scores between .59 and .88 for the parents' version (Saur & Loureiro, 2012). In this study, Cronbach's alpha for the total score was .87. It was .83 for externalizing problems, and .78 for internalizing problems.

Response to Stress Questionnaire - COVID-19 - version for parents - RSQ (Connor-Smith et al., 2000): a multidimensional questionnaire adapted to specific stressors or stress domains. Only the first session of the questionnaire was considered, which consists of 14 anchor questions about the COVID-19 pandemic, covering areas of potential stress, such as economic strain, changes in daily life, uncertainties, and health concerns. The items are rated on a scale from one (not at all) to four (very much), representing the degree to which an individual considers each item stressful. The sum of these values equals the total stress score. There is still no version of the instrument translated and adapted for the Brazilian population, so it was adjusted for use in the present study based on two independent translations, which underwent a joint review process, obtaining a Cronbach's alpha of .72 with the data from the sample considered.

Procedures

Data collection. Data were collected online using the *SurveyMonkey* platform from September 3 to November 14, 2022. The invitations to participate in the survey, containing a link to the questionnaire, were shared on social media, with no regional restrictions. The first page of the form contained information about the study and the Free Consent Form (TCLE). Consent to participate was given by answering “yes” or “no” to a question posed to the participant. Only those who chose the “yes” option were included. The average response time was 22 minutes.

Data analysis. Initially, descriptive analyses were conducted to characterize the sample. Subsequently, regression analyses (*Enter* method) were performed to understand the influence of independent variables (categorical and continuous) on the different subscales of emotional and behavioral problems in children (dependent variables). The categorical independent variables related to parents were gender (female or male), marital status (reference point: in a steady relationship), education (reference point: did not attend school/incomplete elementary school), diagnosis (diagnosed or not diagnosed with a physical or mental illness). The continuous variables examined were age of parent, parental affection practices, education, coercive and social discipline, and COVID-19 pandemic stressors (total score). Regarding the child, the following were

considered: gender (female or male), schooling (reference point: not attending school/in pre-school), and diagnosis (diagnosed or not diagnosed with a physical or mental illness).

VIF (Variance Inflation Factors) and tolerance analyses were conducted as a regression diagnosis. The normality of the residuals was also checked using the Shapiro-Wilk test, and the influence of extreme cases was analyzed using Cook's distance mean for each model. The following findings were considered to be good: a VIF below 10, tolerance above .1, normal residuals with $p > .05$, and a mean Cook's distance of less than 1 (Field et al., 2012). Data analysis was performed using the Jamovi software, version 2.2, with a significance level of 5%.

Ethical Considerations

The study was approved by the Human Research Ethics Committee of the Institute of Psychology, Social Work, Health, and Human Communication at *Universidade Federal do Rio Grande do Sul* (CAEE: 60805322.4.0000.5334). The provisions of Resolution 510/16 of the National Health Council and the procedures guided by the National Research Ethics Committee (CONEP) in Circular Letter No. 2/2021 (Ministry of Health, 2021) were considered.

Results

All regression models examined were significant, and Cook's distance was approximately .009, indicating little influence from extreme cases on the results. None of the regression model diagnoses were concerning, and only those that assessed problems with peers and prosocial behavior had residuals that deviated from normality (Table 2). Even so, VIF ranged from 1.06 to 1.35 for the independent variables, and tolerance ranged from .74 to .94, indicating little collinearity among the independent variables.

The regression model that obtained the highest explanatory indicator was related to conduct problems, whose variance was explained by 5.2% ($F(17.114) = 8.76, p < .001$) by the independent variables. Next, the models corresponding to externalizing problems and internalizing problems also had high explanatory power, .48 and .39, respectively ($F(17.114) = 8.09, p < .001$; $F(17.114) = 5.85, p < .001$). Table 2 shows the adjustment indices of the regression models tested.

Table 2
Adjustment of Regression Models

Emotional/behavioral problems	<i>F</i>	Degrees of freedom	<i>p</i>	Adjusted <i>R</i> ²	Shapiro-Wilk of residuals
Emotional problems	4.17	17, 114	.001	.29	.238
Conduct problems	8.76	17, 114	.001	.50	.347
Hyperactivity	4.30	17, 114	.001	.39	.108
Problems with peers	3.99	17, 114	.001	.37	< .001
Externalizing problems	8.09	17, 114	.001	.48	.761
Internalizing problems	5.85	17, 114	.001	.39	.138
Prosocial behavior	2.36	17, 114	.004	.15	< .001

Regarding the independent variables, Table 3 shows the betas and significance levels in the tested models. Table 4 shows the descriptive statistics of the analyzed variables. Lower emotional problem scores were observed when parents had completed higher education ($B = -2.14$, $\beta = -.85$, $p \leq .05$) or postgraduate education ($B = -2.10$, $\beta = -.84$, $p \leq .05$). There was also a decrease in conduct problems when parents reported being in a loving relationship ($B = -.89$, $\beta = -.45$, $p \leq .01$).

