

# Revista Contexto & Saúde Editora Unijuí

Programa de Pós-Graduação em Atenção Integral à Saúde ISSN 2176-7114 — v. 24, n. 48, 2024

http://dx.doi.org/10.21527/2176-7114.2024.48.14531

**HOW TO CITE:** 

Steinbach M, Kammer PV, da Silva CA, Santos KS, de Lima VAS, Massignan C. et al. The impact of the covid-19 pandemic on parental permissivity: A cross-sectional study. Rev. Contexto & Saúde, 2024;24(48):e14531

#### **ORIGINAL ARTICLE**

# The Impact of the Covid-19 Pandemic on Parental Permissivity: A Cross-Sectional Study

Marina Steinbach<sup>1</sup>; Pedro Vitali Kammer<sup>2</sup>; Camila Alvarenga da Silva<sup>3</sup> Kleyslla Souza Santos<sup>4</sup>; Victor André Silva de Lima<sup>5</sup>; Carla Massignan<sup>6</sup> Michele da Silva Bolan<sup>7</sup>

#### Highlights:

- 1. Parents allowed their children to play/practice physical activities less.
- 2. Parents have allowed more use of electronic devices for entertainment;
- 3. Parents allowed fewer visits to friends/family homes, stores, markets, shopping malls

#### **ABSTRACT**

This cross-sectional study sought to uncover how the pandemic impacted parental permissiveness in the routine activities of Brazilian children. The 466 parents of children aged between 3 and 10 years answered a questionnaire about the frequency with which they allowed their children to use electronic devices and engage in social activities after the onset of the Covid-19 pandemic. The independent variables were the child's age and gender, family income, the number of people contributing to income, the form of employment during the pandemic, whether the respondent was responsible for household tasks and if these affected their routine, and who looked after the child when they needed to leave home. The distribution assessment of independent variables (categorical) according to the 3 degrees of the dependent variable (more, less, the same), and parental permission (ordinal categorical), was performed by the Chi-square test. After the onset of the pandemic, parents allowed fewer outdoor play/physical activities in public places (409-87.76%) and visits to friends' and relatives' houses (421-90.34%); and increased the frequency of permitting the use of electronic devices for entertainment (358 -76.8%). The frequency of taking children to markets, shops, malls, and similar did not have a significant change (p=0.1494). The current study pointed out significant changes in parental permissiveness due to the isolation required by the Covid-19 pandemic.

Keywords: children; Covid-19; screen time; physical activity; child development.

<sup>&</sup>lt;sup>1</sup> Federal University of Santa Catarina (UFSC). Florianópolis/SC, Brasil. https://orcid.org/0000-0001-7081-2061

<sup>&</sup>lt;sup>2</sup> Federal University of Santa Catarina (UFSC). Florianópolis/SC, Brasil. https://orcid.org/0000-0001-6086-4810

<sup>&</sup>lt;sup>3</sup> University of Brasília (UNB). Brasília/DF, Brasil. https://orcid.org/0000-0003-0201-8020

<sup>&</sup>lt;sup>4</sup> University of Brasília (UNB). Brasília/DF, Brasil. https://orcid.org/0000-0003-1086-602X

<sup>&</sup>lt;sup>5</sup> University of Brasilia (UNB). Brasília/DF, Brasil. https://orcid.org/0000-0003-1622-1265

<sup>&</sup>lt;sup>6</sup> University of Brasilia (UNB). Brasília/DF, Brasil. https://orcid.org/0000-0001-8033-055X

Federal University of Santa Catarina (UFSC). Florianópolis/SC, Brasil. https://orcid.org/0000-0002-2835-9061



#### INTRODUCTION

Covid-19 was considered in March 2020 as the second pandemic of the 21st century by the World Health Organization)<sup>1</sup> With the lack of information related to prevention, treatment, transmissibility rate, and infection of the disease, non-pharmacological interventions (NPIs) such as individual protection measures (hand washing, respiratory etiquette, and social distancing), environmental (routine cleaning of environments and surfaces), and community (restriction or prohibition of spaces where there may be gatherings of people)<sup>2</sup>, were the recommended measures at the time<sup>3</sup>.

The use of these measures significantly impacted daily activities, people's lives, and society. Among the measures implemented, the restriction of social contact can have consequences for people's mental<sup>4</sup> and physical health<sup>5</sup>. As social isolation is considered the most effective measure in reducing the transmissibility of the disease, it generated sudden changes in the daily lives of families and proved to be a challenging experience for many. The distance imposed on us in relation to the people we love, the restriction of our daily freedoms, the uncertainty resulting from the lack of knowledge about the state of the disease and the monotony can, at certain times, cause significant and emotionally intense effects<sup>6</sup>.

