

## Research Article

# Impact of Covid-19 Pandemic on Quality of Life in Pediatric Population: A Multicentric Study

Paula Rejane dos Santos<sup>1</sup>, Isabelle Sophia Moreira Cardoso<sup>1,2</sup>, Davi Santana Sousa<sup>1,3\*</sup>, and Aida Carla Santana de Melo Costa<sup>1,3</sup>

<sup>1</sup>Tiradentes University, Sergipe, Brazil

<sup>2</sup>Universidad Popular Autonoma del Estado de Puebla, Puebla, Mexico

<sup>3</sup>Institute of Technology and Research, Sergipe, Brazil

**\*Corresponding author**

Davi Santana Sousa, AVENIDA PEDRO CALAZA NS, 23 0 A, GETÚLIO VARGAS, A RACAJU, SERGIPE, 49055-520; Tel: +55 79 9 9950; Email: davi.santana.sousa@hotmail.com

**Submitted:** 13 September 2021

**Accepted:** 18 October 2021

**Published:** 21 October 2021

**ISSN:** 2373-9312

**Copyright**

© 2021 dos Santos PR, et al.

**OPEN ACCESS**

**Keywords**

• Children; Covid-19; Pandemic; Quality of life

**Abstract**

The Covid-19 pandemic has presented challenges since detection, isolation and prevention of mass broadcast become a global health emerging danger. Thus, the authorities adopted restrictive measures, limiting the movement of people, in addition to the internal closure, to prevent the spread of the virus. Children currently face major changes in their lives, from the closure of schools and recreational areas, confinement at home and rules of social distance, which can negatively interfere with their global health. The choice of theme was due to the need to analyze the functional and emotional impact of changes in lifestyle and challenges experienced by children during the Covid-19 pandemic, and how it can influence the quality of life of this population, as well as their family in order to make the associated factors more accessible. The objective of the research was to analyze the impact of the Covid-19 pandemic on the quality of life of the pediatric population. For this, I used the CHQ-PF50 questionnaire in digital format, answered by the parents and/or guardians of the child. This is an observational, cross-sectional and multicenter study, with a quantitative approach, the sample being non-probabilistic and making a total of 119 healthy children, without comorbidities. As for the results obtained, children from all Brazilian regions participated in the study, with an average global health of  $76.47 \pm 22.38$ , prevailing as excellent, very good or good. In motor aspects, there was no significant impact on the limitations of daily activities, as well as pain complaints. However, behavioral aspects reflected no emotional impact from parents or guardians. Therefore, it was observed that quality of life is an important factor.

**INTRODUCTION**

The pandemic caused by Covid-19 has presented frequent challenges from detection, isolation and prevention to combating the virus. Normally, the virus spreads through coughing, sneezing, inhaling droplets, contact with the oral, nasal and ocular mucous membranes arising from infected individuals and, as it is a highly contaminating agent, mass transmission becomes a emerging threat to global health [1-6].

With this, the authorities regularly adopt restrictive measures, limiting the movement of people, in addition to closing establishments, in order to prevent the spread of the virus. Quarantine is called the separation and restriction of movement of people potentially exposed to a contagious disease, reducing the risk of infecting other people, while isolation corresponds to the separation of people who have been diagnosed with a contagious disease from those who are not sick [7].

Therefore, quarantine and social isolation are often an unpleasant experience. The feeling of loss of freedom, separation from loved ones and uncertainty about the state of the disease can, in some situations, have dramatic effects. Due to the Covid-19 pandemic, families face changes in everyday habits. Keeping children involved and safe at home represented a significant challenge for many parents and guardians, especially considering the psychological impact of quarantine on this audience [8,9].

Although controlling the spread of the coronavirus is the priority in the fight against the Covid-19 pandemic, the long-term impacts on children's health are inevitable, such as the suspension of in-person educational activities and the adoption of distance education that were conducted in many countries, in order to achieve control of the distance between them. There is broad consensus that the Covid-19 pandemic affects not only physical health, but also the mental health and well-being of children and adolescents [10-12].

