Impact Of COVID-19 PandemicOnHabitual Increase In Screen Time Usage Among Adolescents: A Comparative Study

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Abstract
The COVID-19 pandemic has drastically reshaped daily routines and behaviours worldwide, particularly among adolescents. This study aimed to examine the impact of the pandemic on screen time usage among adolescents aged 10-19 years. A self-structured questionnaire was administered to assess changes in screen time habits before and during the pandemic. Results revealed a significant increase in screen time usage, with rural adolescents showing elevated usage of television (TV), laptops, and video games, while urban adolescents exhibited a notable increase in mobile phone usage. This surge in screen time raises concerns about its implications for physical and mental health among adolescents.

Keywords: COVID-19, screen time, adolescents, school closure, physical health, mental health.

Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, emerged in late 2019, leading to widespread global health crises. Governments worldwide responded with stringent measures, including lockdowns and school closures, to contain the spread of the virus. These measures significantly altered daily routines, particularly for adolescents, who experienced disruptions in education, social interactions, and leisure activities. One notable change observed during the pandemic is the increased reliance on electronic devices for educational, recreational, and social purposes, leading to a surge in screen time usage among adolescents. This study aims to investigate the extent of this increase and its implications for adolescent health and well-being.

Background

Excessive screen time has long been associated with adverse health outcomes, including physical and mental health issues. Prolonged screen time replaces healthy behaviours such as physical activity and adequate rest, leading to sedentary lifestyles and increased risks of obesity, poor sleep quality, and musculoskeletal problems. Moreover, excessive screen time may contribute to adverse psychological consequences, including depression, anxiety, and behavioural disorders such as gaming addiction. The COVID-19 pandemic exacerbated these concerns, as lockdowns and school closures forced adolescents to spend more time indoors and engage in screen based activities for education, entertainment, and socialization. Research has shown that excessive screen time during adolescence is associated with various health risks, including obesity, poor sleep quality, musculoskeletal problems, and mental health issues such as depression and anxiety. The World Health Organization (WHO) recommends limiting screen time for adolescents to no more than two hours per day to reduce the risk of these adverse health outcomes. However, the COVID-19 pandemic has disrupted these guidelines, as adolescents spend more time indoors due to lockdowns and school closures, leading to a surge in screen time usage. Adolescents' sedentary behaviour and screen time consumption have been greatly impacted by the COVID-19 pandemic. Although the short-term effects may be difficult to manage, targeted interventions can help mitigate the long-term health consequences. With the help of resources for education, physical activity promotion, and screen time management, adolescents can improve their overall well being and form healthier habits.

Objective

The primary objective of this study was to assess changes in screen time usage among adolescents during the COVID-19 pandemic. By examining patterns of screen time behaviour before and during the pandemic, we aimed to identify variations across different demographic groups, geographical areas, and types of electronic devices used. Understanding these changes is crucial for developing targeted interventions to mitigate the adverse effects of excessive screen time on adolescent health.

Methodology

This study was conducted in the Kashmir valley, focusing on school-going adolescents aged between 10 to 19 years. A self-structured questionnaire was designed to collect data on screen time habits before and during the COVID-19 pandemic. The questionnaire included items related to the frequency, duration, and types of screen time activities engaged in by adolescents, such as TV viewing, laptop usage, mobile phone usage, video game playing, and other electronic devices. Data were collected from both urban and rural areas to capture variations in screen time behaviour across different settings. Statistical analyses were conducted to compare screen time usage before and during the pandemic and identify demographic factors associated with changes in screen time habits.

Results

Analysis of the data revealed a significant increase in screen time usage among adolescents during the COVID 19 pandemic compared to pre-pandemic levels. Rural adolescents exhibited higher usage of TV, laptops, and video games, while urban adolescents showed a notable increase in mobile phone usage. Gender differences were also observed, with girls displaying increased TV and laptop usage, while boys demonstrated higher usage of mobile phones, video games, and other electronic gadgets. Furthermore, adolescents from government schools showed increased TV and mobile phone usage compared to those from private schools, whereas laptop, video game, and other gadget usage were higher among adolescents from private schools.

Table 1: Sitting and Screen time usage during Covid-19 lockdown

Sitting/ screen time usage during covid-19	F	Percent
Significantly increased	846	70.5
Slightly increased	307	25.6
Similar	30	2.5
Slightly decreased	10	0.8
Significantly decreased	7	0.5
Total	1200	100.0

Table 1 depicts the majority of respondents mentioned that their sitting and screen time usage increased significantly which constitutes 70.5% (846) of adolescent's subjected to this study. As unprecedented confinement at home caused by COVID-19 leads adolescents to stay indoors most of the time. Teenagers' screen time consumption and sedentary behaviour have been significantly impacted by the COVID-19 epidemic. Targeted actions can reduce the long-term health repercussions, even though the short-term effects might be difficult. Through encouraging physical activity, controlling screen time, and offering instructional materials, we may assist teenagers in forming better habits and enhancing their general health.

