

INVESTIGATE THE RELATIONSHIP BETWEEN SCREEN TIME WITH DIETARY HABITS AMONG ADULTS

Original Research

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ABSTRACT

Background: Excessive screen time has become a significant concern in modern society, and its impact on dietary habits is not well understood.

Objective: This study aimed to investigate the relationship between screen time and dietary habits among young adults aged 18-27 years.

Methods: A cross-sectional study was conducted among 200 participants, including students and patients. Data was collected through a questionnaire, and screen time was categorized into low, moderate, and high usage. Dietary habits were assessed through a food frequency questionnaire.

Results: The study revealed significant associations between screen time and consumption of certain food groups, including grains and cereals ($p = 0.012$), fruits ($p = 0.013$), and sweet dishes ($p = 0.013$). Additionally, screen time was significantly associated with fast food consumption ($p = 0.05$) and general drinks ($p < 0.05$). However, no significant associations were found between screen time and consumption of vegetables, milk, yogurt, cheese, eggs, chicken, beef/mutton, fish, lentils, nuts/seeds, and tea/coffee.

Conclusion: This study highlights the potential impact of screen time on dietary habits, particularly in relation to unhealthy food choices. The findings suggest that adults with higher screen time usage tend to consume more fast food, sweet dishes, and sugary drinks, which can have implications for their overall health and well-being.

Keywords: Screen time, dietary habits, young adults, food consumption patterns, nutrition

INTRODUCTION

Sedentary screen time reduces mindful eating, encouraging processed food consumption and disrupting natural hunger cues. The amount of time spent on computers and watching television is known as screen time (ST), and it contributes significantly to sedentary behavior. The association between snack eating frequency and Screen Time (ST), which is the total amount of time spent watching TV and using a computer during free time, was examined by Kelis Hadi R et al. Students who spent more than four hours a day in front of a screen were less likely than those who spent less than four hours to drink milk every day. Eating too much while watching TV and consuming fast food might disturb eating patterns and result in obesity. More than 70% of young individuals engage in sedentary behavior, according to recent studies. Obesity can result from dietary habits that are disrupted by fast food and binge eating while watching TV. According to recent surveys, more than 70% of young individuals engage in sedentary behavior. For all age groups over two, screen time (ST), or time spent engaging in sedentary behavior, is restricted to no more than two hours a day. If early intervention is not taken, obesity is more likely to develop later in life. Studies have shown that, aside from sleeping, children and teenagers use media for an average of seven hours per day. On school days, kids watch a lot of TV, and on the weekends, they often spend five hours in front of screen¹. 35% of Saudi Arabia's population suffers from obesity, making it the 14th most obese country in the world. According to studies, Saudi university students use their smartphones for 3.5 to 8.5 hours a day on average, which is comparable to patterns in the United Arab Emirates, the United States, Canada, and Indonesia². Higher food intake and nutritional modifications were associated with increased screen time for 89.7% of Pakistani adults during the COVID-19 pandemic, compared to 48.8% prior to the pandemic³. Increased screen time was associated with higher consumption of snacks and fizzy drinks, lower levels of physical activity, and an increased risk of obesity, according to a study conducted in Karachi on 257 individuals aged 5 to 60⁴. 32% of students (ages 11 to 25) in Lahore reported using screens for more than seven hours per day, which resulted in bad eating habits. 57% overate, 54% skipped breakfast, and 45% postponed meals. Additionally, while utilizing electronic devices, 44% increased their intake of sweets and 56% increased their intake of fried meals⁵.