Thus, to comply with isolation recommendations, many parents changed the frequency with which they allowed their children to carry out activities in the presence of other people, and studies<sup>7</sup> highlight that the lack of regular interaction with peers of the same age can delay the development of crucial social skills and affect self-esteem and self-confidence.

Although there are previous studies regarding the increase in the use of electronic devices in both children and adults after the onset of the Covid-19 pandemic, there is no research that explicitly addressed the influence of the pandemic on parental decisions about participation in in-person physical and social activities. and the use of these devices by Brazilian children. Given this, the present study set out to understand the impact of Covid 19 on the permissiveness of parents of Brazilian children aged 3 to 10, about the use of electronic devices, physical activities, and social interactions.

#### **METHODOLOGY**

This is an observational cross-sectional study, approved by the Research Ethics Committee of the Faculty of Health Sciences (CEP/FS) of University of Brasilia and approved under number 4,535,075. It is reported in accordance with the "Checklist for Reporting Results of Internet E-Surveys (Cherries)" reporting guide. All participants signed the Free and Informed Consent (IC).

As the objective was to reach groups of parents of children aged 3 to 10 from all over Brazil, the sample was carried out by convenience, through social media. To do this, we use various social media, including parent groups on Whats App, Instagram, and Facebook. Furthermore, in our invitation, we asked that parents, if possible, forward it to a friend who has a child of the same age. A questionnaire was sent electronically to people responsible for the children, inviting them to answer questions about the children's social habits before and after the start of the Covid-19 pandemic. Guardians under the age of 18 were excluded from the sample.

The data was obtained from 03/04/2021 to 04/07/2021, through an online form, created and managed using the Google Forms tool, from Google Drive®, and tabulated in Microsoft Excel, from Microsoft Office®.

The questionnaire was based on the study developed<sup>8</sup>, adapted, and translated into Portuguese (Brazilian) to facilitate understanding by participants. To better relate to the research object, some items were excluded, and others were developed and added, considering the Brazilian reality.



The outcome variable was the change in parental permissiveness, caused by the Covid-19 pandemic. It is important to mention that this study did not seek to identify parental styles, such as authoritarian, authoritative, or indulgent (permissive)<sup>9</sup> in the interviewed parents. In this research, the change in permissiveness refers only to the change in the tolerance of the interviewed parents, in the face of situations that, if they occurred outside the pandemic moment, would not be allowed.

This change in permissiveness was investigated through the following questions, organized into blocks: Block 1: "I allowed my child to play/practice physical activities with other children in public environments (squares, courts, playgrounds...)"; Block 2: "I allowed my child to go to friends/family's houses"; Block 3: "I took my child to stores, markets, shopping malls and similar things"; Block 4: "I allowed my child to use electronic devices for entertainment. The answer options being:much less, less, equal, more and much more than before the pandemic.

The independent variables were the child's age and sex, family income and the number of people contributing to the income, form of work during the pandemic, whether the respondent was responsible for domestic activities and whether these affected their routine, as well as information about who took care of the child when he needed to leave the house.

The age group was grouped according to Piaget's Development Theory, which characterizes child development into four phases: sensorimotor (0 to 2 years), pre-operational (2 to 6 years), concrete operational (7 to 12 years), formal operational (from 12 years old)<sup>10</sup>. In this study, only two phases were used: the pre-operational phase, Group A (GA) children aged 3 to 6 years; and the concrete operational phase, Group B (GB) children aged 7 to 10 years.

To calculate the sample size, a study carried out in 2020<sup>11</sup> was used, which concluded that 85.8% of parents showed changes in mood and stress due to the pandemic. This data brought understanding to the magnitude of the psychological impact of the pandemic on parents, providing a solid basis for investigating how these emotional changes can influence parents' permissiveness in relation to their children's behavior. The high prevalence of emotional changes found in this study suggests that the pandemic has placed significant pressure on the psychological state of parents, which in turn may have influenced their decisions and attitudes towards the education and care of their children. The results of this research indicate a correlation between high levels of parental anxiety and depression and a greater potential for child abuse. Furthermore, they showed that greater parental support and greater perceived self-control during the pandemic are associated with lower perceived stress and a lower potential for child abuse.

The confidence level was 95% and error was 5%, and the sample was adjusted by 20% to compensate for the loss of or non-adherence to the questionnaire, totaling a minimum sample of 235 participants.

In this study, data analysis was carried out using descriptive and inferential statistical techniques. For qualitative variables, the distribution of absolute and relative frequencies was shown. For quantitative variables, measures of central tendency were used, and normality was verified with the D'Agostino-Pearson test.

The research also analyzed how the independent variables (categorical) were distributed in relation to the three degrees of the dependent variable, which is parental permission (ordinal categorical). For this, the Chi-square test was used.

An alpha error of 5% was established to reject the null hypothesis, and statistical calculations were performed using the BioEstat 5.3 and SPSS 27 programs.



