

Family Stress Generated by the Covid-19 Pandemic

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ABSTRACT

In December 2019, the China Centers for Disease Control and Prevention reported a new coronavirus called SARS-CoV-2 and reported a first stage of an outbreak, which was named by the World Health Organization as COVID-19. Fear and uncertainty regarding the health crisis, as well as the sudden change in routine caused by social isolation measures, can lead to a higher incidence of anxiety and stress in people of all ages. This research aimed to verify the family stress generated by the Covid-19 pandemic. Cross-sectional study that was carried out by collecting data in electronic format, avoiding direct contact between researchers and interviewees. Participants were invited to participate in the research through the researcher's social networks facebook® and instagram®.

KEYWORDS: Covid-19; Coronavirus; Family behaviour; Stress; Social isolation

INTRODUCTION

In December 2019, the China Centers for Disease Control and Prevention reported a new coronavirus called SARS-CoV-2 and reported a first stage of an outbreak, which the World Health Organization named COVID-19 [1,2]. Coronavirus considered RNA viruses that cause respiratory infections [3], from a cold to more serious illnesses such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) [4]. It is within this new moment that we are experiencing a pandemic moment of Covid-19 with changes in the environment of confinement and home-office work, as well as school activities among others, related to various behaviors or attitudes

of stress which threaten individuals, instead to enable the growth of transformation of the citizen [5].

Due to health, socioeconomic and political risk factors and the insertion of new technologies in teaching organizations the characteristics of families are being redefined. It fits now, due to the pandemic, this responsibility is currently being managed by the family: carrying out interdisciplinary practices; learn about the strategies of teaching to think and teaching to learn; to encourage the development of communication skills and critical analysis of content; to address the impact of new classroom communication and information technologies

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at home; be concerned with their continuing education and encourage ethical behavior, thus causing a radical change in parents and students [6].

Fear and uncertainty regarding the health crisis, as well as the sudden change in routine caused by social isolation measures, can lead to a higher incidence of anxiety and stress in people of all ages. Stress comes from the English word "Stress" which comes from the Italian word "stringere" and has the sense of distressing, squeezing [7].

It has been used to explain a risk situation for the organism, leaving it weakened and absorbing its reserve of life energy [8]. We know as stress a reaction generated by the organism with psychological, mental, physical, behavioral and hormonal agents, such agents undergo changes to adapt to an event of intense distress [9]. This study verified the family stress generated by the Covid-19 pandemic.

METHODOLOGY

This study is characterized as descriptive, with a cross-sectional design and a quantitative approach. A descriptive research has as its main purpose the description of the characteristics of a given population or phenomenon, or the establishment of relationships between variables [10]. For its development, all ethical principles of

research involving human beings were met, in line with the Resolution of the National Health Council N° 466 of December 12/2012, having been approved by the Univille ethics committee under number 4.374.920. Participants agreed to an informed consent form before starting to answer the questionnaire. Data were collected through an online questionnaire developed using Google docs. The recruitment of research participants was carried out through the researcher's social networks facebook® and instagram®. Their disclosure took place between November and December 2020. The questionnaire consisted of multiple-choice questions covering the general characteristics of the sample and the assessment of the stress level. Stress level was assessed using the Burnout Syndrome questionnaire.

The MBI (Table 1) identifies indices of Down syndrome burnout according to the scores of each dimension, high scores in Emotional Exhaustion (above 26 points), Depersonalization (above 12 points) and Reduction in Personal Achievement (below 38 points) [11]. Descriptive, bivariate and multiple factor analyzes were performed using Poisson regression (forward method). The choice of Poisson regression with robust variance was due to the possibility of it directly estimating the prevalence ratio (PR) in cross-sectional studies and avoiding overestimation of the association.

Table 1: Range of scores indicating the level of Burnout by subscale.

Scores	Short	Moderate	High
Emotional Exhaustion	0-16	17-26	27+
Depersonalization	0-6	12-17	18+
Personal Fulfillment	39+	32-38	0-31

For each category of perceived stress analyzed, variables with $p < 0,20$ in the bivariate analysis were adjusted by Poisson regression. This option is based on the first stage of the proposed Hosmer et al. [12], called "purposeful selection". This proposal begins with a careful univariate analysis of each independent variable in order to identify candidates for multiple regression analysis. The authors recommend the initial selection for the multiple model of those with a p-value of 0,20 or 0,25 (screening criterion), as the use of traditional significance levels (such as 5%) can lead to the exclusion of variables important, from the epidemiological point of view, of the adjustment of the model.

In this study, 0,20 was considered. Qualitative variables were described using ratios and proportions. For the final analysis, a significance level of 5% was considered. All analyzes were performed using Stata software, version 12, for Windows®.