Individuals of various races and ages had distinct St. Additionally, those in upper socioeconomic groups spend more time playing video games and using screens than those in lower socioeconomic groups. Typical nuclear families are more likely to engage in screen-based activities, including gaming, entertainment, and other screen-based pursuits. These results could be influenced by how ST affects several health-related behaviors, particularly eating habits. Prolonged ST has been associated with poor adult dietary patterns, such as low nutritional quality foods like French fries, refined grain products, snacks, and desserts; decreased consumption of fiber, fish, vegetables, fruits, and whole grains; and increased consumption of sugar, especially from soft drinks⁶. With adults spending an average of 34 hours a week in front of screens, watching television (TV) is one of the most common sedentary behaviors among Americans. A graded association between television viewing and obesity is further supported by research, which shows that people who watch 2.5 to 4 hours a day are twice as likely to be overweight, and people who watch more than 4 hours a day are four times more likely to be overweight than people who watch less than an hour⁷.

Public health initiatives to decrease sedentary behavior and encourage healthy lifestyle choices are desperately needed, as there is ample evidence that excessive screen usage is associated with negative health effects. Increased consumption of sugar, particularly from soft drinks, lower intake of fiber, fish, vegetables, fruits, and whole grains, and a higher intake of low-nutrient foods like French fries, refined grain products, snacks, and desserts are all linked to poor dietary patterns in adults who spend a lot of time on screens. Overweight and obesity can result from poor dietary choices; for instance, excessive intake of sugarsweetened beverages has been found to be substantially linked to an annual weight gain of 0.12 to 0.22 kg. Over two hours a day on average were spent using "apps" and internet services on smartphones. For media consumption alone, American adults use screens for eight hours a day on average (including television, television-connected devices, smartphones, and tablets⁸. Screen time (ST), which includes using a computer, playing video games, and watching television, is becoming a major part of daily life and the most widespread form of sedentary behavior⁹.

Screen-based activities including viewing Television as well as using computers are linked to a higher risk of weight gain, becoming overweight or obese, developing diabetes, and dying from cardiovascular disease. Compared to men, women's TV viewing is a more general indicator of their sedentary lifestyle¹⁰. Additionally, research shows that excessive screen usage has a negative impact on mood, irritability, and intellectual and socioemotional development, all of which can result in poor academic achievement¹¹. Numerous characteristics, such as gender, age, way of parenting, sleep quality, participation in sports, use of nicotine and alcohol, and so on, have been linked to screen time exposure. Even if smartphones, tablets, and other electronic devices make people's lives easier and offer more options for entertainment and leisure, excessive screen time may also have negative health effects¹².

Video games and other screen-based entertainment have been demonstrated to raise the CNS's arousal, which may raise anxiety levels. Furthermore, sedentary screen-based habits have been connected to disturbed sleep patterns, which may also result in increased anxiety. the link to heightened anxiety risk, given that exercise has been demonstrated to help individuals feel less anxious¹³. A higher risk of memory and learning impairments, cognitive and mental illnesses, abuse of drugs, and variations in

cortex gray and white matter volumes is associated with too much screen time (defined as over two to three hours per day of exposure to electronic media, which includes television, computer screens, and mobile devices like tablets, smartphones, and laptops), especially during brain development. These findings are in line with the cognitive-behavioral-brain reserve (CBBR) hypothesis of dementia, which postulates that a lower risk of dementia is linked to more complex patterns of neural and mental activity in the early, middle, and later stages of life, while a higher risk is linked to less complex patterns¹⁴.

Longer screen usage was also linked to more issues with attention-deficient hyperactivity disorder (ADHD) and more psychotic-like episodes (PLEs), according to studies. The strong relationship between depressed symptoms and prolonged phone use was found to be largely mediated by sleep disturbances. This suggests that sleep disruption or deprivation may be the cause of mental health harm resulting from mobile phone use. Sleep, drinking, smoking, and physical exercise have all been linked to PLEs, PTSD, depression, and ADHD¹⁵. In our daily lives, screens are everywhere, convenient to use, and a common place for amusement and activity. Long-term screen use has been associated with detrimental developmental health outcomes, such as obesity, behavior issues, emotion regulation issues, delays in speech, lower executive functioning, and academic difficulties, even though there are some benefits to screen use for kids, such as involvement in educational programs¹⁶.