Significant changes in children's routine during quarantine can interfere with their sense of predictability and safety, both of which are essential factors for healthy development, such that these changes expose children to a greater risk of negative health consequences resulting from lower levels of physical activity, irregular sleep patterns, longer screen time, and unruly eating habits [13,14].

Behavioral changes are common among children in quarantine, as they do not accept or even do not understand the importance of social distancing and long for the end of the pandemic, feeling isolated due to the prolonged closure of schools, parks and other public environments that allow contact with other children. All these adverse conditions can predispose children to develop behavioral disorders that can affect their development and their relationship with people in the environment in which they live [15].

Social isolation, loneliness, physical inactivity or a sedentary lifestyle, although they are related, are individual factors. Due to the current social isolation scenario of the Covid-19 pandemic, in which the interaction between children is restricted, such factors can interfere with the overall health status, reflecting, among others, musculoskeletal complaints. The pain threshold is affected as the level of inflammatory markers and pain modulators increases [16].

The suspension of classes leads to significant changes in the children's routine and, therefore, can lead to changes in sleep, physical activity and influence sedentary behavior. The school is an important social space in which children have access to educational activities, spend most of the day, being the time when they are most active. From this perspective, on-site school days can positively influence physical aspects, while active commuting to school, recreational activities and Physical Education classes are included, added to more regulated sleep and limited screen time [17-19].

Despite being a necessary measure, it is expected that the social isolation resulting from the Covid-19 pandemic will generate negative psychological effects, which can be extended to physical and mental consequences in different age groups and, in particular, in children and adolescents who do not attend the school. As a result, it is likely that children spend more time in sedentary activities in online games, watching TV and even in remote classes and, as a result, it leads to a reduction in physical activity levels [20].

Although the signs and symptoms of coronavirus infection may not manifest as deleterious in children as in adults, its impact on the quality of life and mental health of the pediatric population is evidenced, although little debated. Children and adolescents are currently facing major changes in their lives, including closing schools and leisure areas, confinement at home and rules of social distancing, which can negatively interfere with their overall health [21].

Quality of Life, according to the World Health Organization (1995), is defined as "the individual's perception of their insertion in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and worries." However, dealing with the current situation and complying with the restrictions imposed can be especially difficult for children, as certain circumstances can be seen as not consistent with their developmental tasks [22].

The research in question is justified by the need to analyze the functional and emotional impact of changes in lifestyle habits and challenges experienced by children during the Covid-19 pandemic, and how this can influence the quality of life of this population, as well as their family members, contributing to the development of knowledge on the subject with scientific and social relevance, since there are few publications on this subject aimed at the pediatric age group.

The general objective of this study was to analyze the impact of the Covid-19 pandemic on the quality of life of the pediatric population. The specific objectives were: 1) To determine the perception of caregivers regarding the child's overall health; 2) Check the children's behavioral changes and the impact on their

families; and 3) Relate the impact of the pandemic on the pain complaint reported by the children in the study.

## METHODS

### Research Outline

This is an observational, cross-sectional, multicentric study with a quantitative approach, carried out with healthy children, without comorbidities, based on the investigation carried out through a specific electronic form, answered by the legal guardians of the child, in order to assess the impact of the Covid-19 pandemic on their physical and emotional functions, as well as their quality of life.

### Research Location and Characterization

The survey was conducted electronically by recruiting participants through social media dissemination and, later, data collection was performed using an electronic form, prepared by Google Forms.

### Casuistic

The sample was non-probabilistic, performed for convenience, that is, on demand, according to the availability of legal guardians for the child to answer the proposed questionnaire. The children's quality of life was assessed through a questionnaire prepared on Google Forms, available on social networks. To participate in the study, it was necessary to meet the following inclusion criteria: children aged between 5 and 12 years, without comorbidities, living throughout the Brazilian territory whose guardians were able to coherently answer the requested questions. The age group established for this study was determined as a way to adapt to the particularities of the assessment instrument selected for the research. A total of 127 parents and/or guardians answered the questionnaire, however, eight participants were excluded from the study because they had some associated pathology, thus, 119 children effectively participated in the study.