Hyperactivity, in turn, was influenced by the parents' age, as the older they were, the lower the hyperactivity levels ($B = -.09$, $\beta = -.24$, $p \leq .01$). In addition, when parents had a diagnosis of physical or mental illness, the child's hyperactivity scores increased ($B = 1.42$, $\beta = .52$, $p \leq .01$). Another significant variable for hyperactivity was the child's gender, with girls showing lower levels than boys ($B = -.94$, $\beta = -.34$, $p \leq .05$).

Table 3
Betas, Standardized Betas, and Significance of Regression Models for Emotional and Behavioral Problems

Mother/father	Betas	EPS	CPS	HS	PPS	PS	EXT	INT
Age	<i>B</i>	-.02	.02	-.09b	.01	-.01	-.07	-.02
	β	-.07	.07	-.24	.04	-.03	-.12	-.03
Gender (female)	<i>B</i>	-.37	-.35	-.94	-.58	-.23	-1.29	-.95
	β	-.15	-.17	-.34	-.35	-.14	-.31	-.26
Marital status (in a steady relationship)	<i>B</i>	.09	.89b	-.11	.11	.32	-1.00	.21
	β	.04	-.45	-.04	.07	.19	-.24	.06
Completed elementary school	<i>B</i>	-1.44	-1.07	-.91	-1.02	.06	-1.98	-2.46
	β	-.57	-.54	-.33	-.62	.03	-.48	-.68
Completed secondary school	<i>B</i>	-1.55	-.64	.06	-1.27a	-.09	-.58	-2.81a
	β	-.62	-.32	.02	-.77	-.06	-.14	-.77
Undergraduate degree	<i>B</i>	-2.14a	-.59	-.07	-1.48a	-.39	-.67	-3.62b
	β	-.85	-.29	-.02	-.90	-.25	-.16	.99
Graduate degree	<i>B</i>	-2.10a	-.96	.35	-2.07c	-.41	-.61	-4.17c
	β	-.84	-.48	.13	-1.26	-.26	-.15	-1.15
Diagnosis (yes)	<i>B</i>	.53	.07	1.42b	.38	-.32	1.49a	.91
	β	.21	.03	.52	.23	-.19	.36	.25
Affection	<i>B</i>	-.13	-.35	-.96	-.11	.53	-1.31	-.24
	β	-.01	-.08	-.16	-.03	.15	-.14	-.03
Education	<i>B</i>	.08	-.25	.14	-.18	-.06	-.11	-.09
	β	-.02	.09	.04	-.08	-.03	-.02	-.02
Coercive discipline	<i>B</i>	.92b	1.50c	1.11c	.64b	.72c	2.62c	1.56c
	β	.26	.52	.28	.27	-.31	.44	.29
Social	<i>B</i>	-.56	-.22	-.37	-.05	.30	-.59	-.61
	β	-.16	-.08	-.09	-.02	.14	-.10	-.12
Child								
Gender (female)	<i>B</i>	-.36	-.35	-.94a	-.06	.34	-1.29a	-.43
	β	-.14	-.18	-.34	-.04	.21	-.31	-.12
1 st to 5 th grade	<i>B</i>	.12	.23	-.17	.42	-.55	.06	.54
	β	.05	.11	-.06	.25	-.34	.01	.15
6 th to 9 th grade	<i>B</i>	.75	.35	.59	.32	.12	.93	1.07
	β	.29	.17	.21	.19	.08	.23	.29
Diagnosis (yes)	<i>B</i>	-.02	.45	.66	.50	-.39	1.11	.49
	β	-.01	.22	.24	.31	-.24	.27	.13
Pandemic stressors	<i>B</i>	.13c	.04 ^a	.06	.04a	.04	.10a	.17c
	β	.34	.14	.15	.17	.15	.17	.31

Note. EPS = Emotional Problems; CPS = Conduct Problems; HS = Hyperactivity; PPS = Peer-Relationship Problems; PS = Prosocial Behavior; EXT = Externalizing Problems; INT = Internalizing Problems. a = $p \leq 0.05$, b = $p \leq 0.01$. c = $p \leq 0.001$.

