



A study of effect of excessive screen time during covid-19 on physical health of boys and girls of class 8th in selected schools

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Abstract:

The worldwide lockdown and epidemic of the COVID-19 virus has caused widespread panic and dread. This phenomena has had both immediate and long-term effects on the psychological well-being of children and teenagers. Many variables, including a child's developmental age, educational background, the presence or absence of a mental health problem, socioeconomic situation, and isolation due to illness or fear of infection, affect the nature and severity of an event's effect on a child.

Keywords: COVID-19, Lockdown, Mental health, Children, Adolescents

Introduction

In response to the worldwide COVID-19 pandemic and the need to reduce coronavirus transmission, numerous nations, including India, have issued stay-at-home recommendations, imposed lockdown restrictions, and instituted social distancing procedures. Extended school closures led to the implementation of online teaching-learning methods, while mobility limitations led to an increase in screen time for both enjoyment and socializing. While these precautions have helped to some degree, they have also led to a rise in the amount of time teenagers spend in front of various displays, including television, computers, video games, and mobile devices, much over the suggested amount of two hours per day. Weight gain, behavioral issues, and sleep difficulties are just some of the well-documented detrimental health effects of excessive screen time (ST). Because of this, teenagers, many of whom may have been participating in hazardous lifestyle habits before the current COVID-19 epidemic, are likely to be at a higher risk of unfavorable health effects because to the rise in ST. This necessitates research on the extent to which teenagers had extra ST during the pandemic and an analysis of the impact this had on factors including diet, exercise, and rest.

A complicated, nonlinear, and “context-driven effect has been indicated by the few research that have evaluated the influence of the COVID-19 epidemic on adolescents' lifestyle practices. For instance, one research found that both ST and regular PA increased in teenagers during the



pandemic, whereas another cross-sectional study found that PA decreased significantly and ST increased substantially. Adolescents who spend more time in front of screens not only have lower PA levels, but also eat less fruit and vegetables and more energy-dense foods. Fewer investigations were done during the COVID-19 epidemic, and even less is known about the correlation between high ST and the diets of teenagers. Adolescents that get too much ST have been linked to increased anxiety and despair, as well as poor sleep quality and daytime functioning. Although there is conclusive evidence linking screen-based sedentary behaviors to sleep delay and insufficiency, the effect of ST on mental health seems to differ with the amount of time spent in front of the screen and the types of media consumed. The effects of excessive ST may have a ripple effect on other hazardous habits among teenagers, making the situation worse more precarious for their health during the epidemic.

There has been no announcement yet on how long the lockdown limits or the COVID-19 epidemic will persist. As lockdown restrictions in India remain and the possibility of a third wave commencing persists, it is important to further understand the effect of the enhanced ST during the COVID-19 on the lifestyle patterns of teenagers. This knowledge may be used to tailor ST recommendations and direct policies and initiatives that reduce the health concerns associated with excessive ST in young adults. However, there is a shortage of research looking at the incidence and size of ST during the current epidemic, as well as its connection to lifestyle choices and mental health among teenagers in India. To the best of our knowledge, this study is the first to provide a comprehensive investigation into several lifestyle behaviors, including dietary habits, PA levels, sleep quality, and depressive symptoms, among adolescents in India during the pandemic, and to assess these behaviors as a function of ST. The study's overarching goal was to determine how much of an effect screen time (ST) had on Indian adolescents' lifestyle choices during the COVID-19 pandemic. The study's specific objectives were to 1) assess ST use and addiction among adolescents aged 10 to 15 in Mumbai during the COVID-19 outbreak; and 2) analyze the correlation between ST and dietary choices, PA levels, sleep quality, and depressive symptoms.