### Ethical Aspects

The project was submitted for analysis by the Research Ethics Committee (CEP), of the Tiradentes University (UNIT), and in its development the guidelines and other ethical norms and recommendations for conducting research in Brazil were observed, following the norms expressed in the Resolution of December 12, 2012 and complementary resolutions of the National Health Council. The collected material was for the exclusive use of the researcher, being used for the sole purpose of providing elements for the realization of this research project. The Informed Consent Form (FICF), was read by the child's legal guardian, with the option to withdraw at any time from the research, if desired.

### Research Instruments and Procedures

The assessment instrument selected for the execution of this research was the Child Health Questionnaire - Parent Form 50 (CHQ-PF50), whose translation is the Child Health Questionnaire - Parent Form 50. Created in 1999, by Landgraf, Abetz and Ware (Healthact - Boston), is a generic instrument for assessing the quality of life of pediatrics, translated, culturally adapted and validated for the Portuguese language by Machado et al. years,

being used to assess physical, emotional and social well-being from the perspective of parents or guardians.

This questionnaire consists of 50 questions subdivided into 14 competencies that comprise global health, physical function, limitation of daily activities due to emotional and behavioral aspects, limitation of daily activities due to physical aspects, pain, behavior, well-being, self-esteem, perception of health, health change, emotional impact on parents, impact on parents' time, family activity and family cohesion. The evaluation of each item uses the method of added points, through a Likert scale. The final score on each scale ranges from 0 to 100.

Of these domains, ten are aggregated into two indices, the physical and the psychosocial score, with scores ranging from 0 to 50 for each score. The summary of the physical score is mainly represented by the physical function, limitation due to physical function, general health and body pain scales. The psychosocial score summary is mainly represented by the scales self-esteem, well-being, global assessment of behavior, limitation due to emotional aspects and behavior. The highest scores indicate better health status, degree of satisfaction and well-being.

To calculate the score, a minimum of 50% of items filled in each scale is required. The questionnaire is self-administered to parents or guardians, who are instructed to base their information on the child's experiences in the last four weeks, except for the scale on global health status, which refers to the last 12 months. The CHQ is considered the gold standard in the assessment of pediatric quality of life [23].

Data collection took place online, through the formulation of a Google Forms Questionnaire, containing all items from the CHQ-PF50, in addition to a basic identification questionnaire, covering demographic aspects such as age, gender, presence or absence of pathologies and locality. Only those responsible for the children answered this questionnaire, with an average time of 10 to 15 minutes to be completely filled out, and the responses sent were their responsibility.

## Statistical Analysis

Initially, the collected data were transported to a data sheet in the Excel for Windows 10 program, in which descriptive and analytical statistics were performed, with measurements of position (average), dispersion (standard deviation), absolute frequency (N) and relative frequency (%). Subsequently, analyzes were performed using the GraphPad Prisma 6 program. Spearman's test was used to correlate the variables. The level of significance was set at  $p < 0.05$ .

## RESULTS

A total of 119 healthy children were evaluated, 58.8% female and 41.2% male, aged between 5 and 12 years, average age of 7.7 years, who lived in regions of Brazil, the largest proportion of location was observed in the Northeast region, with 72.8% of participants (Table 1).

Based on the results obtained, it can be seen that in the domains in which the child's physical and emotional aspects are evaluated in the perception of the guardians, a total gross score of 76.47 in global health was obtained, with the physical function

domain being the least affected, with a mean of 90.85, while the domain of greatest commitment was the emotional impact on parents, with a lower mean of 51.82 (Table 2).

When analyzing the results obtained according to the global health classification, it was observed that, according to the perception of parents and/or guardians, most children have excellent, very good or good global health. It is possible to observe that none of the children had their health classified as poor (Figure 1).

With regard to emotional and behavioral aspects, it was observed that only in three domains (self-esteem, perception of health and family activity) the percentage of excellent was higher, while in the other domains (behavior, well-being, family cohesion) obtained the classification between very good and/or good, and only the emotional impact on the parents prevailing between very good and fair (Figure 2).

