The relationship between screen time exposure and the presence of anxiety-related disorders among adolescents during the COVID-19 pandemic: A cross-sectional study

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Abstract

Background: The Coronavirus Disease 2019 (COVID-19) pandemic prompted rules and laws such as lockdown, which contributed to staying at home and participating in sedentary activities such as using smartphones, tablets, televisions, gaming devices, and computers. As a result of the increased use of digital screen time, a worldwide issue has arisen among various age groups, especially adolescents, which may have affected their psychological well-being, increasing their susceptibility to anxiety-related disorders.

Objective: This study aimed to assess the relationship between screen time exposure and the presence of anxiety-related disorders among adolescents during the COVID-19 pandemic.

Methods: A quantitative descriptive cross-sectional design using convenience sampling was used in this study. The online self-administered questionnaire, including the Arabic-translated version of the Screen for Child Anxiety-related Disorders (SCARED-C), was distributed through social media using Google forms between February and April 2021. The Chi-Squared test was used for data analysis.

Results: Of 625 participants, majority were females ($n = 527$, 84.3%) than males ($n = 98$, 15.7%). A significant difference between screen time and the presence of an anxiety-related disorder among adolescents during the COVID-19 pandemic ($p = .021$) was noted. More than half of the participants ($n = 410$, 65.6%) scored above 25 in the SCARED-C test, indicating the presence of an anxiety-related disorder regardless of the type. Of those, more than a quarter ($n = 176$, 28.2%) used screens for more than 8 hours a day.

Conclusion: The results indicated a relationship between screen time exposure and the presence of anxiety-related disorders among adolescents during the pandemic. In particular, adolescents are more susceptible to the adverse effects of increased exposure to screen time, which is constantly on the rise. Therefore, nurses and other healthcare professionals can play a significant role in providing guidance and advice to parents, caregivers, and adolescents themselves on how to limit screen time exposure. The findings can also be useful for future studies to build on and develop screen time management interventions and guidelines.

Keywords

Background

Since March 2020, after the detection of the first case of COVID-19, Saudi Arabia responded to the pandemic by applying the lockdown at all services and establishing restrictions across the country. With the placement of strict regulations, technology and digital solutions facilitated the accommodation of essential services. This led to children staying at home and spending more time doing sedentary activities such as using smartphones, tablets, gaming devices, television, and computers (Alghamdi et al., 2021; Sultana et al., 2021).

Screen time is defined by the Oxford English Dictionary (Oxford University Press, 2020) as "time spent using a device such as a computer, television, or games console," while the World Health Organization (2019) defines it as "time spent passively watching screen-based entertainment (TV, computer, mobile devices)." The resultant rise in screen time use during the pandemic is a worldwide issue among children and adolescents and all different age groups (Hossain et al., 2020). On average, adolescents in the United States use up to

9 hours of the day using or watching screens (American Academy of Child and Adolescent Psychiatry, 2020).

Screen time during childhood can have long-term influences on a child's development. For children and young people, 2 hours of sedentary recreational screen time per day is acceptable (Australian Institute of Family Studies, 2021). For adolescents, however, there is no specific time limit recommended for screen exposure by any health organizations (Singh & Balhara, 2021). While screens can help with teaching and learning processes, entertainment, and keeping children busy, increased exposure to screens can threaten physical and psychological well-being in children and adolescents, such as by affecting mood and sleep problems (American Academy of Child and Adolescent Psychiatry, 2020). Increased screen time exposure has also been linked to anxiety in adolescents (Al Salman et al., 2020).

Anxiety is considered the most widespread diagnosis in adolescents and is known as having a difficult time controlling excessive worry and fear (Bennett & Walkup, 2022). Anxiety-related disorders are when someone experiences more than occasional worry or fear, and the feeling may not go away and can get worse over time which can consequently interfere with daily activities such as daily living activities as schoolwork and relationships. Several types of anxiety disorders exist, including generalized anxiety disorder, social anxiety disorder, panic disorder, and various phobia-related disorders (National Institute of Mental Health, 2022). Pediatric health care providers have a responsibility toward their patients and their families in educating them on healthy media use (Council on Communications and Media, 2013). It has been recommended by the American Academy of Pediatrics that providers should check and discuss screen time use at every annual well-child visit (Reid Chassiakos et al., 2016). It has also been noted that parents do not know how to manage their child's media use (Rich et al., 2015).