Impact on young children

Even before a kid is born, the negative effects of stress begin to appear. Anxiety and depression in parents, and especially pregnant moms, are intrinsically related to the health of the fetus, making them more sensitive during times of stress. The emotional and social growth of young children and teenagers is more affected by the epidemic and lockdown than that of adults. Early research conducted during the ongoing epidemic indicated that younger children (ages 3-6)



were more prone to exhibit signs of clinginess and worry of family members getting infected than older children (6-18 years old). Teens and preteens, on the other hand, were more prone to get distracted and ask repeated questions about COVID-19. Despite this, children of all ages displayed serious psychological disorders, including increased irritability, inattention, and clingy behavior. The results of the parent surveys show that kids feel anxious, scared, and all by themselves because of the state of the world right now. It was also found that kids had trouble sleeping, had nightmares, ate less, were more irritable, had trouble focusing, and had separation anxiety.

Impact on school and college going students

Children and teenagers throughout the world learned most effectively via one-on-one relationships with adults and their peers before the lockdown. Over half of all students throughout the globe have been affected by the widespread closure of educational institutions. The home confinement of children and teenagers is related with uncertainty and anxiety which is attributed to disturbance in their schooling, physical activity and possibilities for socializing . Long periods away from the school's regular routine might cause students to get bored and unmotivated to participate in extracurricular activities. Some children have shown decreased levels of affect for not being able to play outside, not seeing friends and not participating in the in-person school. Due to the long-term change in routine, these youngsters have grown more reliant on their parents, clinging, and attention-seeking. It's anticipated that kids would be reluctant to return to school when the lockdown ends, and that they'll have a harder time connecting with their adult role models once classes start. Consequently, the limitation of mobility put on them might have a long term detrimental impact on their overall psychological wellness .

One research indicated that high school and college students worry about missing important academic opportunities when exams, exchange programs, and other activities have to be postponed. When compared to the use of other forms of social distance, the current body of research on COVID-19 shows that school closures in isolation save roughly 2-4% extra lives. In addition, they advocate to policymakers that if social separation is advised for an extended period of time, schools should use alternative less disruptive social distancing measures. However, given contemporary conditions, it is questionable whether total closure of school and institutions is required for a longer time. Purchases made in a frenzy during times of stress have been linked to a primal need to provide for one's family. Today's epidemic has led to an increase in hoarding behavior among young people. It is also shown that among adolescents social



distancing is considered mainly as a social obligation and it is followed more genuinely if driven by prosocial motivations to protect others from becoming ill. Furthermore, children's increasing usage of internet and social media owing to longer confinement at home predisposes them to internet addiction, access undesirable information, and susceptibility to bullying and abuse. Worse, if a kid is living in a violent household, they are less likely to be able to report violence, abuse, or harm during a lockdown, when schools and legal and preventive agencies are not operating at full capacity.

Impact on children and adolescents having special needs

One in six children between the ages of two and eight has a neurodevelopmental, behavioral, or emotional disorder. These children with special needs [autism, attention deficit hyperactivity disorder (ADHD), cerebral palsy, learning disability (LD), developmental delays (DD), and other behavioural and emotional difficulties] face challenges during the current pandemic and lockdown. They are unable to tolerate change and their symptoms worsen as a result of the limits placed on them and the hostile atmosphere that does not fit in with their usual routine. They struggle to execute their own job without supervision, to follow directions, and to grasp the complexities of the pandemic scenario. Children who have had their social and behavioral anchors cut owing to the closure of special schools and day care centers may return to earlier stages of development as a consequence of a lack of support and the inability to acquire new skills. Temper outbursts and arguments between teenagers and their parents are also common results of these circumstances. Although these kids had a tough time even in special schools before the epidemic, they had eventually learned to stick to a routine for the most of the day. Parents of children and adolescents with special needs often rely on outside services like schools and therapists since they lack the training and experience to deal with these situations on their own. Each child's demands will vary depending on the specifics of their disease. Children on the autism spectrum have a hard time adjusting to new situations. When something is moved or changed from its normal placement, they feel anxious and frustrated. They could exhibit more severe behavioral issues and self-harm. Lockdown is a major obstacle for parents of autistic children. Since it is challenging for children to learn via online sessions, the suspension of speech therapy and occupational therapy might have a detrimental influence on their skill development and the attainment of the next milestone. Young people who have Attention Deficit Hyperactivity Disorder (ADHD) have difficulty using social signals to make sense of their environment. They have a hard time staying contained and avoiding contact with potential sources of infection. Being cooped up increases the likelihood of hyperactivity and