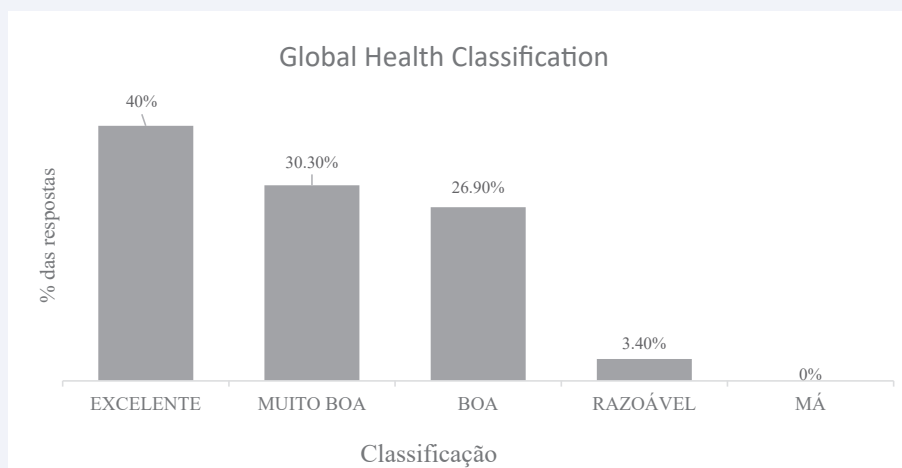
Regarding the motor aspects, it was observed that the evaluated children obtained satisfactory results in the physical

**Table 1:** General data on children. Values presented as mean  $\pm$  standard deviation, absolute (n) and relative (%) frequency.

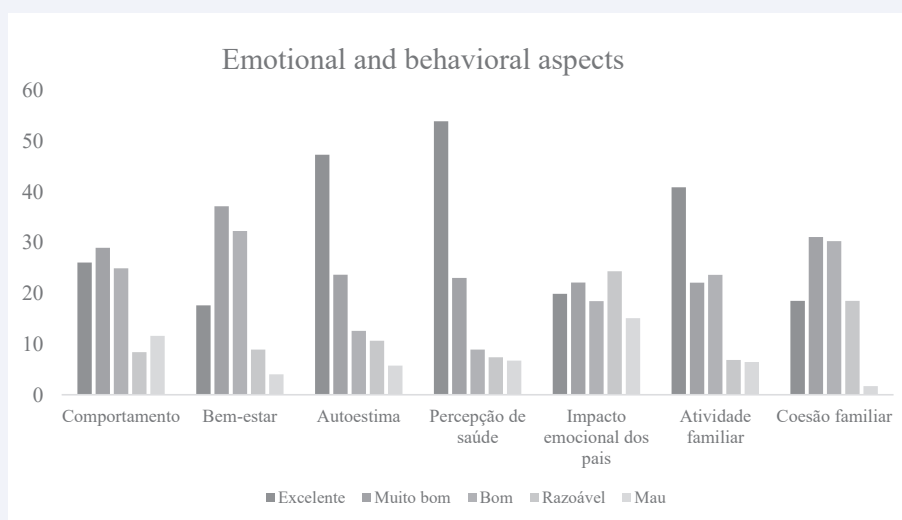
General data	Média $\pm$ DP ou n (%)
<b>Sex</b>	
Female	70 (58,8%)
Male	49 (41,2%)
Age years)	7,7 $\pm$ 2,42
<b>Locality (by region)</b>	
South	6 (5%)
Southeast	14 (11,8%)
North	7 (5,9%)
North East	86 (72,8%)
Midwest	5 (4,2%)

**Table 2:** Data from 14 domains. Values presented as mean  $\pm$  standard deviation.

Domains	Média $\pm$ DP
Global health	76,47 $\pm$ 22,38
Physical function	90,85 $\pm$ 16,42
AVD's limitation (emotional and behavioral aspects)	71,45 $\pm$ 32,69
AVD's limitation (physical aspects)	85,08 $\pm$ 24,21
Pain	87,05 $\pm$ 17,23
Behavior	62,35 $\pm$ 20,05
Welfare	63,86 $\pm$ 19,67
Self esteem	74,05 $\pm$ 21,62
Health perception	76,80 $\pm$ 13,50
Health change	55,67 $\pm$ 24,66
Emotional impact on parents	51,82 $\pm$ 26,40
Impact on parents' time	72,85 $\pm$ 24,48
Family activity	71,04 $\pm$ 24,16
Family cohesion	61,55 $\pm$ 26,19



**Figure 1** Classification of children's global health from the perspective of caregivers. Values presented in percentage (%).