#### **RESULTS**

Data were obtained from 541 guardians and their children. However, there were repeated responses identified by: e-mail (5); date of birth (5); and out-of-age child (65). Thus, the present study analyzed data from n=466 children and their caregivers. Of these, 88% were female (n=410) and 12% were male (n=12%) and aged between 19 and 62 years (mean 39.2±5.1 years). The children were between 3 and 10 years old (mean 5.4±2.1 years) and 50.2% (n=234) were male.

## Block 1: Physical activity and playing with other children

When asked about allowing their child to play/practice physical activities with other children in public environments (squares, sports courts, playgrounds...), most parents (409 - 87.76%) reported having decreased the frequency of permissibility. However, there was a significant difference (p=0.0406\*) for parents whose child was in the age range 3 to 6 years (GA) (85.3%), who reported no change in how often they allowed this type of activity during the pandemic.

Parents who looked for an extra income (p=0.0007\*), allowed their child to practice this type of activity even more than before the pandemic. Those parents whose child went out with their guardians when they were away from home (p=0.0453\*) reported that their child played less often in public environments than before the pandemic, and families that had family income (p=0.0458\*) of up to R\$11,300.00 maintained the frequency that their child played with other children (Table 1).

Table 1 - I allowed my child to play/practice physical activities with other children.

	Le	ess	Eq	Equal		ore	p-value
	n	%	n	%	n	%	n
Group according to age	409		46		11		p=0.0406*
GA	279	85.3	38	11.6	10	3.1	327
GB	130	93.5	8	5.8	1	0.7	139
Child's Gender							p=0.7977
Male	203	86.8	25	10.7	6	2.6	234
Female	206	88.8	21	9.1	5	2.2	232
How many people contribute	to the fa	mily incon	ne?				p=0.8320
1	71	86.6	9	11.0	2	2.4	82
2	319	87.4	37	10.1	9	2.5	365
3	14	100.0	0	0.0	0	0.0	14
4	5	100.0	0	0.0	0	0.0	5
What is your household incor	ne?						p=0.0458*
800	3	100.0	0	0.0	0	0.0	3
Up to 1800	5	100.0	0	0.0	0	0.0	5
Up to 3100	18	81.8	2	9.1	2	9.1	22
Up to 5700	52	98.1	1	1.9	0	0.0	53
Up to 11300	122	84.1	22	15.2	1	0.7	145
Up to 25500	124	89.2	9	6.5	6	4.3	139
More than 25000	85	85.9	12	12.1	2	2.0	99



How did you work during the	Pandem	ic period?					p=0.0007*
Home office	196	92.5	13	6.1	3	1.4	212
I was already unemployed	25	86.2	3	10.3	1	3.4	29
Maintained work routine	88	81.5	19	17.6	1	0.9	108
Lost the job	9	81.8	2	18.2	0	0.0	11
Looked for extra income	5	62.5	1	12.5	2	25.0	8
Reduced Hours	80	87.0	8	8.7	4	4.3	92
Did not answer	6	100.0	0	0.0	0	0.0	6
Are you responsible for house	p=0.5427						
No	50	84.7	7	11.9	2	3.4	59
Partially	248	86.7	30	10.5	8	2.8	286
Totally	111	91.7	9	7.4	1	0.8	121
Do household activities influe	ence your	routine?					p=0.4177
No	23	76.7	6	20.0	1	3.3	30
Partially	156	88.6	16	9.1	4	2.3	176
Totally	230	88.5	24	9.2	6	2.3	260
When you are away from hor	ne, who	takes care	of your	child(ren	)?		p=0.0453*
Stay alone	11	91.7	0	0.0	1	8.3	12
Employee	135	86.0	18	11.5	4	2.5	157
Relatives	172	92.0	13	7.0	2	1.1	187
Go out with the guardian	65	78.3	14	16.9	4	4.8	83
Others	26	96.3	1	3.7	0	0.0	27

Block 2: Going to friends'/relatives' houses

Concerning allowing their child to go to friends' houses and relatives' houses, most participants said they had allowed this type of activity less often (421-90.34%). There was a significant difference in four variables: the way of working during the pandemic, whether the person responsible for household activities, whether the household activities affected the guardian's routine, and who the child stayed with when the guardian needed to be away from home.

Parents who looked for an extra income (p=0.0051\*), those who were not responsible for household activities (p=0.0077\*), and those whose household activities did not affect their routine (p=0.0079\*) did not change the frequency they allowed their child to go to friends' houses and relatives' houses. Those who answered that when they were away from home the child went out with the guardian (p=0.0136\*) began to allow the child to go to friends' houses and relatives' houses less often than before the pandemic (Table 2).