heightened urges, making it challenging for caregivers to engage these youngsters in meaningful activities. It is estimated that adolescents and youngsters suffer from obsessive-compulsive disorder (OCD). It is hypothesized that children with obsessive-compulsive disorder would be among the most hit by this epidemic. They are likely to feel more anxiety because of their contamination, hoarding, and somatic preoccupation obsessions and compulsions. Prevention of the transmission of the COVID-19 virus may be aided by maintaining a clean environment”. The United Nations recommends washing your hands often (at least six times a day) and thoroughly (especially after using the bathroom) to prevent the spread of disease. People with hoarding problem have it much more difficult during the lockdown, which has caused worry among the healthy population about having access to adequate food and prevention-related materials, such as masks and sanitizers.

Review of literature

(Wunsch et al. 2021) studied “The Impact of COVID-19 on the Interrelation of Physical Activity, Screen Time and Health-Related Quality of Life in Children and Adolescents in Germany: Results of the Motorik-Modul Study” discovered that having less time spent engaging in physical activity (PA) and more time spent in front of a screen (ST) both had a detrimental impact on health-related quality of life (HRQoL), which is a protective factor against sickness and death. There are not many studies that look at the connections between PA, ST, and the mental health of young people, and this is particularly true at periods of high mental health burdens, such as the COVID-19 epidemic. The goal of this study was to determine whether or not PA, ST, and HRQoL levels experienced before the COVID-19 pandemic can accurately predict PA, ST, and HRQoL levels experienced during the COVID-19 pandemic. Self-reports of physical activity and sedentary time (PA and ST), as well as HRQoL, were obtained from participants in the Motorik-Modul Study (MoMo; N = 1711; Mean = 10.36 (SD = 4.04) Years; Female = 49.8%; Healthy Weight = 76.8%). Participants provided these reports both prior to and during COVID-19. A route prediction model was used to analyze the relationships between all variables, beginning before COVID-19 and continuing through the event. Independent of gender and age, the results demonstrated that each and every variable measured during COVID-19 could be predicted by the relevant values measured before COVID-19. The results of the cross-lag analysis showed that before COVID-19 ST had a negative affect on during COVID-19 PA. In children less than 10 years old and in females, HRQoL before COVID-19 was positively linked with during COVID-19 PA. However, this association was not seen in adolescents and in boys. As a result of the finding that a negative



influence of ST acquired before COVID-19 on PA acquired during COVID-19 exists regardless of age or gender, it is possible that it would be more prudent for health policy to concentrate on a general reduction in ST as opposed to PA enhancement in order to guarantee high PA levels.

(Chaabane et al. 2021) studied “The Impact of COVID-19 School Closure on Child and Adolescent Health: A Rapid Systematic Review” realization and Teens and kids have valid worries about the safety of their communities in the event of a pandemic that forces the closure of their schools. Our goal is to compile information on how the worldwide closure of schools due to the 2019 coronavirus illness (COVID-19) epidemic affected the health of children and teenagers throughout the world. We searched PubMed, Embase, and Google Scholar for studies published between January and September of 2020 and performed a speedy systematic review. Ten original studies were included in our analysis. The incidence of hospitalizations and pediatric ER visits dropped dramatically when schools were closed due to the COVID-19 outbreak. Health care, disability services, and food assistance programs that were formerly available to students at their schools were cut. Children from low-income households and those with disabilities were also more likely to experience a worsening of educational gaps as a result of a lack of resources and support for distance education. Children and adolescents experienced elevated levels of stress, unhappiness, frustration, indiscipline, and hyperactivity, as well as social isolation as a result of the school shutdown. The expected rise in Body Mass Index and children obesity prevalence was greater the longer the period of school closure and the lack of daily physical activity. During times when schools are closed, it is especially important to identify and help kids who are at risk for cognitive and emotional difficulties.