**Figure 2** Classification of children's emotional and behavioral aspects from the perspective of guardians. Values presented in percentage (%).

function, limitation of daily activities and pain domains, with the majority without motor impairment (Figure 3).

The correlation between the domains of body pain and physical function in children was positive and weak ( $r = 0.342$ ), with statistical significance ( $p=0.0001$ ), and it was observed that the lower the body pain, the lower the functional limitation (Figure 4).

The correlation between the domains of children's behavior and family activity was positive and moderate ( $r = 0.510$ ), with statistical significance ( $p=0.0001$ ), and it was observed that the better the behavior of the children, the more harmonious the family activity (Figure 5).

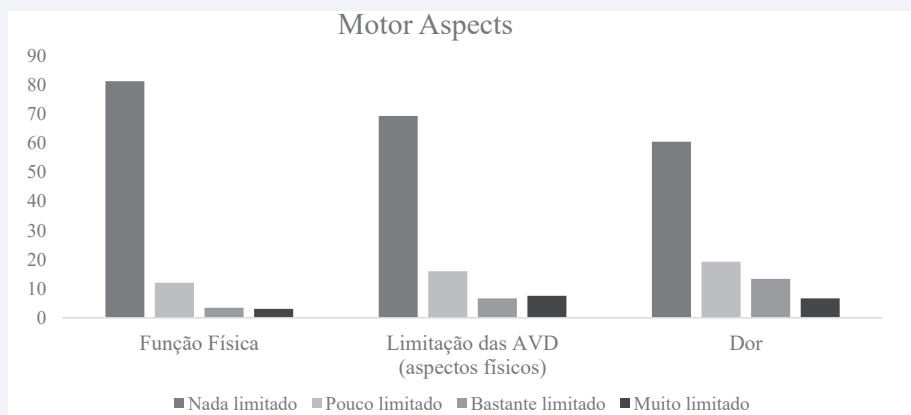
## DISCUSSION

Albokhari et al. [24], used the Child Health Questionnaire-Parent Form 50 (CHQ-PF50), to analyze the quality of life in healthy Saudi children, and it was observed that most domains had relatively high scores ( $>80$ ), indicating a health status

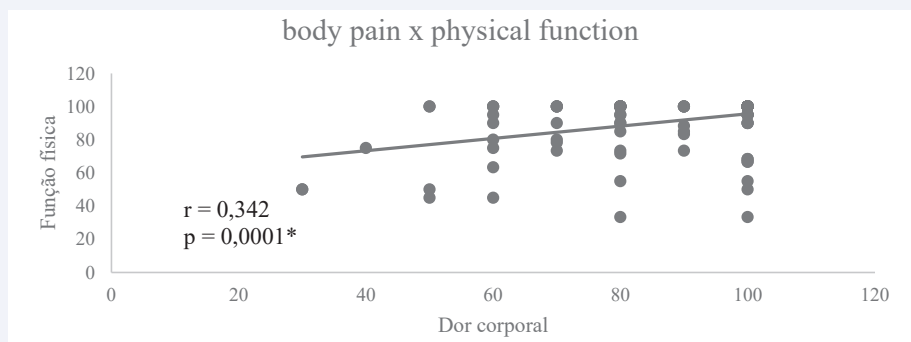
acceptable in the studied population, only observing lower scores for behavior, well-being and general health perception. In the present study, it was possible to observe that the children's behavior and well-being resulted in lower scores, which is in agreement with the aforementioned study.