The researched group consisted of 116 participants distributed in the Brazilian states, being 98% in Santa Catarina, 08% in Rio de Janeiro, 05% in São Paulo, 03% in Espírito Santo and 02% in Rio Grande do Norte, which are represented in Figure 1.

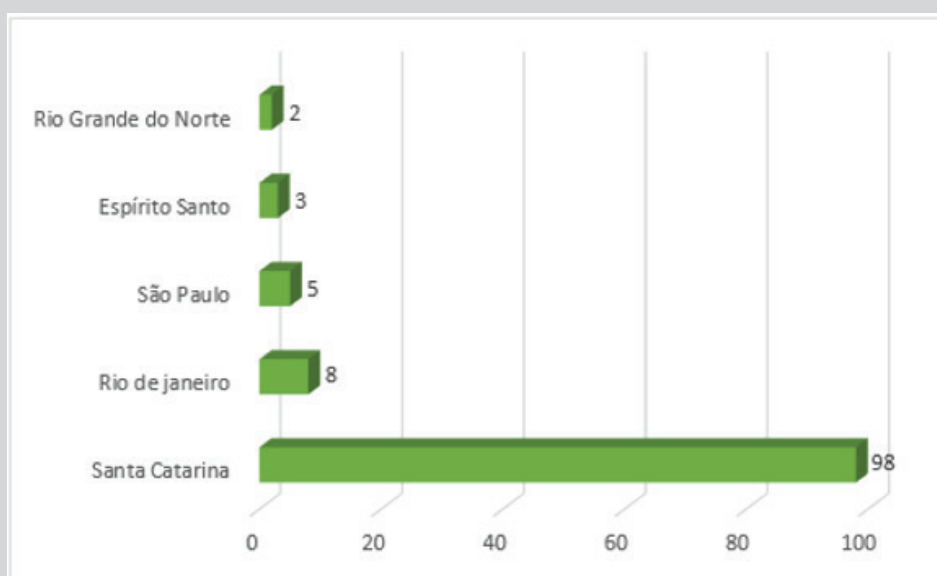


Figure 1.

The percentage of people surveyed in the Brazilian states was distributed as follows: 84% in Santa Catarina, 7% in Rio de Janeiro, 4%

in São Paulo, 3% in Espírito Santo and 2% in Rio Grande do Norte, which are represented in Figure 2.

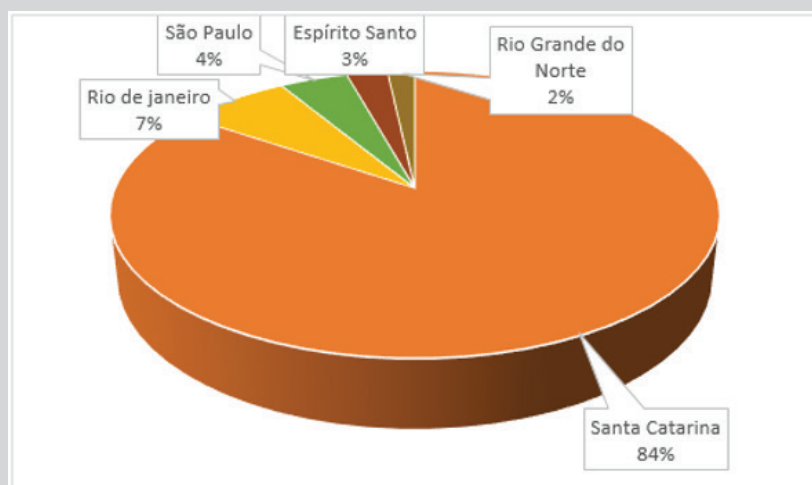


Figure 2.

RESULTS

The present study had a sample composed of 116 participants from families in 5 Brazilian states. Most of the interviewees were female, over 40 years old and living with a partner. As for the variables related to monitoring children’s school classes at home during the COVID-19 pandemic period, most of the respondents were the children’s mothers, most of them were attending elementary and high school, most mothers or others who monitored the children at home reported difficulties with the new educational model made through computer tools made available by the school (Web conferences, Chats, Whatsapp and others). Before the pandemics, most people (56%) who monitored the child’s school at home reported a weekly study load of less than 1 hour. Already, during the pandemic, this was reversed, when most of them needed to participate longer in the weekly routine of the children’s studies. Most

of the people interviewed (94.8%) had basic computer knowledge, gained weight during the pandemic (62%), while a lesser part (19.8%) lost weight during this period.