(Ezpeleta et al. 2020) studied “Life Conditions during COVID-19 Lockdown and Mental Health in Spanish Adolescents” discovered that for 72 days, thanks to COVID-19, Spanish children were quarantined and their lives were severely disrupted. The COVID-19 danger remains, therefore it's important for physicians, administrators, and families to understand the factors that contribute to an increased risk of mental health issues so that they may take action to mitigate those risks. The purpose was to examine the ways in which teenagers' experiences of lockdown are linked to mental health issues. Lockdown and the Strengths and Difficulties Questionnaire responses were collected from 226 parents of community participants, including 117 girls and 109 boys (mean age: 13.9; Standard deviation: 0.28) in a longitudinal research (SDQ). We did a series of regression analyses, adjusting for prior SDQ results, to see what we might learn. After being placed in lockdown, students showed an uptick in conduct, peer,



prosocial, and overall issue ratings. Adolescents' worse mental health during the COVID-19 lockdown was linked with engaging in harmful behaviors, experiencing a deterioration in their relationships with others, and having a dysfunctional parenting style, after controlling for other indicators of psychopathology. Keeping the teenager busy and preserving their daily habits and routines in a non-conflicting setting and giving assistance to parents appears crucial for reducing psychological stress in a condition of isolation caused by a state of emergency.

(Aguilar-Farias et al. 2021) studied “Sociodemographic Predictors of Changes in Physical Activity, Screen Time, and Sleep among Toddlers and Preschoolers in Chile during the COVID-19 Pandemic” realization and The purpose of this study was to investigate the early phases of the 2019 coronavirus disease pandemic in Chile among toddlers and preschoolers and to identify the sociodemographic factors linked with changes in movement behaviors (physical activity, screen time, and sleep). Between March 30 and April 27, 2020, caregivers of children aged 1 to 5 took part in an online survey. Children's and families' demographics, as well as their mobility patterns before to (and during) the epidemic, were documented. There were 3,157 full data contributors (mean age of children was 3.111.38 years). The early phases of the pandemic were characterized by a fall in physical activity, an increase in sedentary behavior, and a worsening in sleep quality. The effects of the pandemic limitations on the physical activity, screen time, and sleep quality of toddlers and preschoolers living in rural locations with enough room to play were milder. Significant changes were seen in older children, those whose caregivers were aged 35–45 and had a higher educational level, and those who lived in flats. These changes were mostly a reduction in overall physical activity and an increase in screen time. This research demonstrates the profound effect the pandemic restrictions have had on the mobility patterns of Chilean toddlers and preschoolers.

(Katona et al. 2021) studied “Physical Activity and Screen Time among Hungarian High School Students during the COVID-19 Pandemic Caused Distance Education Period” realization and As some context, during the global SARS-CoV-2 epidemic, high school in Hungary was conducted through remote learning. An increase in sedentary behavior and a decline in physical activity may raise the danger of developing diabetes, heart disease, and obesity. Our research aimed to determine whether or if teenagers and young adults altered their levels of physical activity (aerobic exercise, muscular strengthening) or time spent in front of screens during the epidemic. Methods: Interviews were conducted with high school seniors from 66 public schools throughout 37 cities in Hungary (N = 2508). Questions on exercise and television viewing were adapted from the World Health Organization's Health Behaviour in School-aged



Children Survey and the National Center for Health Statistics' Youth Risk Behavior Survey. Students' self-reported changes in physical activity and screen time before and after lockdown were analyzed using a 2 2 factorial analysis of covariance (ANCOVA) to test for the effects of gender (male vs. female) and/or age (adolescents vs. young adults) (covariate: BMI Z-score). As a result, it seems that most of the sample has become less physically active. Screen time rose but aerobic and muscle-building workouts decreased during remote learning. A lower rate of aerobic activity was seen in males, and more screen time was reported by both children and young adults.