Table 2 – I allowed my child to go to friends'/relatives' houses

	Less		Equ	Equal M			p-value
	n=421	%	n=34	%	n=11	%	n
Group according to age							p=0.2095
GA	291	89.0	26	8.0	10	3.1	327
GB	130	93.5	8	5.8	1	0.7	139
Child's Gender							p=0.2575
Male	209	89.3	21	9.0	4	1.7	234
Female	212	91.4	13	5.6	7	3.0	232
How many people contribut	e to the fa	mily inco	me?				p=0.8854
1	73	89.0	8	9.8	1	1.2	82
2	330	90.4	25	6.8	10	2.7	365
3	13	92.9	1	7.1	0	0.0	14
4	5	100.0	0	0.0	0	0.0	5
What is your household inco	me?						p=0.8946
800	3	100.0	0	0.0	0	0.0	3
Up to 1800	5	100.0	0	0.0	0	0.0	5
Up to 3100	19	86.4	2	9.1	1	4.5	22
Up to 5700	51	96.2	2	3.8	0	0.0	53
Up to 11300	128	88.3	14	9.7	3	2.1	145
Up to 25500	127	91.4	9	6.5	3	2.2	139
More than 25000	88	88.9	7	7.1	4	4.0	99
How did you work during th	e Pandemi	ic period?	•				p=0.0051*
Home office	196	92.5	11	5.2	5	2.4	212
I was already unemployed	27	93.1	0	0.0	2	6.9	29
Maintained work routine	94	87.0	13	12.0	1	0.9	108
Lost the job	11	100.0	0	0.0	0	0.0	11
Looked for extra income	5	62.5	3	37.5	0	0.0	8
Reduced Hours	83	90.2	7	7.6	2	2.2	92
Did not answer	5	83.3	0	0.0	1	16.7	6
Are you responsible for hou	sehold acti	ivities?					p=0.0077*
No	48	81.4	10	16.9	1	1.7	59
Partially	259	90.6	17	5.9	10	3.5	286
Totally	114	94.2	7	5.8	0	0.0	121
Do household activities influ	ience your	routine?					p=0.0079*
No	23	76.7	7	23.3	0	0.0	30
Partially	160	90.9	10	5.7	6	3.4	176
Totally	238	91.5	17	6.5	5	1.9	260
When you are away from ho	me, who t	akes care	of your	child(re	n)?		p=0.0136*
Stay alone	11	91.7	1	8.3	0	0.0	12
Employee	140	89.2	13	8.3	4	2.5	157



Relatives	179	95.7	7	3.7	1	0.5	187
Go out with the guardian	67	80.7	12	14.5	4	4.8	83
Others	24	88.9	1	3.7	2	7.4	27

# Block 3: Take to stores, markets, malls, and other similar places

Regarding taking the child to stores, markets, malls, and other similar places, there was no significant difference in any of the variables surveyed, and almost all the participants took their child to these environments less often (Table 3).

Table 3 – I took my child to stores, markets, malls, and the like

	Less		Equ	ual	М	ore	p-value
	n=447	%	n=13	%	n=6	%	n
Group according to age							p=0.3929
GA	311	95.1	11	3.4	5	1.5	327
GB	136	97.8	2	1.4	1	0.7	139
Child's Gender							p=0.2748
Male	223	95.3	9	3.8	2	0.9	234
Female	224	96.6	4	1.7	4	1.7	232
How many people contribute to	the family	income?					p=0.9833
1	78	95.1	3	3.7	1	1.2	82
2	350	95.9	10	2.7	5	1.4	365
3	14	100.0	0	0.0	0	0.0	14
4	5	100.0	0	0.0	0	0.0	5
What is your household income	?						p=0.8738
800	3	100.0	0	0.0	0	0.0	3
Up to 1800	5	100.0	0	0.0	0	0.0	5
Up to 3100	20	90.9	1	4.5	1	4.5	22
Up to 5700	52	98.1	0	0.0	1	1.9	53
Up to 11300	141	97.2	3	2.1	1	0.7	145
Up to 25500	133	95.7	4	2.9	2	1.4	139
More than 25000	93	93.9	5	5.1	1	1.0	99
How did you work during the Pa	andemic pei	riod?					p=0.2237
Home office	208	98.1	2	0.9	2	0.9	212
I was already unemployed	28	96.6	1	3.4	0	0.0	29
Maintained work routine	100	92.6	7	6.5	1	0.9	108
Lost the job	11	100.0	0	0.0	0	0.0	11
Looked for extra income	7	87.5	1	12.5	0	0.0	8
Reduced Hours	87	94.6	2	2.2	3	3.3	92
Did not answer	6	100.0	0	0.0	0	0.0	6