Regarding perceived stress (PE), 42.2% of respondents were classified as low or normal, 20.7% moderate and 37.1% high or very high. Regarding gender, most (60%) of men have low or normal stress, while 44% of women were classified as having high or very high stress. In the bivariate analysis, as shown in Table 2, there was an association between sex and age with some of the PE categories. Females had higher levels of high or very high EP, and were less likely to be classified with low or normal EP. As for age, 40 to 50 years old showed protection, that is, they were less likely to be classified as having low or normal stress. And a trend towards a greater chance of moderate PE when compared to age up to 40 years.

Table 2: Association between sociodemographic characteristics and the categories of the Perceived Stress Scale in family members during the COVID-19 pandemic, 2020.

	Total	Low or Normal		Moderate		High/Very High	
		N(%)	RP(CI(%5))	N(%)	RP(CI(%5))	N(%)	RP(CI(%5))
Total	116	49(42.2%)		24(20.7%)		43(37.1%)	
Sex							
Masculine	25	15(60%)	1	7(28.0%)	1	3(12.0%)	1
Feminine	91	34(37.4%)	0.62*(0.41-0.95)	17(18.7%)	0.67(0.31-1.43)	40(44.0%)	3.66*(1.23-10.91)
Age							
Up to 40 years old	25	14(56%)	1	3(12.0%)	1	8(32.0%)	1
Between 40 to 50 years	45	13(28.9%)	0.52*(0.29-0.92)	14(31.1%)	2.59*(0.82-8.21)	18(40.0%)	1.25(0.64-2.46)
Over 50 years old	46	22(47.8%)	0.85(0.54-1.35)	7(15.2%)	1.27((0.36-4.50)	17(37.0%)	1.16(0.58-0.2,30)
Marital Status							
No Partner	18	8(44.4%)	1	3(16.7%)	1	7(39.9%)	1
With Partner	98	41(41.8%)	0.94(0.53-1.66)	21(21.4%)	1.29(0.43-3.88)	36(36.7%)	0.95(0.50-1.79)

PR: Prevalence Ratio; CI: Confidence Interval; *p<0.20

As for the aspects related to the monitoring of school classes at home (Table 3), being a mother of the child (ren) and having children in schools in the Early Childhood Education phase were strongly associated with a high or very high EP. Being a mother was also associated with a lower

chance of being classified with low or normal stress Respondents who reported difficulty in adapting to the new educational model were less likely to be classified with low and normal EP and a tendency to have high or normal EP very high.

Table 3: Association between aspects related to monitoring children's school classes at home and the categories of the Perceived Stress Scale during the COVID-19 pandemic, 2020.

Degree of Kinship							
Others	31	19(61.3%)	1	7(22.6%)	1	5(16.1%)	1
Mother	85	30(35.3%)	0.58*(0.39-0.86)	17(20.0%)	0.89(0.41-1.94)	38(44.7%)	2.77*(1.20-6.42)
School Stage							
Others	78	34(43.6%)	1	20(25.6%)	1	24(30.1%)	1
Child education	38	15(39.5%)	0.90(0.57-1.45)	4(10.5%)	0.41*(0.15-1.12)	19(50.0%)	1.65*(1.02-2.58)
Difficulty New Educational Model							
No	33	20(60.6%)	1	5(15.5%)	1	8(24.2%)	1
Yes	83	29(34.9%)	0.58*(0.39-0.86)	19(22.9%)	1.51(0.61-3.73)	35(42.2%)	1.74*(0.90-3.35)
Weight Gain							
No	44	21(47.7%)	1	9(20.5%)	1	14(31.8%)	1
Yes	72	28(38.9%)	0.82(0.53-1.25)	15(20.8%)	1.02(0.49-2.13)	29(40.3%)	1.27(0.75-2.13)
Weight Loss							
No	93	42(45.2%)	1	17(18.3%)	1	34(36.6%)	1
Yes	23	7(30.4%)	0.67(0.35-1.30)	7(30.4%)	1.67*(0.78-3.55)	9(39.1%)	1.07(0.60-1.91)
Load of Studies Before							
Less than 1 hour	65	24(36.9%)	1	14(21.5%)	1	27(41.5%)	1
More than 1 hour	51	25(49.0%)	1.33*(0.87-2.03)	10(19.6%)	0.91(0.44-1.88)	16(31.4%)	0.76(0.46-1.25)
Study Load After							
Less than 1 hour	34	13(38.2%)	1	9(26.5%)	1	12(35.3%)	1
More than 1 hour	82	36(43.9%)	1.15(0.70-1.88)	15(18.3%)	0.69(0.33-1.43)	31(37.8%)	1.07(0.63-1.83)
Knowledge Computer Basics							
No	6	2(33.3%)	1	2(33.3%)	1	2(33.3%)	1
Yes	110	47(42.7%)	1.28(0.40-4.08)	22(20.0%)	0.60(0.18-1.99)	41(37.3%)	1.12(0.35-3.58)

PR: Prevalence Ratio; CI: Confidence Interval; * $p < 0.20$

The Poisson regression analysis is presented in Table 4. After adjustments including variables with $p < 0.20$, the following remained associated with low or normal SE: degree of kinship "mother" (greater chance) and difficulty in adapting to the new educational model

(protection). No variable was associated with moderate PE. And, in addition to having a child in the "Educação Infantil" school stage, the degree of kinship "mother" was also associated with EP high or very high.