In recent years, many communities and different age groups have become completely dependent on digital devices, for instance, computers, tablets, and smartphones (Domoff et al., 2019), but this became more pronounced recently during the lockdown caused by the COVID-19 pandemic, which consequently might have profound implications on peoples' physical and mental health and well-being (de Miranda et al., 2020). One research study estimated that 89% of the population from different age groups in Saudi Arabia increased their digital screen time during the COVID-19 pandemic (Hassounah et al., 2020). A further study conducted on female adolescents aged 13–19 years old in Al-Khobar, Saudi Arabia, examined the relationship between the use of digital screen time and anxiety level and found that participants who spent more than 2 hours on electronic devices showed moderate to severe anxiety than those who spent less (67.3% vs. 62.5%)" (Al Salman et al., 2020). Because of the lack of research assessing the relationship between digital screen time exposure and anxiety among adolescents of both genders aged 13–19 years old in Saudi Arabia during the COVID-19 pandemic, there is a need for this study.

This study aimed to assess the relationship between screen time exposure and the presence of anxiety-related disorders among adolescents living in Saudi Arabia during the COVID-19 pandemic. To our knowledge, no previous studies

in the Kingdom have explored this phenomenon in both genders from this age group and during the pandemic.

Literature Review

COVID-19 has a significant impact on the physical and mental health of many people worldwide. The majority of countries worldwide have implemented measures to reduce the transmission and spread of the disease, including quarantine, lockdown periods, prohibiting traveling and family meetings, and transitioning to online education (Nagata et al., 2020). In addition, this pandemic has led to a significant change in ways of living, which made people more dependent on electronic devices. Prolonged screen use was significantly noticeable during the COVID-19 pandemic, especially among adolescents (Basay et al., 2020).

A study conducted by Al Salman et al. (2020) aimed to analyze the effects of electronic devices on anxiety among 903 female students attending secondary schools aged 14–19 in Al-Khobar City, Saudi Arabia. Their study revealed that 98% of the students used electronic devices; 67.3% used them for two or more hours per day, and 81.5% used them at bedtime. About 66% of the students experienced moderate to severe anxiety. The study concluded that using electronic devices at bedtime was associated with anxiety ((Al Salman et al., 2020).

Another study by Khouja et al. (2019) in the UK explored the links between screen time and anxiety. Avon Longitudinal Study of Parents and Children participants aged 16-18 made up the sample (n = 1,869). The researchers assessed the relationship between different types of screen time usage, such as watching TV, using computers, and texting. The results of this study showed a small increased risk of anxiety was associated with increased use of computers on both weekdays and weekends. The above studies have shown an association between increased screen time and increased risk of anxiety in adolescents (Khouja et al., 2019).

A study conducted by Kim et al. (2020) aimed to measure the strength of the link between passive and active manners of screen time and anxiety disorders in adolescents. They found that adolescents who spent four or more hours of passive screen time a day, compared to those who spent less than 2 hours a day, were three times more likely to meet the DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition, Text Revision) criteria for generalized anxiety disorder (Kim et al., 2020).

In Turkey, Basay et al. (2020) studied children and adolescents with psychiatric disorders and screen use. In a clinical sample of children and adolescents, they examined screen use style, challenging internet use, and the screen–psychopathology relationship. The study included 277 participants aged 6–17 (129 girls and 148 boys), of which 146 the participants were adolescents (12–17 years old). The study concluded that participants with anxiety disorders used screens the most (Basay et al., 2020).

In Canada, Maras et al. (2015) explored the link between screen time and anxiety symptoms in Canadian youth. There were 2,482 participants (1,048 males and 1,434 females), aged 11-20. The findings suggest a relationship between screen time in teens and anxiety, especially anxiety associated with prolonged video games and computer play.

Even though most studies mentioned above confirmed the relationship between increased screen use and anxiety among

adolescents, two studies found opposite results. Feng et al. (2014) examined the relationship between physical activity and time spent on screens with anxiety in 1,106 Chinese college students aged 18 years who completed a self-administered questionnaire. This study showed no statistically strong associations between physical activity, screen time, and anxiety among the participants (Feng et al., 2014). In addition, Orben and Przybylski (2019) explored screen use among teens and psychological well-being, focusing on the consequences of digital use before bedtime. The large-scale sample included participants from Ireland, the United States, and the United Kingdom (n = 17,247). They found little evidence for negative psychological effects linked with digital screens throughout the day or before bedtime (Orben & Przybylski, 2019). In a systematic review of reviews that aimed to examine the relation between screen time and health and well-being among children and adolescents, weak evidence for association was noted between increased screen time and anxiety (Stiglic & Viner, 2019). Finally, these studies in the review conclude that until now, most studies confirmed that prolonged screen time exposure is associated with anxiety and the presence of anxiety-related disorders in adolescents worldwide prior to the pandemic; however, to our knowledge, no study examined the relationship between screen time use and the presence of anxiety-related disorders among adolescents in Saudi Arabia during the COVID-19 pandemic. Thus, there is scope for such a study.