There are few studies that investigated the quality of life in healthy children, as most of them showed the impact of chronic diseases or deficiencies on the quality of life. For this reason, in this study, children who did not present pathologies were evaluated in order to generate more information regarding the quality of life of this population during the period of the Covid-19 pandemic.

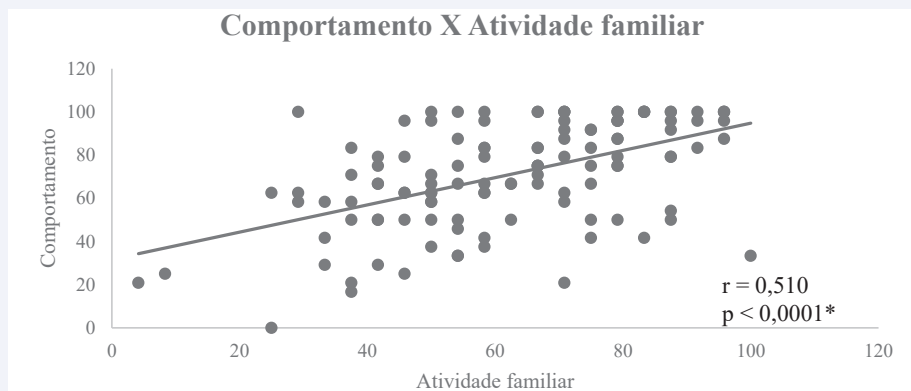
Also in the same study by Albokhari et al.[24], significant gender differences were identified in 6 of 15 domains (behavior, well-being, general health perceptions, parental emotional impact, family activities, and family cohesion), indicating lower scores for boys. Importantly, 5 of the 6 domains in question are related to psychological and behavioral well-being with a parallel



**Figure 3** Classification of motor aspects of children from the perspective of guardians. Values presented in percentage (%).



**Figure 4** Correlation between body pain and physical function in the assessed children. Spearman's r correlation test, considering \* p < 0.05, whose r values: strong (0.7-1), moderate (0.4-0.69) and weak (0.0-0.3) correlation.



**Figure 5** Correlation between behavior and family activity of the assessed children. Spearman's r correlation test, considering \* p < 0.05, whose r values: strong (0.7-1), moderate (0.4-0.69) and weak (0.0-0.3) correlation.

impact on the well-being of parents and family. The data obtained through this study are similar to the current research with regard to the lowest scores in 4 domains of those described above (behavior, well-being, emotional impact of parents and family cohesion), in the general population, not having comparisons between genders. Importantly, 5 of the 6 domains in question are related to psychological and behavioral well-being with a parallel impact on the well-being of parents and family.

Romero et. al. [25], demonstrated that confinement due to Covid-19 influenced children's emotional and behavioral patterns, but stated that, even in adverse situations, positive results and personal growth could also be observed. The same study revealed that isolation caused an emotional impact on parents who, through direct and/or indirect effects, affected the relationships between parents and children, leading to relevant changes in child behavior.



According to research carried out by Bronner et al. [26], and Ebrahim et al. [27], the health-related quality of life reported by parents of children in the short term after a critical illness was lower compared to healthy children. In another study developed by Verbruggen et al. [27], which examined the quality of life of children after 6 months of admission to the Pediatric Intensive Care Unit (PICU), it was possible to observe that most domains became impaired in PICU survivors, as reported by parents. However, on some scales, not referring to motor aspects, PICU survivors had scores comparable or even better than healthy children, one of them being family cohesion, indicating that relationships between family members do not seem to be impaired.

Therefore, Landon et al. [27], clarify that, although a child's critical illness can affect the emotional state of family members, it does not seem to impact family bonds, and may be the result of greater awareness of the value of these relationships in difficult times. However, these findings do not fully agree with the present study in healthy children, as the behavior affected family relationships with regard to family cohesion, as well as the emotional impact of parents.

Additionally, Schor [27], highlights the importance of children's well-being, as it is strictly linked to their parents' physical, psychological and social health. Complementarily, Wang et al. [28], showed how the presence of parents can reduce the child's stress levels during the quarantine of the Covid-19 pandemic.