Tabela 4*Descriptive Statistics of the Study Variables*

Variables	<i>M (SD)</i>	Minimum	Maximum	25 th Percentile	Median	75th Percentile
Affection	3.63 (.46)	2.00	4.00	3.44	3.75	4.00
Education	3.25 (.74)	.50	4.00	2.50	3.25	3.50
Discipline	0.94 (.69)	.00	3.33	.33	.66	1.33
Social	2.57 (.73)	.25	4.00	2.00	2.50	3.00
RSQ	30.4 (6.63)	17.00	51.00	26.00	30.00	35.00
EPS	3.11 (2.53)	.00	9.00	1.00	2.00	5.00
CPS	1.75 (1.99)	.00	9.00	.00	1.00	3.00
HS	3.70 (2.75)	.00	10.00	1.00	4.00	5.00
PPS	1.30 (1.65)	.00	7.00	.00	1.00	2.00
PS	8.77 (1.59)	4.00	10.00	8.00	9.00	10.00
EXT	5.45 (4.12)	.00	17.00	2.00	5.00	8.25
INT	4.42 (3.69)	.00	15.00	1.75	3.50	7.00

Note. RSQ = Pandemic stressors, EPS = Emotional problems, CPS = Conduct problems, HS = Hyperactivity, PPS = Peer-relationship problems, PS = Prosocial behavior, EXT = Externalizing problems, INT = Internalizing problems.

About peer-relationship problems and internalizing problems in children, parents with high-school education or above reported lower levels than those with incomplete elementary education ($B \leq -1.27$, $\beta \leq -.77$, $p \leq .05$). Externalizing problems were identified in children who had parents with some type of clinical diagnosis ($B = 1.49$, $\beta = .36$, $p \leq .05$). In addition, girls had lower scores for externalizing problems than boys ($B = -1.29$, $\beta = -.31$, $p \leq .05$).

With the exception of prosocial behaviors, whose results showed that increased coercive discipline decreased their scores ($B = -.72$, $\beta = -.31$, $p \leq .001$), for all other subscales, an increase was found in relation to their greater use. Similarly, it was observed that experiencing more stressors resulting from COVID-19 accentuated indicators of emotional and behavioral problems ($B \geq .04$, $\beta \geq .14$, $p \leq .05$), except for hyperactivity.

Discussion

This study aimed to evaluate the impact of sociodemographic variables, parental educational practices, and stressors from the COVID-19 pandemic on children's emotional and behavioral problems. Considering that human development is characterized by a set of multiple levels of interaction (cultural, sociopolitical, economic, parental, and individual), the focus was on parenting, combined with elements of each family's context, in accordance with the assumptions of BTHD (Bronfenbrenner, 2001), in order to seek a better understanding of developmental processes at a potentially stressful time due to the pandemic.

With regard to the sociodemographic variables, it was found that the older the mothers or fathers, the lower the children's hyperactivity scores, as well as the lower the indicators of emotional, peer-relationship, and internalization

problems in the children of those with at least high-school education. It is known that age is directly related to parental education. Poorer education is considered a family adversity associated with an increase in psychopathological symptoms, which, in turn, have a negative impact on educational practices (Jendreizik et al., 2022). The American study by W.J. Han and Hart (2022), involving mothers and fathers with at least one child under the age of 17, showed that those without higher education reported lower levels of happiness among their children/adolescents when they faced challenges, suggesting that parental education may act as a protective factor. In addition, not having a university degree and losing one's job during the pandemic was strongly associated with an increase in coercive parenting practices.

In the same vein, being a young mother or father has been identified as a family risk factor for externalizing problems (Van Zeijl et al., 2006), but no studies have been found that associate that variable with hyperactivity in children, as shown in this study. Similarly, there is limited literature correlating single parenthood with externalizing problems, especially conduct problems in children. However, an American study of five-year-old girls and boys found that combined parental factors, including being a single and young mother, were related to externalizing problems in children, in addition to the use of strict discipline (Brenner & Fox, 1998). The association between being a girl and lower rates of externalizing behavior and hyperactivity is corroborated by extensive literature (Van Zeijl et al., 2006).

Given the pandemic context, it is known that potentially stressful moments are associated with an increase in physical and mental health problems (Sprang & Silman, 2013), which was found to be the case for the mothers/fathers of the children participating in this study. It was observed that the presence of a physical or mental parental diagnosis explained the greater variance in hyperactivity scores and externalizing

problems in children. The study by Bate et al. (2021) showed that, due to COVID-19, the depression symptoms self-reported by mothers and fathers were significant, with about 80% reporting mild to moderate anxiety, 75% mild depression, and more than 50% indicators of trauma. Considering that the sample was mainly composed of women (94%), it is worth noting that longitudinal studies suggest that maternal depression and anxiety increased during the pandemic, especially in situations where they were trying to manage stressors such as income loss and increased domestic demands (Corapci et al., 2024; Gadermann et al., 2021).