Methods

Study Design
A descriptive correlational cross-sectional design was used.

Sample/Participants
A convenience sampling technique was used. The study inclusion criteria were both genders, aged 13–19 years, Arabic speakers, living in Saudi Arabia, and parental approval for those under the age of 18 years old. Data were collected through social media to reach a large number of adolescents in Saudi Arabia. The minimum estimated sample size based on G* power 3.1 software was 314 (Faul et al., 2009), with the following input parameters: an alpha of .05, power of .85, and a medium effect size of .3.

Instruments
The questionnaire that was used consisted of three parts. The first part included demographic questions, and the second part consisted of questions covering screen time exposure in hours which included the number of hours spent per day on screen, if there was an increase in screen time during the pandemic or not, the number of hours that increased in using screens during pandemic compared to the hours before the pandemic, and if the parents made any limitations to the screen time usage. The third part included the Screen for Child Anxiety-related Disorders-Child version (SCARED-C) (Arabic translation) scale, which focuses on questions related to anxiety to screen for signs of anxiety disorders in children, and this is widely used for adolescence (Hariz et al., 2013). The SCARED-C scale is a 41-item inventory graded on a 3-point Likert-type scale. A total score of ≥ 25 may signify the

presence of an anxiety disorder. The Arabic translated version of the SCARED-C, for which we sought permission for use, is known to be the first child and adolescent anxiety screening tool in the Arab world. Hariz et al. (2013) translated the English child (SCARED-C) version to the Arabic language. The Arabic version of the SCARED-C demonstrated good psychometric properties with an internal consistency of .91, and the convergent validity between SCARED-C and the emotional subscale of the child strengths and difficulties questionnaire of (r = .70, p <.001) (Hariz et al., 2013).

Data Collection
The self-administered online questionnaire link, created using Google form, was attached to an ad distributed through social media (WhatsApp and Twitter) between February and April 2021. The title, aim, targeted population criteria, and expected completion time were mentioned in the distributed ad. The average time filling out the questionnaire was estimated between 5–10 minutes. The link was sent to the parents, and if they approved of having their child participate in the study, they were asked to ask their child to complete the survey. Before starting the questionnaire, participants had to go through the inclusion criteria and then consent, using an electronic signature for parental approval. The total number of respondents who accessed the link and proceeded with filling in the questionnaire was 625. None of the participants were excluded from the study. This means of recruitment facilitated easy access to many adolescents in a short period, especially with restrictions and social distancing put in place during the COVID-19 pandemic.

Data Analysis
Statistical analysis for this study was conducted using the IBM Statistical Package of Social Science (SPSS). Percentages and frequencies were used to summarize categorical variables, and the Chi-Squared test was used to assess the relationship between variables. The p-value threshold was set to <.05.

Ethical Considerations
Ethical approval was obtained from the review board No (Ref. No. 2B.63) from the Faculty of Nursing at King Abdulaziz University in Saudi Arabia. Consent and parental approval for minors' anonymity and confidentiality were maintained. Moreover, no harm was enforced on the participants, with all rights respected and safeguarded.

Results

Demographic Data and Screen Time Exposure
The total number of participants who entered the survey was 745. However, only 625 met the inclusion criteria and agreed to participate in the study. Of these 625 participants, (n = 98, 15.7%) were male, and (n = 527, 84.3%) were female. Many of the participants (n = 235, 37.6%) were 17–18 years old. Most of the participants were in secondary school (n = 376, 58%), and only (n = 82, 13.1%) were previously diagnosed with anxiety. About 80% used mobile phones as the most-used device. More than a third of the participants (n = 252, 40.3%) spent more than 8 hours on screens. The majority (n = 566,

90.6%) increased their level of screen time usage during the COVID-19 pandemic. More than a quarter (*n* = 213, 34.1%) reported 2–3 hours as the average increased time. Only (*n* = 135, 21.6%) had parents who applied strategies to limit screen time usage (**Table 1**).