Are you responsible for househol	Are you responsible for household activities?										
No	56	94.9	3	5.1	0	0.0	59				
Partially	276	96.5	6	2.1	4	1.4	286				
Totally	115	95.0	4	3.3	2	1.7	121				
Do household activities influence	p=0.1494										
No	27	90.0	3	10.0	0	0.0	30				
Partially	169	96.0	4	2.3	3	1.7	176				
Totally	251	96.5	6	2.3	3	1.2	260				
When you are away from home, w	who takes	care of yo	our chil	d(ren)?			p=0.1585				
Stay alone	12	100.0	0	0.0	0	0.0	12				
Employee	148	94.3	7	4.5	2	1.3	157				
Relatives	185	98.9	1	0.5	1	0.5	187				
Go out with the guardian	76	91.6	4	4.8	3	3.6	83				
Others	26	96.3	1	3.7	0	0.0	27				

# Block 4: Use of electronic devices

Considering the use of electronic devices for entertainment, most parents (358-76.82%) started to allow their child to make more use of this type of technology. Only the variables family income (p<0.0001\*) and how they worked during the pandemic (p=0.0148\*) showed statistical significance. Parents who had a family income of up to R\$ 800.00 and those who looked for an extra income caused the use of electronic devices to decrease (Table 4).

Table 4 – Use of electronic devices for entertainment.

	Le	SS	Eq	ual	Mo	re	p-value
	n=13	%	n=95	%	n=358	%	n
Group according to age							p=0.0961
GA	12	3.7	71	21.7	244	74.6	327
GB	1	0.7	24	17.3	114	82.0	139
Child's Gender							p=0.9013
Male	7	3.0	46	19.7	181	77.4	234
Female	6	2.6	49	21.1	177	76.3	232
How many people contribute	to the fan	nily incon	ne?				p=0.2215
1	5	6.1	22	26.8	55	67.1	82
2	8	2.2	68	18.6	289	79.2	365
3	0	0.0	4	28.6	10	71.4	14
4	0	0.0	1	20.0	4	80.0	5
What is your household incom	p<0.0001*						
800	1	33.3	1	33.3	1	33.3	3
Up to 1800	1	20.0	3	60.0	1	20.0	5
Up to 3100	3	13.6	7	31.8	12	54.5	22



Up to 5700	2	3.8	14	26.4	37	69.8	53			
Up to 11300	1	0.7	26	17.9	118	81.4	145			
Up to 25500	3	2.2	28	20.1	108	77.7	139			
More than 25000	2	2.0	16	16.2	81	81.8	99			
How did you work during the Pandemic period?										
Home office	4	1.9	40	18.9	168	79.2	212			
I was already unemployed	1	3.4	4	13.8	24	82.8	29			
Maintained work routine	1	0.9	27	25.0	80	74.1	108			
Lost the job	1	9.1	0	0.0	10	90.9	11			
Looked for extra income	2	25.0	1	12.5	5	62.5	8			
Reduced Hours	4	4.3	22	23.9	66	71.7	92			
Did not answer	0	0.0	1	16.7	5	83.3	6			
Are you responsible for house	ehold acti	ivities?					p=0.4953			
No	1	1.7	12	20.3	46	78.0	59			
Partially	8	2.8	52	18.2	226	79.0	286			
Totally	4	3.3	31	25.6	86	71.1	121			
Do household activities influe	ence your	routine?					p=0.7035			
No	1	3.3	8	26.7	21	70.0	30			
Partially	3	1.7	37	21.0	136	77.3	176			
Totally	9	3.5	50	19.2	201	77.3	260			
When you are away from hor	ne, who t	akes care	of your	child(ren)	)?		p=0.8877			
Stay alone	0	0.0	3	25.0	9	75.0	12			
Employee	3	1.9	28	17.8	126	80.3	157			
Relatives	7	3.7	37	19.8	143	76.5	187			
Go out with the guardian	2	2.4	20	24.1	61	73.5	83			
Others	1	3.7	7	25.9	19	70.4	27			

#### **DISCUSSION**

The findings of the present study point to changes in the children's routine in all evaluated outcomes. After the beginning of the Covid-19 pandemic, parents started to allow their child to play/practice physical activities with other children in public environments (squares, sports courts, playgrounds...) at a lower frequency than when there was no pandemic, decreasing the frequency that they allowed their child to go to friends'/relatives' houses, started taking less often their child to stores, markets, malls and other similar places, and allowed their child to make use of electronic devices for entertainment more often than before the beginning of the Covid-19 pandemic.

The data found corroborate with the study<sup>12</sup> who observed a 61% reduction in children's physical activities during the pandemic. Researchers warn that physical activities are essential, especially in this age group, for cognitive development, obesity prevention, and control of cardiometabolic risk factors<sup>11</sup>.