Table 2: Type of screen used most during COVID-19 lockdown

Type of Screen used more during covid-19	F	Percent
TV	30	2.1
Mobile	1140	95.6
Laptop	16	1.1
Virtual Gaming	10	0.7
Others	4	0.2
Total	1200	100.0

During COVID-19 pandemic, screen time increased drastically due to social distancing and stay-at-home measures. Online classes, entertainment and socialization increased digital device usage. In table 2 the respondents stated that mobile phone was the screen used most during covid-19 as indicated in table, 1140 (95.6%) respondents used mobile more during lockdown.

Table 3: Time (in HRS) spent on mobile phone during COVID-19 pandemic.

No. Of Hours Spent on Mobile	F	Percent
0-4 Hrs	288	24
4-6 Hrs	614	51
6-10 Hrs	298	25
Total	1200	100%

Table 3 indicated that 51% (614) respondents used mobile phones for 4-6 hours followed by 25% (298) using mobile for 6-10 hours during the C0VID-19 pandemic. A number of health issues among teenagers, including obesity, type 2 diabetes, cardiovascular disease, poor mental health, and sleep disruptions, have been related to prolonged sitting and screen usage

Table 4. Comparative study of screen time usage among adolescents according to residence.

Various screen usage		Residence					
		Rural		Urban		Overall	
		F	Percent	F	Percent	F	Percent
TV	*Significantly increased*	262	36.1	147	31.2	409	34.7
	Increased	312	43.0	114	23.9	426	37.7
	Remained Same	96	13.2	100	21.0	196	15.4
	Decreased	56	7.8	113	23.9	169	12.2
	Total	726	100.0	474	100.0	1200	100.0
LAPTOP	*Significantly increased*	17	3.6	74	10.2	91	8.4
	Increased	420	88.4	598	82.4	1018	84.0
	Remained Same	27	5.8	38	5.2	65	5.4
	Decreased	10	2.2	16	2.2	26	2.2
	Total	474	100.0	726	100.0	1200	100.0
MOBILE	*Significantly increased*	801	95.6	349	97.1	1150	96.0
	Increased	22	2.5	3	0.7	25	2.0
	Remained Same	14	1.7	8	2.2	22	1.8
	Decreased	3	0.3	0	0.0	3	0.2
	Total	840	100.0	360	100.0	1200	100.0
VIDEO GAME	*Significantly increased*	223	67.4	660	75.8	883	73.5
	Increased	31	9.4	117	13.5	148	12.4
	Remained Same	33	10.1	48	5.5	81	6.8
	Decreased	43	13.1	45	5.3	88	7.4
	Total	330	100.0	870	100.0	1200	100.0

Among the type of screen used, mobile phone usage was seen most among the respondents. Apart from mobile usage, other types of screens like T.V, laptop and virtual gaming were also significantly increased. In the rural population the usage of T.V and mobile phones was more evident while laptop and virtual gaming was seen more in urban study group as stated in table 4.

Discussions

The findings of this study highlight the multifaceted impact of the COVID-19 pandemic on screen time usage among adolescents. The surge in screen time, coupled with prolonged home confinement and decreased outdoor activities, raises concerns about its implications for adolescent health and well-being. Excessive screen time is associated with various health risks, including physical health issues such as eye strain, musculoskeletal problems, and obesity, as well as mental health issues such as depression, anxiety, and behavioural disorders. Moreover, prolonged screen time exposure may contribute to the development of gaming addiction and other maladaptive behaviours. The COVID-19 pandemic has led to a paradigm shift in education, with schools transitioning to online learning platforms and remote work becoming the new norm. While these technological advancements have enabled continuity in education and work, they have also blurred the boundaries between work, school, and leisure, leading to an increase in screen time usage among adolescents. Moreover, the closure of recreational facilities and limited opportunities for outdoor activities during the pandemic have further exacerbated the reliance on electronic devices for entertainment and socialization as shown in Table 1, 2, 3 and 4. Adolescents from rural areas and low-income households may be disproportionately affected by the increase in screen time during the pandemic, as they may have limited access to outdoor spaces and recreational facilities. Furthermore, the digital divide, characterized by disparities in access to technology and internet connectivity, may widen during the pandemic, exacerbating existing inequalities in screen time usage and health outcomes among adolescents as shown in Table 1, 2, 3 and 4.

Conclusion

Studies have repeatedly demonstrated that during the pandemic, adolescents engaged in significant increases in sedentary behaviours, including extended sitting. These increases were attributed to social distancing tactics, remote learning, and restricted access to outdoor activities. Screen time, comprising activities like watching television, playing video games, and using computers and cell phones, underwent a huge surge. Online education, social interactions, and entertainment became important ways of participation. A number of health issues among teenagers, including obesity, type 2 diabetes, cardiovascular disease, poor mental health, and sleep disruptions, have been related to prolonged sitting and screen usage. The findings underscore the urgent need for interventions to promote healthier screen time

habits among adolescents during and beyond the COVID-19 pandemic. Strategies aimed at reducing screen time, promoting physical activity, and fostering positive lifestyle behaviours are essential for mitigating the adverse effects of excessive screen time on adolescent health. Additionally, targeted interventions tailored to specific demographic groups, such as rural adolescents, girls, and those from government schools, may be warranted to address disparities in screen time behaviour and its associated health risks.

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