Table 1 Demographic data and screen time exposure (*N* = 625)

Demographic data and screen time exposure		*n*	%
Gender	Male	98	15.7%
	Female	527	84.3%
Age	13–14	94	15.0%
	15–16	161	25.8%
	17–18	235	37.6%
	19	135	21.6%
Current school year	Grade 7	38	6%
	Grade 8	45	7%
	Grade 9	41	9%
	Grade 10	115	18%
	Grade 11	125	20%
	Grade 12	136	21%
	Freshman	110	17%
	Sophomore	15	2%
Previous diagnosis of anxiety	No	543	86.9%
	Yes	82	13.1%
Most used device	Mobile	496	79.4%
	iPad	29	4.6%
	All of the above	66	10.6%
Number of hours per day spent in front of a screen for entertainment and social networking	From 1 to 3 hours	43	6.9%
	From 3 to 5 hours	129	20.6%
	From 5 to 8 hours	201	32.2%
	More than 8 hours	252	40.3%
Increased screen time usage during the pandemic	No	59	9.4%
	Yes	566	90.6%
The increase (hours) of screen time usage during the pandemic	2–3	213	34.1%
	From 3 to 5 hours	178	28.5%
	From 5 to 8hours	93	14.9%
	More than 8 hours	141	22.6%
Parental limitations on screen time usage	No	490	78.4%
	Yes	135	21.6%

Anxiety among Adolescents during COVID-19

A Chi-square test was used to check the relationship between study variables and the presence of anxiety-related disorders among adolescents during the COVID-19 pandemic. The results indicated that there was a significant difference in the presence of anxiety-related disorders and gender of the participants (*n* = 363; 58%), with female participants scoring more than 25, which reflects the presence of an anxiety-related disorder compared to only male participants (*n* = 47, 7.5%) who also scored 25 indicating the presence of anxiety-related disorders (**Table 2**). In addition, there was a significant difference in the presence of anxiety-related disorders and previous diagnoses with anxiety. It was also found that the participants (*n* = 338, 54%) who had never been diagnosed with anxiety had scores higher than 25 on the SCARED-C scale, reflecting anxiety-related disorders.

Moreover, there was a significant difference in time spent on screens for entertainment or social networking and the presence of anxiety-related disorders (*n* = 410; 65.5%) for participants who scored more than 25 (*n* = 176; 28.8%) and who spent more than 8 hours on the screens. In addition, there was a significant difference in increased hours of screen exposure due to the COVID-19 pandemic and the presence of anxiety-related disorders; more than half of the participants (*n* = 410, 65.6%) who increased the hours spent on the screens during COVID 19 pandemic reported scores more than 25 on the SCARED-C scale, which reflects the presence of an anxiety-related disorder. In contrast, there was no significant difference between the presence of anxiety-related disorders and each of the following variables: age (*p* = .143), school grade (*p* = .270), type of device used (*p* = .679), and parental restrictions on the amount of time allowed for the use of devices (*p* = .364).

Another noteworthy result is that 490 participants' parents (78.4%) did not apply any strategies to limit or restrict screen time usage. About half of the participants (*n* = 317; 50.7%) whose parents did not apply any strategies to limit or restrict screen time usage scored above 25 on the SCARED-C scale, indicating the presence of anxiety-related disorders.

Discussion

Adolescence is a crucial stage for the advancement of mental illnesses such as anxiety, leading to negative consequences in life (Dardas et al., 2018). To our knowledge, the present study is the first to examine the relationship between screen time exposure and the presence of anxiety-related disorders among adolescents during the COVID-19 pandemic. In this study, 625 adolescents from both genders participated.

In terms of gender, there was a significant difference between both genders and the presence of anxiety-related disorders; however, this could be due to the great variance in gender participation wherein significantly more females participated than males (84.3% vs. 15.7%), even though both genders were equally invited to participate. In addition, the female participants had a significant difference in the presence of an anxiety-related disorder score compared to the males.

This variation could be due to the recruitment method that was used in the research because the researchers were solely females who used social media to distribute the survey, which, for cultural reasons, could be composed of a greater number of female followers. Moreover, 59% of the participants were students in high school (grades 10–12), which could be due to their more accessible access to social media compared to adolescents in the intermediate grades.