Table 4: Poisson regression of factors associated with the categories of the Perceived Stress Scale in the family during the COVID-19 pandemic, 2020.

Variable	RP	P	IC95%
Low or Normal Stress			
Degree of kinship - mother	0.62	*	0.027 (0.41-0.95)
Difficulty adapting to the New Educational Model	0.54	*	0.002 (0.37-0.79)
Age: 40 to 50 years	0.59	0.077	(0.33-1.06)
Age: over 50 years old	0.97	0.929	(0.61-1.56)
Study load: more than 1 hour	1.24	0.305	(0.82-1.87)
Moderate Stress			
School stage: Early Childhood Education	0.49	0.066	(1.51-1.06)
Age: 40 to 50 years	2.73	0.079	(0.89 - 8.41)
Age: over 50 years old	1.31	0.673	(0.37 - 4.62)
Weight loss	1.37	0.377	(0.68 - 2.75)
High or Very High Stress			
School stage: Early Childhood Education	1.71	*0.016	(1.11-2.63)
Degree of kinship - mother	2.93	*0.011	(0.58-4.33)
Difficulty adapting to the New Educational Model	1.77	0.065	(0.97-3.24)

DISCUSSION

Stress has been defined as our body's physical response to a stimulus. "Fight or flight" mode is the term used when the body is in a state of attack, when this happens a mixture of hormones and chemicals such as adrenaline, cortisol and norepinephrine are released to adapt the body to physical action. In the long term, stress can be harmful to health, high cortisol levels cause hyperglycemia and high blood pressure and decreased libido. Teaching is a generally stressful task, with obvious consequences for the physical and mental health of teachers who, in theory, are prepared for this role, imagine how parents must feel during the pandemic period [13].

Stress is often measured at work, but it can occur in other environments as well, so let's assess in the family context, how parents and children are coping in this new scenario pandemic of Covid-19. Due to health, socioeconomic and political risk factors and the insertion of new technologies in teaching organizations the characteristics of families are being redefined. It fits now, due to the pandemic, this responsibility is currently being managed by the family: carrying out interdisciplinary practices; learn about the strategies of teaching to think and teaching to learn; to encourage the development of communication skills and critical analysis of content; to address the impact of new classroom communication and information technologies at home; be concerned with their continuing education and encourage ethical behavior, thus causing a radical change in parents and students [6].

The overload of work at home often experienced by the woman and many other tasks can generate great family stress, especially in the relationship with other people in the family that they do not recognize as work. Showing this, together with the socio-cultural factor, associated with the overload of teaching and learning can potentiate family stress. The family, despite being undergoing transformations, can still be considered by specialists as the basis of formation, today it is perceived that the formation of the character of the citizen is linked to the family base [14]. Home stress has the ability to cause damage to the physical and mental health of parents and children. are often asymptomatic for onetime course, as the symptoms appear discreetly, which makes the diagnosis difficult and causes negative consequences for the individual's health and can often progress to other serious pathologies [15].

Due to its high costs and deleterious effects, stress affects several levels, from individual to organizational, is an area that has been extensively studied. Speaking at an individual level, there are consequences due to dissatisfaction and fulfillment problems, going beyond disinterest and demotivation, emotional and physical exhaustion, they can also lead to physical and mental health problems, such as changes in mood, consumption excessive use of tobacco and alcohol and several symptomatic complaints, now potentiated by social isolation [16]. Frequent changes due to the pandemic are being imposed on individuals and can also cause problems such as dissatisfaction, insecurity, irritation and disinterest [17].

CONCLUSION

The Covid-19 pandemic was shown to be associated with all dimensions of Burnout (emotional exhaustion, depersonalization and low professional fulfillment), especially in females. In this sense, we

were able to verify the stress remained associated with the degree of kinship "mother" (greater chance) and difficulty in adapting to the new educational model, who had difficulties in adapting to the new methodology of teaching their children, which became tele-face-to-face and were associated with all dimensions of Burnout and that this perception can negatively impact the quality of life of families and that if not treated can lead to other illnesses.

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