Child development (motor, affective and cognitive) is generated by interaction with the environment, the body itself, and other children and adults<sup>10</sup>. And, the decrease in the practice of



physical activity and playing measured in this study may have implications for learning, development, and socialization. Playing is one of the ways to acquire skills, express feelings and anxieties, and build emotions within oneself, and the lack of playful experiences can cause developmental delays<sup>13</sup>. For Piaget, cognitive and psychosocial growth occurs in 4 stages, and the children involved in this research are experiencing the preoperative stage (2 to 7 years) when imagination and memory develop, and the concrete operational (7 to 11 years) when they understand the existence of rules and different opinions on the same subject<sup>10</sup>.

As children interact they add new information and test their knowledge, and this interaction is extremely important for the sedimentation of previous learning and the development of new skills<sup>10</sup>. This brings an alert to the moment of the pandemic, and consequently of the isolation, experienced by children, as observed in this and other studies<sup>14,15</sup>.

In the Netherlands, there was a 3% decline in learning for approximately 350,000 children aged 8 to 11 years after the beginning of the pandemic, and in families where parents had low schooling, the reduction was 40% compared to an average student<sup>16</sup>. A study carried out in 2020, at the beginning of the pandemic, observed that the reading and math skills of 4.4 million students in grades 3 to 8 in the United States were 5 to 10% lower than in a normal school year<sup>17</sup>. And, in Belgium<sup>18</sup>, significant learning losses were identified and substantial increases in educational inequality.

The decrease in the frequency that parents let their children go to relatives' and friends' houses during the pandemic, and the resulting isolation and lack of interpersonal relationships found in this study, corroborate the findings in several recent studies that warn of the impact there may be on children's mental health and well-being. A systematic review study carried out in 2021 concluded that the mental health of children and adolescents has worsened in recent years, probably due to the pandemic<sup>19</sup>.

A systematic review carried out in 2021 identified several risk factors for healthy child development, including social isolation<sup>20</sup>. In Latin America, telephone surveys showed that children under 6 years old, in Chile, started to sleep worse (29%) and to eat worse (16%), and in Argentina, the percentages were 46% and 48%, respectively<sup>21</sup>.

Children naturally need recreational space to develop cognitively and socially, and leisure provides educational activities, socialization, and cognitive and psychosocial development<sup>22</sup>. Another systematic review concluded that children and adolescents are more likely to develop high rates of depression and anxiety during and after the end of forced isolation<sup>7</sup>.

It is through the process of interaction that children learn to carry out their activities under the guidance of others, and later independently. This learning requires observation and experience with others, whether of the same age or with more experience, being essential for cognitive, emotional, linguistic, and motor development<sup>22</sup>. The isolation verified in this study may have reduced the possibilities of learning different ways of "doing" and "being" since it allowed coexistence with a small number of people, along with the stimulation of creativity.

Another aspect observed in this study was the decrease in the frequency with which parents took their children to stores, markets, malls, and other similar places, probably seeking to reduce the chance of contagion to their children. Contact with new places can be established as stimuli for learning, creating new memories, and consequently the child's cognitive development. However, considering the pandemic scenario, this type of behavior change was expected, since the risks needed to be mitigated, even if, in return, there was a loss in this type of learning.

Child development only works if children can organize themselves freely throughout the territory, without barriers to developing their skills, and can build their physical and emotional bonds freely<sup>24</sup>. A survey carried out in Chile with 10,013 parents with children under the age of 6 showed that 55% of them stopped leaving home after the beginning of the pandemic<sup>21</sup>.



Another result of the present study was the increase in the use of electronic devices with the arrival of the pandemic, corroborating a study carried out in the United States that, when researching the use of screens with 129 parents of children aged 2 to 11, found an increase of 50 minutes per day after the pandemic began<sup>25</sup>.

Two other studies, carried out in India<sup>26</sup> and Portugal<sup>27</sup>, in addition to the increase in screen time, also observed an increase in sedentary lifestyle and sleep interruptions, and a decrease in the frequency of physical activity. In Brazil, a survey carried out with 100 children aged 2 to 12 years found no association between digital technologies and BMI, however it concluded that eutrophic children use screens less than those who are overweight, obese and underweight<sup>28</sup>.

Traditional games involving make-believe, imagination, and body movement have lost space in children's daily lives, and have been replaced by digital toys, smartphones, tablets, and computers<sup>29</sup>. The results of the present study corroborate this finding and, like the few other studies carried out after the onset of the pandemic, suggest that this event accelerated this process.

A study carried out in 2019 already showed an increase in the use of screens by children while their parents performed daily tasks (70%) or household chores (59.6%), to calm them down (65%) and to sleep (29%)<sup>30</sup>. With the pandemic a new task emerged, working and monitoring your children simultaneously, and at that moment electronic devices became great allies.

Although the use of devices can help to maintain socialization and learning in times of isolation, it is worth noting that interactivity with screens reduces physical contact with people, and, consequently, moments that involve the exchange of looks, touches, words and gestures, which may have psychological consequences in their development<sup>31</sup>. In addition, it causes a lack of a sense of autonomy in both children and parents that the child has learned to be alone<sup>32</sup>.