Table 2 The relationship between study variables and the presence of anxiety-related disorders (SCARED-C) ($N = 625$)

Variables		Anxiety								Sig.
		Score Less than 25 (anxiety-related disorder not present)				Score 25 and more (anxiety-related disorder present)				
		n	Total %	Column Total %	Row Total %	n	Total %	Column Total %	Row Total %	
Gender	Male	51	8.2%	23.7%	52.0%	47	7.5%	11.5%	48.0%	.000*
	Female	164	26.2%	76.3%	31.1%	363	58.1%	88.5%	68.9%	
Age	13–14 years	32	5.1%	14.8%	34.0%	62	9.9%	15.2%	66.0%	.143
	15–16 years	46	7.4%	21.3%	28.6%	115	18.4%	28.0%	71.4%	
	17–18 years	81	13.0%	37.6%	34.5%	154	24.6%	37.6%	65.5%	
	19 Years	56	9.0%	26.0%	41.5%	79	12.6%	19.3%	58.5%	
Current school year	Grade 7	13	2%	6%	34%	25	4%	6%	66%	.270
	Grade 8	18	2.8%	8.3%	40%	27	4.3%	6.5%	60%	
	Grade 9	12	2%	5.5%	29.3%	29	4.6%	7%	70.7%	
	Grade 10	40	6.4%	18.6%	34.7%	75	12%	18%	65.3%	
	Grade 11	40	6.4%	18.6%	32%	85	13.6%	20.7%	68%	
	Grade 12	40	6.4%	18.6%	29.4%	96	15.3%	23.4%	70.6%	
	Freshman	47	7.5%	21.8%	42.8%	63	10.8%	15.3%	57.2%	
	Sophomore	5	.8%	2.3%	33.33%	10	1.6%	2.4%	66.67%	
Previous diagnosis of anxiety	No	205	32.8%	95.3%	37.8%	338	54.1%	82.4%	62.2%	.000*
	Yes	10	1.6%	4.7%	12.2%	72	11.5%	17.6%	87.8%	
Most used device	Mobile	172	27.5%	80.0%	34.7%	324	51.8%	79.0%	65.3%	.679
	iPad	8	1.3%	3.7%	27.6%	21	3.4%	5.1%	72.4%	
	All of the above	21	3.4%	9.8%	31.8%	45	7.2%	11.0%	68.2%	
Number of hours per day spent in front of a screen for entertainment and social networking	From 1–3 hours	15	2.4%	7.0%	34.9%	28	4.5%	6.8%	65.1%	.021*
	From 3 to 5 hours	59	9.4%	27.4%	45.7%	70	11.2%	17.1%	54.3%	
	From 5 to 8 hours	65	10.4%	30.2%	32.3%	136	21.8%	33.2%	67.7%	
	More than 8 hours	76	12.2%	35.3%	30.2%	176	28.2%	42.9%	69.8%	
Increased screen time usage during the pandemic	No	23	3.7%	10.7%	39.0%	36	5.8%	8.8%	61.0%	.436
	Yes	192	30.7%	89.3%	33.9%	374	59.8%	91.2%	66.1%	
Increase in hours of screen time usage during the pandemic	From 2 to 3 hours	96	15.4%	44.7%	45.1%	117	18.7%	28.5%	54.9%	.000*
	From 3 to 5 hours	51	8.2%	23.7%	28.7%	127	20.3%	31.0%	71.3%	
	From 5 to 8 hours	32	5.1%	14.9%	34.4%	61	9.8%	14.9%	65.6%	
	More than 8 hours	36	5.8%	16.7%	25.5%	105	16.8%	25.6%	74.5%	
Parental limitations on screen time usage	No	173	27.7%	80.5%	35.3%	317	50.7%	77.3%	64.7%	.364
	Yes	42	6.7%	19.5%	31.1%	93	14.9%	22.7%	68.9%	

Note. * $p < .05$ is considered significant; $\alpha = .05$

Furthermore, a significant difference between adolescents who were or were not previously diagnosed with anxiety and the presence of anxiety-related disorders. This finding aligns with a Turkish study that found that longer screen time use was noted among children and adolescents with certain psychiatric disorders than those with none, particularly in those with an anxiety disorder (Basay et al., 2020). It also confirms the results of a study by Twenge and Campbell (2018), who explored the link between screen time exposure and psychological well-being and concluded that increased screen time exposure was strongly linked to being diagnosed with anxiety.

