

The Impact of Covid -19 on Physical and Mental Health of Children: A Descriptive Study

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Abstract

Background and Aim: The World Health Organization (WHO) acknowledged coronavirus epidemic as a pandemic and declared the outbreak as a public health emergency of international concern. Emerging research has suggested that these various restrictions, as well as the fear of the virus itself, may have caused children to experience negative mental health consequences. Due to increased amounts of time spent at home the parents need to be aware about the changes in the mental and physical health of the children. This study, thus aimed to survey the effects of the COVID-19 pandemic lockdown on physical and mental health of school-going children.

Material and Methods: A cross sectional survey was designed to analyse the impact of COVID-19 on the physical and mental health of children. The data is collected with the use of online survey platform. A semi structured questionnaire was developed with several open and close ended questions to examine the effect of lockdown on the mental and physical health of the children from parent-reported changes. Any mental health issues and emotional problems newly emerged or aggravated during lockdown were also enlisted. Another objective was to determine the level of awareness amongst parents about the importance of PA for the child.

Results: A total of 200 children were included in the study. When the comparison was done in time from before and after lockdown, it was found that the hours spent on mobile were increased from 2 hours to 5 hours. There was significant decrease in the time spend for physical activity. A total of 65% of the respondents reported that there was change in the behaviour of the children. Around 58% of the children had shown the physical changes like eyestrain, fatigue, neck pain, head ache, lower back pain and major problem with increase in weight of children.

Conclusion: More research is needed to improve our understanding of the long-term impacts of the COVID-19 pandemic on children's mental health, especially with regards to the identification of protective factors found in children who may have been less affected by the pandemic.

Key Words: COVID-19, Mental health, Pandemic, World Health Organization.

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Introduction

The novel coronavirus, later designated as COVID-19, is an infectious disease that can spread among humans. It emerged initially in the city of Wuhan in China in late December 2019, when cases of pneumonia of unknown etiology were reported. The World Health Organization (WHO) acknowledged this coronavirus epidemic as a pandemic and declared the outbreak as a public health emergency of international concern. Most regions around the world are affected severely, including the United States, Brazil, India, Russia, and Europe, which have seen an increasing number of cases and deaths than the rest of the world.^{1,2}

Subsequently, many countries imposed national lockdowns, closing schools and workplaces, leaving people to learn virtually, enforcing social distancing measures, and implementing restrictive measures that prevented individuals from going to public places or from meeting people from other households.³ Emerging research has suggested that these various restrictions, as well as the fear of the virus itself, may have caused children to experience negative mental health consequences. In non-pandemic contexts, prevalence studies have shown that between 14 and 25% of children experience psychological distress.^{3,4}

The mental health of millions of children worldwide has been put at risk, with at least one in seven forced to remain at home under nationwide public health orders – or recommendations – during the COVID-19 pandemic. More than 330 million youngsters have been stuck at home, till March 2021, for at least nine months, since the virus spread uncontrollably this time last year.^{5,6}

It has become difficult for parents to calm their children's anxieties because of the uncertainty and stress in their own lives. The occupational or emotional challenges parents face is interfering with their usual ability to address their children's needs and worries. It is not unusual for children to experience negative emotions such as fear, disappointment, sadness, anxiety, anger, loss etc. But it is the prolonged, restrictive, and widespread nature of the COVID-19 pandemic that has exacerbated the situation. Increased screen time, strained family relations or sedentary lifestyle at home pose additional challenges.^{3,7}

Due to increased amounts of time spent at home the parents need to be aware about the changes in the mental and physical health of the children. As the primary caregiver they will have a positive impact on the young minds. This study, thus aimed to survey the effects of the COVID-19 pandemic lockdown on physical and mental health of school-going children.

Materials and Methods

A cross sectional survey was designed to analyse the impact of COVID-19 on the physical and mental health of children. The data is collected with the use of online survey platform. Potential respondents were invited through social media platforms and after obtaining informed e-consent were directed to fill in a google-form. Participation in the study was voluntary and anonymous. Parents/legal guardians of children of the age group 5-12 years of either gender; able to speak and read English; and currently staying with their child were included.

Exclusion criteria was set as (a) refusal to participate in the study, (b) child with any congenital or acquired physical health problem or mental illness, or (c) parents themselves had any psychiatric or cognitive issues based on self-report. A non-randomized convenient sampling method was used to recruit the target population living in India. Sample size was not calculated before conducting the study, but maximum participation was desirable and anticipated owing to the current social relevance of this topic.

A semi structured questionnaire was developed with several open and close ended questions to examine the effect of lockdown on the mental and physical health of the children from parent-reported changes. PA characteristics were assessed using variables like the child's current level of PA; location of PA; and, the quantity and pattern of sleep; and use of digital devices. The rates of use of remote and streaming services for PA were also identified.