Watching TV while eating has been linked to consuming fewer grains, vegetables, and foods high in calcium. Those who use screens for longer periods of time are additionally more likely to consume a larger percentage of their calories when using them¹⁷. Diets richer in saturated fats, more portions of processed and red meat, French fries, processed grain, snacks, and desserts or sweets, and less portions of seafood; veggies, fruit, and whole grains were cross sectionally linked to increased television exposure. Watching more television was linked to higher skinfolds or body weight status¹⁸. Watching television has been linked to increased risk of obesity and type 2 diabetes, as well as cardiovascular disease indicators like leptin, high density lipoprotein, and low-density lipoprotein¹⁹. Young people are increasingly engaging in bad eating habits, such as skipping breakfast and consuming more sweetened soft drinks, and these behaviors may contribute to the development of obesity²⁰. Inability to complete activities, decreased curiosity, trouble establishing friends, and poor control of emotions (not keeping cool, fighting excessively, and becoming challenging to get up with) were all much more common among heavy screen users²¹.

METHODS

Applying the simple random sampling method, 200 participants between the ages of 18 and 27 were recruited for this cross-sectional study, which took place over the course of six months at Ghurki Hospital and Riphah International University. Pregnant women and people with diseases that could impede reliable self-reporting were expressly excluded from the research, which concentrated on the association between screen usage, food habits, and physical health. The researchers used a multi-tool strategy to provide a thorough analysis: anthropometric measures (weight, height, BMI, and waist circumference) gave objective physical data, while a demographic form recorded lifestyle behaviors and socioeconomic status. Using a Screen Time Questionnaire (STQ) for frequency and a Screen Time Log to differentiate between productive and non-productive use, screen time was carefully measured. Lastly, long-term nutritional patterns and their possible association with obesity indicators were assessed using a Food Frequency Questionnaire (FFQ).

RESULTS

Table 1: Demographic data of participants

Age of respondents	
Age(years)	n (%)
18-20	40(20.0)
21-23	134(67)
24-27	26(13)
Gender	
Male	50(25)
Female	150(75)
Socioeconomic Status of Respondents	
Lower	4(2)
Middle	187(93.5)
Upper	9(4.5)
BMI of respondents	
BMI	n (%)
underweight	40(20)
normal	115(57.5)
overweight	45(22.5)

Table 2: Association of frequency distribution of fast food with screen time

Fried items	Low User	Moderate User	High User	P value
Daily	4	8	3	0.05
1-2/week	9	13	27	
3-4/Week	7	10	36	
Occasionally	19	21	37	
Never	3	6	1	

Table 3: Association of frequency distribution of cereals with screen time

Cereals	Low User	Moderate User	High User	P value
Daily	24	80	38	0.012
1-2/Week	11	18	6	
3-4/Week	5	9	6	
Occasionally	1	1	1	
Never	0	0	0	

Table 4: Association of frequency distribution of fruits with screen time

Fruits	Low User	Moderate User	High User	P value
Daily	17	13	11	0.013
1-2/Week	9	37	14	
3-4/Week	11	29	14	
Occasionally	4	25	9	
Never	0	4	3	

Table 5: Association of frequency distribution of fried items screen time.

Fried items	Low User	Moderate User	High User	P value
Daily	3	2	3	0.03
1-2/week	10	35	23	
3-4/Week	7	32	27	
Occasionally	11	20	16	
Never	1	0	0	

DISCUSSION

This study used information gathered from 200 individuals, including patients and students, to investigate the connection between screen time and eating patterns among young adults between the ages of 18 and 24. Eighty percent of the participants were in the 20–24 age range, and seventy-four percent of them were female. The majority of participants (93.5%) came from middle-class backgrounds. Twenty percent were underweight, twenty-five percent were overweight, and fifty-seven percent had a normal BMI. 25% of participants had minimal screen time, 54% had moderate usage, and 25.5% had high screen time, according to the distribution of screen time. The study also looked at correlations between screen usage habits and BMI. The study demonstrated a statistically significant relationship between screen time and the frequency of grain and cereal eating ($p \leq 0.012$), but no significant relationship between screen time and BMI ($p > 0.05$). 41% of individuals reported eating rice every day, and 23%

reported eating it once or twice a week, making it a frequent dietary staple. Across screen time categories, there were differences in the intake of harmful items like pizza and burgers. These foods were consumed by 2.0% of low screen users every day, 4.5% once or twice a week, and 9.5% sometimes.