According to Faro et al. [26], the Covid-19 pandemic is an important physical and psychological stress factor in individuals of all ages. Confirming this information, Cellini et al.[5], stated that, during this pandemic moment, children and adolescents were more likely to manifest externalized symptoms, such as inattention and irritability, and internalized symptoms, such as anxiety, depression or hyperactivity.

Dunton; Wang [28], analyzed the practice of physical activity during the Covid-19 pandemic, indicating that North American children performed less physical activity and were more involved in sedentary behavior during the initial period of the outbreak and spread of the virus compared to moments previous to the pandemic, mainly in children of second infancy. The authors bring that this change is due to the closing of schools and parks and the cancellation of team sports as measures to curb the spread of the virus. Thus, children who performed outdoor games and/or physical activity reduced or replaced these activities with sedentary behavior.

However, the results of the current study show that, even with the reduction in physical activities due to the Covid-19 pandemic, most of the children evaluated did not show impairment in physical function and limitations in daily activities related to physical aspects, indicating that even the At present, sedentary behavior has not become a limiting factor for these children.

Lesser; Nienhuis [25], reported that the behavior of physical activity was changed during the Covid-19 pandemic, since 40.5% of the investigated sample became more inactive. In another study conducted by Moore et al [18], who assessed the impact of the restrictions that the pandemic imposed on play behaviors,

most Canadian children investigated did not meet the guidelines for physical activity (76.2%) and screen time (83.5%), while, on the contrary, met the recommendations for sleep time (69.9%) and, therefore, since negative exposure to these behaviors is associated with increased body weight, such factors can negatively influence social and motor development, in addition to reducing children's cardiorespiratory fitness.

With regard to pain, a study by Papetti et al. [20], investigated how social isolation resulting from the pandemic impacted the headache complaints reported by children. In contrast, such results brought reports of considerable improvement in headache intensity and frequency compared to the two months prior to the onset of the pandemic. These findings were strongly correlated with the reduction of anxiety and the exhaustive routine experienced during face-to-face teaching activities.

In the current study, the influence of physical function on body pain was evaluated, and it was possible to analyze that the results showed a positive correlation, although weak, and it can be said that the limitation of physical functions was not based on pain in the majority of children in that study. .

## CONCLUSION AND FINAL CONSIDERATIONS

With this research, it is evident that quality of life is important for the assessment of general health status related to emotional, behavioral and motor aspects of children during the Covid-19 pandemic period. The present study suggests that lower scores on the emotional impact of parents or guardians seem to be associated with lower scores on the behavior and well-being they report to children. It was observed that most children had excellent, very good or good global health ratings, indicating that, even with the pandemic and the negative factors, it was possible to verify that the quality of life of healthy children remained intact. However, parents and guardians have a high emotional burden, in addition to having more time to dedicate to the children's physical or behavioral needs.

## REFERENCES

1. ADIBELLI D, SÜMEN A. The effect of the coronavirus (COVID-19) pandemic on health-related quality of life in children. *Child Youth Serv Rev.* 2020; 119: 105595.
2. Albokhari SM, Garout WA, Al-ghamdi MM, Garout AA, Noorsaeed SMW, Daali SM. Assessing health related quality of life of school aged Saudi children in western province using the validated Arabic version of child health questionnaire-parent form-50. *Saudi Med J.* 2019; 40: 1134-1143.
3. Bronner MB, Knoester H, Bos AP, Grootenhuis MA. Quality of life in children 3 and 9 months after discharge from a paediatric intensive care unit: A prospective cohort study. *Health and Quality of Life Outcomes.* 2008; 6: 21.
4. Brooks SK. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020; 395: 912-920.
5. Cellini N. Changes in sleep pattern, sense of time and digital media use during COVID-19 lockdown in Italy. *J Sleep Res.* 2020; 29: 13074.
6. Cusinato M, Lannattone S, Spoto A, Poli M, Moretti C, Gatta M, et al. Stress, Resilience, and Well-Being in Italian Children and Their Parents during the COVID-19 Pandemic. *Int J Environ Res Public Health.* 2020; 17: 8297.