Any mental health issues and emotional problems newly emerged or aggravated during lockdown were also enlisted. Another objective was to determine the level of awareness amongst parents about the importance of PA for the child. From pre COVID-19 and during lock down periods

parents reported observable changes in physical and emotional behaviour, which were then analysed.

Results

A total of 200 children were included in the study. The mean age of the included participants was 8.50 with the standard deviation of 3.22. The result of study showed there was significant increase in the number of hours spent on digital appliances. When the comparison was done in time from before and after lockdown, it was found that the hours spent on mobile were increased from 2 hours to 5 hours. The idly seating time increased from 1 to 2 hours to 5 - 6 hours and the sleeping time was also found to be increased from 7 to 8 hours to 10 hours nearly. There was significant decrease in the time spend for physical activity. It decreased from 3 hours to 1 hour daily. It was observed that 63% of the children do not participate in any online physical activity training.

It was observed that 79% of the involved children were engage in excessive amount of spending screen time. A total of 65% of the respondents reported that there was change in the behaviour of the children. The major changes in the behaviour of the children were laziness, irritation, impatience, excessive anger, anxiety, frustration, decreased attention span, hyperactivity and agitation.

There were physical changes noted in the children. Around 58% of the children had shown the physical changes like eyestrain, fatigue, neck pain, head ache, lower back pain and major problem with increase in weight of children. About 68% of the children were found with affected mental health.

By participating in this survey, the parents are now more observant and are sensitized about the increased amount of screen time by their children, be it online education or playing games or social media. While unanimously appreciating the need for physical activity for their children, some parents expressed the need for more information and guidance in this regard.

Table 1: Mean Age of the Study Participants

Variable	Mean	Standard Deviation
Age Group (Years)	8.50	3.22

Table 2: Comparison of Various Parameters before and after Lockdown

Variable	Before Lockdown	After Lockdown
Hours spent on mobile	2 Hours	5 Hours
Seating Time	1 to 2 Hours	5 to 6 Hours
Physical Activity	3 Hours	1 Hours

Discussion

Though lockdown measures were gradually lifted, **and some schools were allowed to reopen, children’s regular** routines were disrupted with the addition of new rules, such as wearing a mask in class or making a transition to online or hybrid schooling (instead of in-person learning). Emerging research has suggested that these various restrictions, as well as the fear of the virus itself, may have caused children to experience negative mental health consequences. The unexpected disruption of the social fabric and norms has affected the behavioral and mental health of the public, including children. The mental health of children has been influenced by several ways, as this unprecedented situation changed a way they typically grow, learn, play, behave, interact, and manage emotions.^{8,9}

Several studies in adults during the pandemic have found consistent associations between lower physical activity and poorer mental health and between higher daily screen time and poorer mental health, but association this has not been well studied in children.¹⁰ Researchers have drawn on prepandemic studies to emphasize the potential mental health consequences of the pandemic and called for research and augmented mental health services. However, few studies have reported on the mental health of children during the pandemic and none, to our knowledge, have specifically examined the association of physical activity and screen time with mental health in nationally representative samples.¹¹

Parents unanimously mentioned that school closure has been the major factor and has affected the physical activities of their child. Studies conducted prior to lockdown have identified that children are

engaged more in sedentary time and reduced levels of PA on weekends as compared to weekdays. Children tend to put-on weight during holidays, especially those who are not enrolled in recreational activities and summer camps.¹¹ It can be hypothesized that there may be vast repercussions on children's overall physical health during the prolonged lock down situation because of school closure lasting a year or more. With a rise in inactivity and disrupted sleep schedules/quality in children during the COVID-19 lockdown there have been disrupted behaviour across 24-hour day. In a national survey, only 4.8% of children were meeting combined movement behaviour guidelines during COVID-19 restrictions.¹²

Lastly, the survey respondents were mainly more highly educated parents with higher household income levels. Findings may not extend to children whose parents have not attained a college degree or who reside in lower income households. It will be useful for future research on the impact of COVID-19 on children's PA and sedentary behaviour to collect data from a more diverse sample and among lower income families.

Conclusion

More research is needed to improve our understanding of the long-term impacts of the COVID-19 pandemic on children's mental health, especially with regards to the identification of protective factors found in children who may have been less affected by the pandemic. Several questions remain unanswered including which characteristics of living environments can positively or negatively affect children's capacity to adapt to major public health crises such as the COVID-19 pandemic.

Ethical approval was taken from the institutional ethical committee and written

Informed consent was taken from all the participants.

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