Those who used screens moderately were more likely to do so on a daily basis (4.0%), weekly (18.0%), and rarely (20.5%). 8.5% of high screen users indicated occasional use, 6.5% weekly, and 1.0% daily. These variations, however, did not reach statistical significance ($p = 0.405$). The study also examined the connection between consumption habits and screen time happiness. 4.5%, 8.5%, and 5.0% of less pleased users reported little, moderate, and high screen usage, respectively. 11% of screen users were low, 31.5 percent were moderate, and 10 percent were high. In contrast, 5% of screen users were low, 14% were moderate, and 10.5% were high. Although the proportion was somewhat higher than that reported by Patel SK et al. (18), where only 45% of individuals fell within the normal BMI range, the conclusion that almost half of the participants had a normal BMI was in line with the study by Ramesh A et al. (17). The findings imply that variables other than screen time, such levels of physical activity, socioeconomic status, and cultural influences, could be more important in influencing food patterns and BMI. These results demonstrate how intricate and multidimensional the connection is between young adults' health outcomes, eating habits, and screen usage. To investigate these factors more thoroughly, more study is necessary^{22,23}.

Long-term screen time is frequently associated with unhealthy eating habits, although the relationship is complicated and impacted by socioeconomic class, culture, and individual preferences. It's interesting to note that digital platforms can also be used to promote health through material about healthy recipes and online nutrition instruction. Therefore, further research is required to comprehend these complex relationships and create practical tactics that use technology to promote healthy behaviors and lower the dangers associated with nutrition²⁴. These findings suggest that the connection between screen time and BMI could be more nuanced than previously thought, underscoring the need for greater investigation to fully comprehend the wider health effects of extended screen time. Screen time is more strongly linked to higher BMI values, especially at the top end of the BMI range, according to the longitudinal findings, which are generally in line with cross-sectional data. Some research revealed no significant links between screen time and changes in mean BMI, whereas others reported minor positive relationships. Our results suggest that prior studies may have understated the effect of screen time on teenage obesity²⁵.

The association between screen time, especially watching television, and BMI has been the focus of the majority of the material that is now available. We could not, however, find any evidence to establish a robust longitudinal connection between TV viewing and BMI or other adiposity measurements and sedentary habits. Additionally, not much research has looked at how screen time relates to other health related factors. However, moderate evidence points to a considerable negative correlation between aerobic fitness and inactive time²⁶.

CONCLUSION

This study demonstrated a significant association between screen time and various dietary habits among young adults aged 18–27. Participants with higher screen time showed a greater tendency to consume fast food, fried items, sweet dishes, and sugar-sweetened beverages, while their intake of fruits was notably lower. These findings suggest that prolonged screen exposure may promote unhealthy eating behaviors, likely due to distracted eating, targeted food advertising, and reduced attention to nutritional quality during screen use. As digital engagement becomes increasingly central to modern lifestyles, these patterns raise public health concerns regarding the long- term impact on nutrition and overall well-being. Promoting mindful eating, reducing non-productive screen time, and integrating digital wellness with nutritional awareness campaigns are essential steps forward.

AUTHOR's CONTRIBUTION:

Author	Contribution
Areeha Fatima	Conceptualization, Methodology, Formal Analysis, Writing - Original Draft
Nazifa Fatima	Methodology, Formal Analysis, Writing, Results - Original Draft
Areeba Naveed	Formal Analysis, Data collection, Writing - Original Draft
Andleeb Shakoor	Resources provision; supervision of fieldwork; writing support; ethics & compliance oversight; final approval

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