It is important to mention that data collection via the internet is one of the limitations of this study, as it may not reach all population strata (such as people with lower education/income). Furthermore, there was a concentration of responses received in the Central-West and South regions of the country, which made it impossible to represent the sample. Another point to be observed when interpreting the results is the possible social class affected by the research, evidenced by high family income, which can bias the results.

## **CONCLUSION**

The present study showed significant changes in parental permissiveness regarding the use of electronic devices and social activities, due to the isolation required by the Covid-19 pandemic. Parents reported that after the start of the Covid-19 pandemic, they allowed their child to play or practice physical activities with other children in public environments less frequently, or to visit friends/family homes, stores, markets, shopping malls. However, they allowed their child to make greater use of electronic devices for entertainment.

## **REFERENCES**

- <sup>1</sup> Organização Mundial da Saúde. OMS anuncia surto de Covid-19 como pandemia. Genebra: Organização Mundial da Saúde; 2020.
- <sup>2</sup> Qualls N, Levitt A, Kanade N, Wright-Jegede N, Dopson S, Biggerstaff M, et al. Community Mitigation Guidelines to Prevent Pandemic Influenza United States. Atlanta (GA): Morbidity and Mortality Weekly Report. Recommendations and Reports. Apr. 2017;66(1):1-34. Sponsored by the Centers for Disease Control and Prevention.
- <sup>3</sup> Anderson RM, Heesterbeek H, Klinkenberg D, Hollingsworth TD. How will country-based mitigation measures influence the course of the Covid-19 epidemic? The Lancet. 2020;395(10228):931-934.
- <sup>4</sup> Kauhanen L, Wan Mohd Yunus WMA, Lempinen L, et al. A systematic review of the mental health changes of children and young people before and during the Covid-19 pandemic. Eur Child Adolesc Psychiatry. 2023;32(6):995-1.013.