(Jusienė et al. 2022) studied “The Predictors of Psychological Well-Being in Lithuanian Adolescents after the Second Prolonged Lockdown Due to COVID-19 Pandemic” realization and Recent studies have shown that extended pandemics and lockdowns might have a negative effect on children's mental health. Teens saw an increase in mental health issues after the second wave of COVID-19. This research intends to investigate the key characteristics resulting from intra-individual, inter-individual, and environmental settings that predict high psychological well-being in a sample of teenagers after a second extended time of social limitations and distant schooling. Students ranging in age from 11 to 19 were enrolled in the research. The study asked children to rate their own emotional and behavioral health on a scale from 0 to 10. It also measured their social capital at school, the quality of their connections with their classmates and teachers, and the strength of their communication with their parents. After a half a year in isolation, the data showed that 58% of teenagers in the spring of 2021 were in excellent mental health. Nearly 19 percent of young people were at risk for depression. The research indicated that during a time of extended isolation, teenagers' psychological well-being was predicted by male gender, stronger connections with parents, the absence of substantial emotional and behavioral issues, less sedentary activity, and greater school social capital. Students' low levels of physical exercise are a major contributing to their bad health. Finally, it was shown that teenage depression risk may be predicted in part by the adolescent's lack of in-person social interaction.

(Kaku, 2022) studied “Mental health of children with neurodevelopmental disorders during COVID-19” The global community has been profoundly affected by COVID-19. Closings of child-serving institutions including schools, rehabilitation centers, and day cares have a disproportionately negative impact on young people. Modern approaches to mental health care may help parents of children with mental health issues. This article focuses on families where both parents and children suffer from neurodevelopmental and mental health illnesses, and



discusses the steps these families have made to cope. The series will shed light on how families have changed and how healthcare specialists must address challenges in order to create new therapies by focusing on the true tales of individuals who have been impacted by the epidemic. No comparable report exists from India or any other low- or middle-income country, making this case study unique.

(Stavridou et al., 2021) studied “Obesity in Children and Adolescents during COVID-19 Pandemic” The global lockdown and other precautions taken in response to the COVID-19 epidemic have had unexpected effects on daily life. Children, adolescents, and young adults' weight gain is being studied as part of the COVID-19 pandemic. We used a literature search that will include scholarly publications up through November 10, 2020, to find studies that fit our criteria. Fifteen publications were found to be eligible for inclusion; nine of them identified 17,028,111 children aged 5 to 25, and the other five were age admixture studies (n = 20,521). Children, teenagers, and young adults put on weight during the COVID-19 era. As a consequence of the COVID-19 pandemic, there has been an uptick in the consumption of sugary drinks and fatty meats like pig. Family budget constraints contribute to the issue of unhealthy diets due to lack of money. Another contributor to weight gain was the considerable decrease in opportunities for physical exercise that resulted from the constraints. Kids, teens, and young adults have changed their eating and exercising routines as a result of the constraints imposed on them by COVID-19. Healthcare providers may help protect children from the dangers of obesity by raising awareness and offering preventive measures, and by enlisting the support of parents in this effort. In an ideal society, everyone would be held to the same high standards, and everyone would be protected from harm.

Conclusions

High rates of excessive ST, lack of physical activity, and subpar sleep quality were seen in this research of Indian teenagers aged 10 to 15 years old during the current COVID-19 epidemic. More time spent in front of screens was also connected with more unhealthy eating, less physical activity, and more sleep problems among teens. Predicting whether or not these fleeting tendencies will stay once the epidemic is over is challenging. However, in the midst of nationwide school closures, it is important to adequately control the expanded screen time and its effects on teenagers' lifestyle patterns. Prompt opportunities exist to support the educational and entertainment needs of adolescents while ensuring optimum physical, sleep, and mental health during the pandemic, including the use of screens to engage adolescents in active play;



the use of mobile applications and digital platforms to provide nutrition, PA, and mental health counseling; and the use of social media to raise public awareness about the adverse health consequences of excess ST. Adolescents may benefit further if their parents take an active role in encouraging them to limit their screen time, setting a good example themselves in terms of ST and PA participation, keeping a close eye on their eating and sleeping habits, and placing a high priority on the early detection of anxiety and depression.

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