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REVIEW ARTICLE

The Impacts of the Covid-19 Pandemic on Child and Adolescent Health: A Literature Review

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Keywords:
Child Behavior, Sedentary Behavior, Domestic Violence, COVID-19, Screen Time.

Abstract

Objective: To describe the main impacts of sedentarism, increased screen time, and child abuse on the psychic and cognitive development of the pediatric population enabled by changes in habits occurred during the Covid-19 pandemic. **Method:** This narrative literature review included publications from 2018 to 2021 available in the U.S National Library of Medicine (PubMed) and Scientific Electronic Library Online (SciELO) using keywords "Child Behavior"; "Screen time"; "Covid-19"; "Sedentary behavior" and "Domestic Violence". **Results:** Increased use of electronic devices, increased rates of child abuse, and increased sedentarism were observed among children during the Covid-19 pandemic. **Conclusion:** Social isolation caused by the Covid-19 pandemic resulted in the aggravation of existing issues in the pediatric population, such as increased screen time, sedentarism, and abuse.

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INTRODUCTION

SARS-CoV-2, the virus responsible for Covid-19, has caused mostly mild disease in children and adolescents, with severe cases being rare. By March 2021, the death rate of Covid-19 in this population was 0.62% in Brazil[1]. On the other hand, the increase in daily screen time – resulting mainly from changes in the delivery of education and leisure during the pandemic – and the decrease in physical activity in the period may have directly influenced the cognitive development of children[2]. In this context, recent studies have described structural damage to brain mass resulting from excessive use of digital devices by children[3]. Furthermore, a relationship has been established between use of screens and increases in child anxiety, depression, and obesity.

Social isolation has been universally recommended to reduce the spread of Covid-19. The Brazilian government implemented measures to close public venues, sports centers, clubs, and schools, resulting in a significant increase in sedentary lifestyles among children[5]. Children and adolescents were forced to spend more time in sedentary activities and attend classes remotely[2].

Evidence shows that crises and natural disasters often increase the number of cases of child abuse. In an Ebola outbreak in Liberia, an increase was seen in cases of verbal and physical abuse perpetrated by parents against children and adolescents [6]. In October 2020, the UNICEF (United Nations Children's Fund) warned about the risks of increasing domestic violence against children and advised healthcare workers to engage in prevention and collect data about the situation [7]. In this context, it is worth studying the effects of the Covid-19 pandemic on child abuse alongside the immediate impacts of social isolation on child development to identify possible harms. This study describes the main impacts of sedentarism, increased screen time, and child abuse on the psychic and cognitive development of children and adolescents introduced by the changes in habits observed during the Covid-19 pandemic.

METHOD

This narrative literature review includes articles selected manually from journals published by institutions of national and international renown such as the World Health Organization, the Brazilian Society of Pediatrics, and articles searched from the U.S National Library of Medicine (PubMed) and Scientific Electronic Library Online (SciELO) databases. The following terms present in the list of Health Sciences Descriptors (DeCS) were used in the searches: "Child Behavior"; "Screen time"; "Covid-19"; "Sedentary behavior" and "Domestic Violence". Thirty publications were selected, among them randomized studies, systematic reviews, prospective studies, and other publications from the aforementioned institutions, published between the years 2018 and 2021.

The search included studies published in English, Portuguese, or Spanish that were relevant to our review. Articles in languages other than the ones mentioned above or that did not address the topic in question were excluded. All authors were involved in the review and inclusion of articles.

RESULTS AND DISCUSSION

Social isolation produces repercussions in several areas of collective and individual life. In the last three years, we have seen a sharp increase in isolation on account of the measures taken to curb the spread of SARS-CoV-2 [8]. Measuring the effects of social isolation on children and adolescents is a complex task, since individuals in this age range are going through a critical period in global development, especially in the first years of life [2,9].

Children and adolescents who spend much of their time using digital devices often develop a lack of focus and impaired academic performance, a situation intensified, in part, by the Covid-19 pandemic (3,10). Excessive use of digital devices has been associated with decreased verbal intelligence and smaller increases in the gray-to-white matter ratio in children over time[11]. Lifestyles with more screen time for leisure were found to cause structural repercussions on the brain, resulting in less gray matter in six different brain regions[3].

Therefore, the clinical significance of these changes and their exact correlation with the use of electronic devices have been the subject of a series of studies. Such changes may cause functional lags in visual processes, attention span, verbal memory, and even in the individual's reasoning speed (15,16). Therefore, it is reasonable to speculate that the consequences of these alterations may compromise the cognitive skills and the professional performance of children and adolescents in the future phases of their lives. Further studies must be organized to evaluate these potential associations.

Regarding the psychological impacts, the process of social isolation, the ensuing physical inactivity, and the effects of excessive screen time may contribute to psychiatric disorders such as anxiety, depression, and a series of others, especially in individuals with an underlying mental disorder [4,12,13,14]. The uncertainties generated by the context of the pandemic – especially the abruptness with which it installed – may produce feelings of anger, irritability, and boredom in children and adolescents[14].

Assessments performed with the verbal comprehension subscale of the Wechsler Intelligence Scale for Children (WISC), which is used to estimate working memory, processing speed, and verbal and perceptual reasoning, showed that individuals with normal social interactions had higher scores at eight years of age compared to children in isolation [15,16]. Isolation during childhood, especially in younger children, impairs the learning of language skills such as speaking, reading, and writing, and compromises an individual's academic performance and socialization skills[16].

Ingestion of unhealthy foods increased significantly during the pandemic [17,18]. The resulting impact on matters such

as overweight and obesity is also an important concern [5,19]. An American study showed that the restrictions imposed by the Covid-19 pandemic have caused many children and adolescents not to meet the recommended levels of physical activity [20,21]. According to parents, there has been a noticeable increase in sedentary behavior in children since the beginning of the pandemic. The potential for such changes to become permanent and consequently impact the future health status of children and adolescents has been considered[20]. Physical inactivity and stress, both intensified by the pandemic, are factors that cause significant deterioration of the psychosocial wellbeing of children and adolescents and impaired mental health [20,22]. The possible metabolic and psychological repercussions resulting from excess body weight and sedentary lifestyles must be considered [23,24].

It is indisputable that the effects of the Covid-19 pandemic have been catastrophic on social, economic, and political levels. One study found that all forms of child abuse occur more frequently during vacations, holidays, and natural disasters – circumstances in which children are forced to spend more time with their families. Therefore, social distancing due to the Covid-19 pandemic has been associated with increases in child abuse [25,26].

According to the Ministry of Women, Family and Human Rights, 81% of cases of child abuse occurred in the first half of 2021 in Brazil took place within the family environment and were perpetrated by parents and caregivers[26]. Children and adolescents living with their abusers were more exposed to cruelty during the social isolation imposed to contain the pandemic [27,28,29,30]. Many cases of abuse against children and adolescents are identified and reported by school staff, a possibility no longer available as schools were closed during the pandemic[6]. Healthcare workers, especially pediatricians, must be aware of this risk and consider all the negative impacts of this process on the physical and mental health of children and adolescents.

CONCLUSION

We concluded that social isolation measures introduced during the Covid-19 pandemic have led to a substantial increase in the number of cases of child abuse and caused children and adolescents to significantly increase screen time and adopt sedentary lifestyles. These findings have been associated with various deleterious impacts on physical, psychological, and social parameters. Significant cognitive impairment has been evidenced, especially with regard to reasoning, working memory, information processing, language skills, and socialization. Further studies are needed to investigate the long-term effects of the pandemic.

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