Moreover, there was a significant difference in time spent on screens for entertainment or social networking and the presence of anxiety-related disorders, and a significant difference in increased hours of screen exposure due to the

COVID-19 pandemic and the presence of anxiety-related disorders. These findings are coherent with a pre-pandemic study in Canada that evaluated the consequences of screen time on physical and mental well-being among 2,482 Canadian youth (Maras et al., 2015). The researchers concluded that the majority tended to use screens for 6–8 hours per day, and the length of time on screens was strongly linked to the extent of anxiety symptoms (Maras et al., 2015). Furthermore, the findings of this study support a recent study by Boers et al. (2020), who annually surveyed 3,826 seventh graders for four years. They also concluded that anxiety symptoms in a specified year could exacerbate when screen time usage increased within that particular year. Gunnell et al. (2016), who also examined the correlation between physical activity, screen time exposure, and anxiety symptoms among adolescents in Canada over time, also found that increased

screen time usage was associated with increased anxiety, in line with the finding of this study.

A direct comparison with prepandemic estimates of screen time may not be possible, as screen use increases during times of restrictions on school attendance and social gatherings. Nevertheless, there was a clear association between prolonged screen time and the presence of anxiety-related disorders, and it was consistent with a study by Tandon et al. (2021), who examined the relationship between physical activity and screen time with mental health among students, including adolescents, in the US during the pandemic. In addition, the findings align with a study conducted in Saudi Arabia following the COVID-19 pandemic, which estimated that 89% of the population from different age groups increased their digital screen time during the pandemic (Hassounah et al., 2020). Also, Al Salman et al. (2020), who explored the link between the use of digital screen time and anxiety level, reported that when electronic devices were used for more than 2 hours, moderation to severe anxiety was more common than they were used for less than 2 hours (67.3% vs. 62.5%). Whereas parents can control screen time usage in their children, a noteworthy result in our study is that 78.4% of the participants' parents did not apply any strategies to limit or restrict screen time usage, while only 21.6% did. This may be a huge factor contributing to the increased screen time usage among our sample and screen time extending more than eight hours a day. While there may be a need to adapt some of the prepandemic rules concerning screen time to the current situation, parents should encourage non-screen-based activities wherever feasible.

Furthermore, nurses and healthcare providers may assist in encouraging teens and their parents to use a harm reduction approach where possible, even if screen time is greater than optimal (Tandon et al., 2021). Engaging in non-screen-based activities can contribute to self-regulating benefits to health and well-being (Tandon et al., 2021). It has also been previously noted prior to the pandemic that parents may not know how to manage their child's media use (Rich et al., 2015). The findings of this study suggest further studies to explore the challenges that parents face in controlling screen time usage among their children during COVID 19 pandemic. By noting the challenges, nurses and healthcare providers can tackle the rising problem and support and empower their patients and their parents to limit screen time use and, therefore, reduce the negative effects of the phenomena. Furthermore, screen time cut-offs could be established for adolescents by the country's health guidelines seeing there aren't any (Singh & Balhara, 2021). The fact that data acquired through parent or teenager reports and prone to recall and social suitability bias were two limitations. Biases were sought to be mitigated by using validated, reliable measures whenever available. However, this was a cross-sectional correlational study, so no inference of causality can be concluded. Furthermore, we were unable to determine whether an anxiety-related disorder was present before or during the pandemic. Also, we could not tell if the presence of anxiety-related disorders is directly associated with the COVID-19 pandemic situation itself. Also, questionnaires were used to determine the presence of anxiety-related disorders regardless of the type; however, these measures are not identical to clinical diagnoses.

Conclusion

Adolescents in Saudi Arabia with prolonged screen time during the COVID-19 pandemic were significantly more anxious and suffering from anxiety-related disorders. In other words, adolescents should be the focus of attention for parents, health care professionals, educators, and social workers, who can protect them from the adverse effects of prolonged use of electronic devices, especially in the current times. Therefore, there is a critical need to revolutionize multisectoral approaches to providing equitable opportunities to all children and adolescents living in Saudi Arabia in terms of physical activities, including sports and outdoor recreation. More studies are also needed to find factors contributing to the increased use of screens. In addition, it is essential to establish age-specific guidelines for the use of electronic devices for extended periods, especially when screen time may be distributed and extensively used for recreational and educational purposes. We also support parents in limiting screen time, especially for younger adolescents.

Declaration of Conflicting Interest

The authors declare that no conflict of interest in this study.

Funding

Acknowledgment

Authors' Contributions

All authors equally substantially contributed to the work design, acquisition, analysis, and interpretation of the data; Drafting or revising it critically for important intellectual content; Final approval of the version to be published; Agreement to be accountable for all aspects of the work.

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Data Availability

The dataset generated during and/or analyzed during the current study is available from the corresponding author on reasonable request.

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