- <sup>5</sup> Wunsch K, Kienberger K, Niessner C. Changes in Physical Activity Patterns Due to the Covid-19 Pandemic: A Systematic Review and Meta-Analysis. Int J Environ Res Public Health. 2022;19(4):2.250.<sup>6</sup> Brooks SK, Webster RK, Smith LE, et al. The Psychological Impact of Quarantine and How to Reduce it: Rapid Review of the Evidence. The Lancet. 2020;395(10227):912-920.<sup>7</sup> Loades ME, Chatburn E, Higson-Sweeney N, et al. Rapid Systematic Review: The Impact of Social Isolation and Loneliness on the Mental Health of Children and Adolescents in the Context of Covid-19. J Am Acad Child Adolesc Psychiatry. 2020;59(11):1.218-1.239.e3.
- <sup>8</sup> Waller R, Chester M, Rodriguez Y, Wagner NJ. Development of the Parenting in a Pandemic Scale (PIPS). PsyArXiv; 2020. Available from: psyarxiv.com/f8tzm
- <sup>9</sup> Baumrind D. Effects of Authoritative Parental Control on Child Behavior. Child Development. 1966;37(4):887-907.<sup>10</sup> Piaget J. A formação do símbolo na criança, imitação, jogo, sonho, imagem e representação de jogo. São Paulo: Zanhar; 1971.
- <sup>11</sup> Brown SM, Doom JR, Lechuga-Peña S, Watamura SE, Koppels T. Stress and parenting during the global Covid-19 pandemic. Child Abuse Negl. 2020;110(Pt 2):104699.
- <sup>12</sup> Gilbert AS, Schmidt L, Beck A, Kepper MM, Mazzucca S, Eyler A. Associations of physical activity and sedentary behaviors with child mental well-being during the Covid-19 pandemic. BMC Public Health. 2021 Sept. 28;21(1):1.770.
- <sup>13</sup> Vygotsky LS. A formação social da mente. São Paulo: Martins Fontes; 2007.
- <sup>14</sup> Kharel M, Sakamoto JL, Carandang RR, et al. Impact of Covid-19 pandemic lockdown on movement behaviours of children and adolescents: a systematic review. BMJ Glob Health. 2022;7(1).<sup>15</sup> Park AH, Zhong S, Yang H, Jeong J, Lee C. Impact of Covid-19 on physical activity: A rapid review. J Glob Health. 2022 Apr. 30;12:05003.
- <sup>16</sup> Engzell P, Frey A, Verhagen MD. Learning loss due to school closures during the Covid-19 pandemic. Proc Natl Acad Sci U S A. 2021 Apr. 27;118(17).
- <sup>17</sup> Kuhfeld M, Tarasawa B. The Covid-19 slide: What summer learning loss can tell us about the potential impact of school closures on student academic performance. NWEA, Center for School & Student Progress and the Collaborative; Apr. 2020.
- <sup>18</sup> Maldonado JE, De Witte K. The effect of school closures on standardised student test outcomes. British Educational Research Journal. 2021;48(1)
- <sup>19</sup> Oliveira JMD de, Butini L, Pauletto P, et al. Mental health effects prevalence in children and adolescents during the Covid-19 pandemic: A systematic review. Worldviews on Evidence-Based Nursing. 2022;19(2):130-137.
- <sup>20</sup> Araújo LA de, Veloso CF, Souza M de C, Azevedo JMC de, Tarro G. The potential impact of the COVID-19 pandemic on child growth and development: a systematic review. Jornal De Pediatria. 2020;97(4):369-377.
- <sup>21</sup> Guerrero G. (Fondo de las Naciones Unidas para la Infancia, Oficina Regional para América Latina y el Caribe de Unicef). Midiendo el impacto de la Covid-19 en los niños y niñas menores de seis años en América Latina y el Caribe: Mapeo de encuestas en curso y sistematización de lecciones aprendidas. Washington (DC): Diálogo Interamericano; Informe Enero 2021.
- <sup>22</sup> Lopes JJM. Geografia das Crianças, Geografias das Infâncias: as contribuições da geografia para os estudos das crianças e sua infância. Revista Contexto & Educação. 2008;23(79):65-82.
- <sup>23</sup> Bessa A. Práticas de socialização entre adultos e crianças, e estas entre si, no interior da creche. 2008;19(1):97-114.
- <sup>24</sup> Meloni A, Marin FADG. A cidade e o brincar: análise de espaços públicos de brincar de Assis-SP. GEOUSP Espaço e Tempo (On-line). 2021;25(1).<sup>25</sup> Eales L, Gillespie S, Alstat RA, Ferguson GM, Carlson SM. Children's screen and problematic media use in the United States before and during the Covid-19 pandemic. Child Dev. 2021;92(5):e866-e882
- <sup>26</sup> Dutta K, Mukherjee R, Sen D, Sahu S. Effect of Covid-19 lockdown on sleep behavior and screen exposure time: an observational study among Indian school children. Biological Rhythm Research. Published on-line. Oct. 14, 2020:1-12
- <sup>27</sup> Pombo A, Luz C, Rodrigues LP, Ferreira C, Cordovil R. Correlates of children's physical activity during the Covid-19 confinement in Portugal. Public Health. 2020;189:14-19.<sup>28</sup> Piasetzki CT da R, Boff ET de O, Battisti IDE. Influência da família na formação dos hábitos alimentares e estilos de vida na infância. Rev Cont Saude. 2020;20(41):13-24.<sup>29</sup> Quatrin AN, Cassel PA. Between play and the screen: the repercussions on children's emotional development. RSD. 2020 July 21;9(8).
- <sup>30</sup> Kabali HK, Irigoyen MM, Nunez-Davis R, et al. Exposure and Use of Mobile Media Devices by Young Children. Pediatrics. 2015;136(6):1.044-1.050.<sup>31</sup> Pereira BS, Arrais TS. A influência das tecnologias na infância: vantagens e desvantagens. IV Colóquio Internacional Educação, Cidadania e Exclusão; 9 e 30 de junho de 2015. Universidade Estadual do Rio de Janeiro, Rio de Janeiro. Campina Grande: Realize; 2015.
- <sup>32</sup> Gueller AS. Droga de celular! Reflexões psicanalíticas sobre o uso de eletrônicos. In: Baptista A, & Jerusalinsky J. Intoxicações eletrônicas: o sujeito na era das relações virtuais. Salvador: Ágalma; 2017. p. 67.



Submitted: May 24, 2023 Accepted: October 4, 2023 Published: April 5, 2024

#### **Author contributions**

Marina Steinbach: Methodology, Formal analysis, Writing – original draft, Writing – review & editing.

Pedro Vitali Kammer: Conceptualization, Data curation, Investigation.

Camila Alvarenga da Silva: Conceptualization, Data curation, Investigation.

Kleyslla Souza Santos: Conceptualization, Data curation, Investigation.

Victor André Silva de Lima: Conceptualization, Data curation, Investigation.

Carla Massignan: Conceptualization, Methodology, Project administration, Supervision.

Michele da Silva Bolan: Conceptualization, Methodology, Project administration, Supervision.

All authors approved the final version of the text.

**Conflict of interest:** There is no conflict of interest.

Financing: Does not have financing

### **Corresponding author**

Marina Steinbach Federal University of Santa Catarina (UFSC)

R. Eng. Agronômico Andrei Cristian Ferreira, s/n - Trindade, CEP 88040-900

Florianópolis/SC, Brasil marina.sbach@gmail.com

EditoresEditor: Dr. Eliane Roseli Winkelmann

Editor-in-Chief: Dr. Adriane Cristina Bernat Kolankiewicz

This is an open access article distributed under the terms of the Creative Commons license.