Previous studies to the pandemic already pointed to mental health problems in mothers and fathers as risk factors for emotional and behavioral problems in their children, such as hyperactivity and inattention and, especially, externalizing problems (Galéra et al., 2011). In fact, what became evident in this study is that the stress experienced during the pandemic may have accentuated the parenting difficulties faced due to a clinical diagnosis, which seems to have had an impact on the quality of their relationship with their children and, consequently, on their mental health (Penner et al., 2022).

It is also known that parental mental suffering coincides with coercive disciplinary practices (Corapci et al., 2024; Hukkelberg & Ogden, 2021), which corroborate externalizing problems, since children can reproduce maternal/paternal behavior related to the difficulty to control impulses and deal with different stressors. In this regard, it was observed that the coercive-discipline dimension explained the variance in the children's emotional and behavioral problems investigated. It was found that the greater the use of such practices, the higher the scores for conduct, emotional, peer-relationship, externalizing and internalizing problems as well as for hyperactivity. In contrast, the scores for prosocial behavior were lower. Previous research has already indicated that practices characterized by the direct application of force and parental power, including physical punishment, deprivation of privileges, and threats, can cause intense emotions such as hostility, fear, and anxiety, leading to the development of externalizing and internalizing behavior problems in children (J.W. Han & Lee, 2018). When children are exposed to coercive discipline, they tend to have greater difficulty regulating their emotions and do not respond to rules and commitments. In particular, few studies have evaluated hyperactivity separately.

However, in the study conducted by Claussen et al. (2024), it was found that greater parental sensitivity and acceptance during parent-child interactions were inversely associated with hyperactivity in children, reinforcing the idea that positive parenting practices lead to more favorable outcomes for child development, such as prosocial behaviors. However, it should be noted that the affective dimension did not significantly affect the manifestation of emotional and behavioral problems in children. This finding can be explained by the greater demand for parental resources imposed by the context of the COVID-19 pandemic, combined with difficulties related to physical and mental health, prompting parents to act less

affectionately and more coercively with their children (Bate et al., 2021; Prime et al., 2020).

Finally, it was found that the greater the exposure to COVID-19 pandemic stressors, the more frequent the conduct, emotional, peer-relationship, externalization and internalization problems were in children. In Singapore, mothers and fathers who reported experiencing high levels of stress during the period of social isolation increased their use of more severe practices, such as spanking (Chung et al., 2022). Similarly, research by Rodriguez et al. (2021) with mothers and fathers of US children up to 12 years of age showed that 20% of them reported an increase in the use of coercive practices, with more reports of shouting (25%), harsh words (12%), and physical aggression (5%). Therefore, as proposed by Choi et al. (2020), the unprecedented health scenario created by the pandemic has given rise to what the authors call a "second pandemic", referring to its impact on the mental health of families, given the levels of stress experienced and the sudden changes in the routine of families and society, especially those already experiencing situations of greater vulnerability due to their demographic and social characteristics.

The data presented should be interpreted with caution, as they represent a sample consisting predominantly of mothers from southern Brazil with internet access. In addition, the data were collected through a self-report questionnaire completed by mothers and fathers, which may be biased, especially in relation to their children's behaviors. Also, some questionnaires had not been validated for the Brazilian population. Therefore, it is important that future studies refine the methodological procedures to be adopted and collect data from children to more accurately assess subjective characteristics.

Considering the significant impact that coercive disciplinary practices had on all subscales of emotional and behavioral problems assessed, there is a need for interventions aimed at mothers and fathers that can promote positive parenting practices in order to mitigate potential negative outcomes in the short, medium, and long term for parent-child relationships and, above all, for children. To this end, it is necessary to recognize the interrelationship between the characteristics of the child, their mothers and/or fathers, and the context in which they live. The bioecological model, which enables the analysis of the relationship between different domains of human development, can assist healthcare professionals in mapping negative childhood outcomes in a broader manner, recognizing the systematization of risk factors.

Therefore, one of the main contributions of this study was to integrate sociodemographic variables, parental educational practices, and stressors from the COVID-19 pandemic, examining their impacts on children's emotional and behavioral problems. It was found that these variables are synergistically related, as a cascading effect was confirmed: poorer education and not being in a caring relationship, as well as having a diagnosis of physical or mental illness and using coercive disciplinary practices, which were exacerbated

by the stress resulting from the COVID-19 pandemic, led to higher indicators of emotional and behavioral problems in children. Although this association has already been documented in the literature, the use of coercive discipline as a predictor of all the externalizing and internalizing difficulties evaluated in children is not common. Thus, it is plausible to assume that such an effect was due to the stress experienced, the impact of which was still observed after the most severe period of the COVID-19 pandemic.

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