7. Dunton GF, Wang SD. Early effects of the COVID-19 pandemic on physical activity and sedentary behavior in children living in the U. S. BMC Public Health. 2020.
8. Ebrahim S, Singh S, Hutchison JS, Kulkarni AS, Sananes R, Bowman KW, et al. Adaptive behavior, functional outcomes, and quality of life outcomes of children requiring urgent ICU admission. Pediatric Critical Care Medicine. 2013; 14: 10-18.
9. Faro A. COVID-19 e saúde mental: a emergência do cuidado. Estud Psicol. 2020.
10. Fiorillo A, Gorwood P. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. Eur Psychiatry. 2020; 63: 32.
11. Florêncio JPG, Paiano R, Costa AS. Isolamento social: consequências físicas e mentais da inatividade física em crianças e adolescentes. Rev Bras Ativ Fis Saúde. 2020; 25: 115.
12. Giudicelli BB, et al. Sono, comportamento sedentário e atividade física: mudanças na rotina de crianças durante a COVID-19. Rev Bras Ativ Fis Saúde. 2020; 25: e0143.
13. Hämmig O. Health risks associated with social isolation in general and in young, middle and old age. PLoS One. 2019; 7: 219663.
14. Joseph SJ, Shoib S, Thejaswi SG, Bhandari SS. Psychological concerns and musculoskeletal pain amidst the COVID-19 lockdown. Open J Psychiatry Allied Sci. 2020; 11: 137-139.
15. Karimi M, Brazier J. Health, Health-Related Quality of Life, and Quality of Life: What is the Difference? Pharmacoeconomics. 2016; 34: 645-649.
16. Landon C. Impact of pediatric critical illness and injury on families: A systematic literature review. Pediatrics. 2006; 118: S203-S218.
17. Lesser IA, Nienhuis CP. The Impact of COVID-19 on Physical Activity Behavior and Well-Being of Canadians. Int J Environ Res Public Health. 2020; 17: 3899.
18. Moore SA. Impact of the COVID-19 virus outbreak on movement and play behaviours of Canadian children and youth: a national survey. Int J Behav Nutr Phys Act. 2020; 17: 85.
19. Panda PK. Psychological and Behavioral Impact of Lockdown and Quarantine Measures for COVID-19 Pandemic on Children, Adolescents and Caregivers: A Systematic Review and Meta-Analysis. J Trop Pediatr. 2021; 67: 122.
20. Papetti L. I stay at home with headache. A survey to investigate how the lockdown for COVID-19 impacted on headache in Italian children. Cephalalgia. 2020; 40: 1459-1473.
21. Ravens-Sieberer U. Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany. Eur Child Adolesc Psychiatry. 2021; 25: 1-11.
22. Romero E. Testing the Effects of COVID-19 Confinement in Spanish Children: The Role of Parents' Distress, Emotional Problems and Specific Parenting. Int J Environ Res Public Health. 2020; 17: 6975.
23. Schor EL. Family pediatrics: report of the Task Force on the Family. Pediatrics. 2003; 111: 1541-1571.
24. Silva LCB. Sleep, sedentary behavior and physical activity: changes on children's routine during the COVID-19. Rev Bras Ativ Fis Saúde. 2020; 25: 143.
25. Smith TO. Association between musculoskeletal pain with social isolation and loneliness: analysis of the English Longitudinal Study of Ageing. Br J Pain. 2019; 13: 82-90.
26. Umakanthan S. Origin, transmission, diagnosis and management of coronavirus disease 2019 (COVID-19). Postgrad Med J. 2020; 96: 753-758.
27. Verbruggen S. Health-related quality of life of children and their parents 6 months after children's critical illness. Qual Life Res. 2020; 29: 179-189.
28. Wang G. Mitigate the effects of home confinement on children during the COVID-19 outbreak. The Lancet. 2020; 395: 945-947.

**Cite this article**

dos Santos PR, Moreira Cardoso IS, Sousa DS, de Melo Costa ACS. Impact of Covid-19 Pandemic on Quality of Life in Pediatric Population: A Multicentric Study. *Ann Pediatr Child Health* 2021; 9(7): 1252.